

Annual Progress Report 2019

(FOR THE PERIOD FROM 01 January 2019 TO 31 December 2019)

Submitted to:

Director

**Indian Council of Agricultural Research
Agricultural Technology Application Research Institute (ATARI)
MRS, HA Farm Post, Hebbal
BANGALURU – 560 024**

Submitted by:

ICAR-TaralabaluKrishiVigyan Kendra, Davanagere

Kadalivana, LIC Colony Layout, B.I.E.T. Road

Davanagere - 577 004

Phone: 08192-263462,

Email: kvk.Davanagere@icar.gov.in

Website: www.taralabalukvk.com

PART I - GENERAL INFORMATION ABOUT THE KVK

1.1. Name and address of KVK with phone, fax and e-mail

KVK Address	Telephone		E mail	Web Address
	Office	Fax		
ICAR- Krishi Vigyan Kendra Kadalivana, LIC Colony Layout, B.I.E.T. Road, Davanagere – 577 004 Davanagere-Dist.	08192 – 263462	08192 – 297142	kvk.Davanagere@icar.gov.in dvgtkvk@yahoo.com	www.taralabalukvk.com

1.2 .Name and address of host organization with phone, fax and e-mail

Address	Telephone		E mail	Web Address
	Office	Fax		
Taralabalu Rural Development Foundation Sirigere – 577541 Chitradurga (Dist.)	08194 – 268829, 268842	08194 - 268847	ao@taralabalu.org (kvk.Davanagere@icar.gov.in)	http://www.taralabalu.org

1.3. Name of the Programme Coordinator with phone & mobile No

Name	Telephone / Contact		
	Residence	Mobile	Email
Dr. Devaraja T.N.	--	094498 – 56876	tngdevaraja@gmail.com

1.4. Year of sanction: 2004

1.5. Staff position as on 31 December 2019

Sl. No.	Sanctioned post	Name of the incumbent	Designation	M/F	Discipline	Highest Qualification (for PC, SMS and Prog. Asstt.)	Pay Scale	Basic pay	Date of joining KVK	Permanent /Temporary	Category (SC/ST/OBC/Others)
1	Head/Senior Scientist	Dr Devaraja T N	Senior Scientist-Cum-Head	M	Fishery	Ph.D. in Fisheries & Aquaculture	37400-67000	53580	17-05-2005	Permanent	Others
2	Scientist/SMS	Basavanagowda M G	Subject Matter Specialist	M	Horticulture	M.Sc. [Horti.]	15600-39100	26520	21-11-2006	Permanent	Others
3	Scientist/SMS	Mallikarjuna B O	Subject Matter Specialist	M	Agronomy	M.Sc. [Agri.] - Agronomy	15600-39100	25550	09-01-2008	Permanent	Others
4	Scientist/SMS	Dr G K Jayadevappa	Subject Matter Specialist	M	Animal Science	M.V.Sc. Animal Nutrition	15600-39100	25550	29-01-2008	Permanent	Others
5	Scientist/SMS	Raghuraja J	Subject Matter Specialist	M	Agri. Extension	M.Sc. [Agri.] – Agri. Extn.	15600-39100	24650	23-06-2008	Permanent	Others
6	Scientist/SMS	H.M. Sannagoudra	Subject Matter Specialist	M	Soil Science	M.Sc. [Agri.] – Soil Science & Agri. Chemistry	15600-39100	19880	01-07-2013	Permanent	Others
7	Scientist/SMS	VACANT	Subject Matter Specialist		Plant Protection	--	15600-39100	--	--	VACANT	--
8	Programme Assistant (Lab Tech.)	Revanasiddappa GBP	Programme Assistant	M	Lab Assistant	M.Sc. [Agri.] – Seed Science & Technology	9300-34800	12430	11-04-2012	Permanent	Others
9	Programme Assistant (Computer)	Santhosh B	Programme Assistant	M	Computer	B.Sc. (Computer Science)	9300-34800	15110	05-09-2008	Permanent	Others
10	Programme Assistant/ Farm Manager	Vijayakumar S B	Farm Manager	M	Farm Manager	M.Sc. [Agri] – Plant Breeding & Genetics	9300-34800	14540	23-06-2008	Permanent	Others
11	Assistant	Mallikarjuna S Gudihindala	Assistant / Superintendent	M	Assistant/ Superintendent	Bachelor in Commerce	9300-34800	18930	01-06-2005	Permanent	Others
12	Jr. Stenographer	Mamatha H Melmalagi	Stenographer Gr.III	F	Stenographer Gr.III	Bachelor in Commerce	5200-20200	12860	27-06-2005	Permanent	Others
13	Driver - 1	Marulasiddaiah N M	Driver (Jeep)	M	Driver (Jeep)	B.A.	5200-20200	--	01-06-2005	Permanent	Others
14	Driver - 2	S Shivakumar	Driver (Tractor)	M	Driver (Tractor)	S.S.L.C.	5200-20200	10470	01-06-2005	Permanent	Others
15	SS-1	B Shivakumar	Grade-I	M	Grade-I	S.S.L.C.	5200-20200	9200	01-06-2005	Permanent	Others
16	SS-2	S E Shivakumar	Grade-I	M	Grade-I	S.S.L.C.	5200-20200	9200	01-06-2005	Permanent	Others

1.6. Total land with KVK (in ha): 15 ha

S. No.	Item	Area (ha)
1	Under Buildings	1.75
2.	Under Demonstration Units	0.50
3.	Under Crops	7.25
4.	Orchard/Agro-forestry	5.0
5.	Others	0.5

1.7. Infrastructural Development:

A) Buildings

S. No.	Name of building	Source of funding	Stage					
			Complete			Incomplete		
			Completion Date	Plinth area (Sq.m)	Expenditure (Rs.)	Starting Date	Plinth area (Sq.m)	Status of construction
1.	Administrative Building	ICAR	04.01.2008	550	29.37			Completed
2.	Farmers Hostel	ICAR	04.01.2008	300	18,82,000.00			Completed
3.	Staff Quarters	ICAR	04.01.2008	400	19,40,000.00			Completed
	1. SMS (Animal Science)							
	2. SMS (Agri. Extension)							
	3. SMS (Soil Science)							
	4 Farm Manager							
	5. Office Assistant							
	6. Driver (Jeep)							
4.	Demonstration Units							
	1. Dairy with modern facilities	ICAR	04.01.2008	160	6,41,000.00			Completed
	2. Shade Home	DBT	29.03.2013	1000	2,10,000.00			Completed
	3. Azolla bulk production unit	RF	2010	3	3,000.00			Completed
	4. Azolla production unit	NICRA	28.03.2013	3.53	20,000.00			Completed
	5. Ornamental fish breeding unit	DBT	2010	700	1,49,955.00			Completed
	6. Fish polyculture pond with horti integration	DBT	2010	600				Completed
7.	Guava Scion Block	RF	November 2018	1,000	1,00,000/-			Completed
	8. Portable Carp hatchery	ICAR	31-03-2011	--	2,25,000-00			Completed
	9..Fodder demo units	RF	2010	4000	41,428.00			Completed

S. No.	Name of building	Source of funding	Stage					
			Complete			Incomplete		
			Completion Date	Plinth area (Sq.m)	Expenditure (Rs.)	Starting Date	Plinth area (Sq.m)	Status of construction
	10. Biogas unit	RF	2011	04	29920.00			Completed
	11. Fish cum paddy cultivation unit	RF	2011	421	13071.00			Completed
	12. Vermicomposting units	RF	2008	121	60000			Completed
	13 .Vermicomposting unit	DBT	2010	60	15000			Completed
5	Fencing	ICAR	31-03-2011	930 feet	11,00,000			Completed
6	Rain Water harvesting system	--	--	--	--	To be sanctioned	--	
7	Threshing floor	ICAR	31-03-2011		2,00,000-00			Completed
8	Farm godown	ICAR	--	--	--	To be sanctioned	--	
9	Bore wells (2 No.s)	ICAR	31-03-2011		3,00,000-00			Completed
10	Irrigation system	ICAR	31-03-2011		1,00,000-00			Completed
11	Borewell recharge unit	RF	01-06-2011		64,585-00			Completed
12	Plant Health Clinic	ICAR	01.04.2012		10,00,000.00			Completed
13	Orchards and agro forestry							Completed
	1. Mango	RF	2005	12000	53215.00			Completed
	2. Sapota orchard	RF	2010	4000	44775.00			Completed
	3. Hexagonal and penta planting of coconut garden, Germ plasm coconut	RF	2009	4000	9035.00			Completed
	4. Arecanut garden	RF	2007	8000	72228.00			Completed
	5.Tararind garden, Medicinal plants	RF	2005	2000	--			Completed
	6.Curry leaf garden	RF	2007	500	--			Completed
	7. Agro forestry with biofuel plants	RF	2013	24000	13,166-00			Completed
14	Miyawaki (2 unit)	RF	31-8-2019	1066 sq mts	65333			Completed
15	Truss work above Administration Building	Private Donors	December 2018		9,50,000-00			Completed
16	Ultra High Density Mango	RF	2018	4000 sq.m	14,920			Completed
17	Jack orchard	RF	2018	1000 sq. m	5511			Completed
18	Lime orchard	RF	2018	1000 sq. m	2147			Completed
19	Mixed Fruit Orchard	RF	2015	4000 sq.m	6811			Completed

S. No.	Name of building	Source of funding	Stage					
			Complete			Incomplete		
			Completion Date	Plinth area (Sq.m)	Expenditure (Rs.)	Starting Date	Plinth area (Sq.m)	Status of construction
20	High Density Mango Orchard	RF	2018	4000 sq. m	14,920			Completed
21	Jamun Orchard	RF	2018	1000 sq. m	8,000			Completed
22	Cashew Orchard	RF	2019	4000 sq. m	12,500			Completed

B) Vehicles

Type of vehicle	Year of purchase	Cost (Rs.)	Total kms. Run	Present status
Tractor and Trailer	2005	4,99,995-00	3904.2	Good
Power tiller Funded by FLD cotton	2008	99400-00	-	Good
Power Tiller	2010	131500-00	-	Good
Mahindra Bolero	2017	8,00,000-00	63697	Good
Hero Honda CD Deluxe	2006	39,298-00	77419	Good
Yamaha Alba	2009	48,309-00	64050	Good

C) Equipment & AV aids

Name of the equipment	Year of purchase	Cost (Rs.)	Present status
Mixer	2005	3,300/-	Good
Xerox Machine	2006	73,840/-	Not in working condition
Digital Camera	2006	19,900/-	Not in working condition
Over Head Projector	2006	19,935/-	Not in working condition
TV with DVD Player (Funded by SHIMUL)	2006	11,350/-	Not in working condition
Refrigerator (LG)	2007	10,000/-	Good
Deep Freezer + Stabilizer (Funded by ATMA)	2013	16,650/-	Good
Computer +LCD	2007	1,00,103/-	Good
Fax (4 in one)	2009	15,000/-	Good
Generator	2011	100000/-	Good
Sony Digital GPS Camera	2017	28,500/-	Good
Computer	2017	27,800/-	Good
UPS	2017	72,100/-	Good
Xerox Machine	2017	65,000/-	Good
LCD Projector	2017	32,100/-	Good
RO Water Purifier	2017	65,000/-	Good
Hard Disks (2 No.s)	2017	9,500/-	Good

1.8. Details of SAC meeting conducted during 2019

Date	Number of Participants	Salient Recommendations	Action taken	Remarks, if any
21-12-2019	<ol style="list-style-type: none"> 1. Sri K.P. Basavaraj, Member, Taralabalu Rural Development Foundation, Sirigere. (Chairman of the meeting). 2. Dr. M.J.Chandregouda, Director, ATARI, Bengaluru. 3. Dr. Nataraj S.P., Director of Extension, UAHS, Shimoga. 4. Dr. Manjunatha B., Scientist, AHRS, Kathalagere, Representing ADR, UAHS, Shivamogga. 5. Sri Sharanappa Mudagal, Joint Director of Agriculture, Davanagere. 6. Smt Shashikala T.R., Senior Assistant, Director of Horticulture, Representative, Deputy Director, Department of Horticulture, Davanagere 7. Dr. Jagdish, Assistant Director, Representative, Deputy Director, AH & VS, Davanagere. 8. Shri Rajanna, Deputy Conservator of Forests (Social Forestry), Davanagere. 9. Sri Adarsha, Assistant Director of Fisheries, Harihara, Representing SADF, Davanagere. 10. Shri Ashok, District Information and Publicity Officer, Davanagere. 11. Shri Sushruth Shastry, Lead Bank Manager, Canara Bank, Davanagere. 12. Shri Siddanna, Representative, Assistant Station Director, Executive, AIR, Chitradurga. 13. Sri Ravindra, Assistant General Manager, NABARD, Davnagere. 	<p>Group-I : To be addressed at KVK level</p> <ul style="list-style-type: none"> • Bench mark information of each farmer selected from DFI villages should be considered for DFI works. • Suggested to create awareness on soil analysis and to conduct soil health awareness programmes. • Provide some more good quality seeds and seedlings to farmers from KVK. • Try to practice and demonstrate more technologies in the KVK Instructional Farm. • Create awareness to reduce indiscriminate use of fertilizers. • Create awareness among farmers to reduce the cost of cultivation. • To create awareness among farmers for using residual moisture to cultivate Bengalgram. • To give information on economics of crop cultivation/ enterprise in each training programme. • Suggested to promote cultivation of multiple crops and avoid monocropping system. • Give information to farmers about Bank Linkages and schemes available for farmers on various enterprises/crop cultivation and suggested to use Bank finance judiciously. • Suggested the KVK to organize a separate meeting (Brain Storming Session) for developing action plan in DFI villages. • Encourage climate smart agriculture among farmers. • Suggested to develop Public- Public understanding system. Local officials should be involved for disseminating the information. 	On going	

	<p>14. Shri Raghavendra Prasad, Deputy Director, Sujala Watershed-III, Davangere.</p> <p>15. Shri. Venkataramanjaneya Swamy, Small Farmer, Salakatte, Harihara Taluk, Davanagere.</p> <p>16. Shri. Murugeshappa H.B., Big Farmer, Hedne, Harapanahalli Taluk, Davanagere.</p> <p>17. Smt. Yashoda G.C., Farm Woman, Rameshwara, Honnali Taluk, Davanagere.</p> <p>18. Smt. Siddabasamma, Farm Woman, Haluvarthy, Davanagere Taluk, Davanagere.</p> <p>19. Dr. Devaraja T.N., Member Secretary, Senior Scientist-Cum-Head, ICAR-Taralabalu Krishi Vigyan Kendra, Davanagere.</p> <p><u>Special Invitees:</u></p> <p>20. Shri. Hanumanthappa G., State President, Rajya Krishika Samaja, Davanagere.</p> <p>21. Sri. H.D. Maheshwarappa, Member, Taralabalu Rural Development Foundation, Sirigere.</p> <p>22. Dr. Ashok M., Senior Scientist-Cum-Head, KVK, UAHS, Navile, Shivamogga.</p> <p>23. Dr. Ashoka P. SMS (Animal Science), Representative, Senior Scientist-Cum-Head, KVK, Hanumanamatti, UAS, Dharwad</p> <p>24. Sri Thippeswamy, Deputy Director of Agriculture, DATC Kadajji, Davanagere Dist.</p> <p><u>FLD Farmer:</u></p> <p>Sri. H.M. Dyamappa, Haluvarthy, Davanagere tq & district.</p>	<p>Group-II : To be addressed through action plan of KVK in the year 2018-19</p> <ul style="list-style-type: none"> • Encourage Mango, Cashew and other less water requiring crops in drylands. • Recommend only crops that are suitable to that area and encourage alternate crops wherever necessary. • Encourage soil fertility management through green manure crops cultivation. • Encourage organic farming among farmers. • Introduce New Variety of onion developed by IIHR (Lalima / Keertima). • Suggested to popularize the Nutrigarden (Vertigarden) in rural areas. • Livestock are suffering from nutritional imbalances and to create more awareness programmes on these issues. 		
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	<p><u>ICAR- Taralabalu Krishi Vigyan Kendra Staff:</u></p> <p>Shri M.G Basavanagowda, SMS (Horticulture), KVK, Davanagere</p> <p>Shri B.O Mallikarjuna, SMS (Agronomy), KVK, Davanagere</p> <p>Dr.G.K.Jayadevappa, SMS (Animal Science), KVK, Davanagere</p> <p>Shri J Raghuraja, SMS (Agricultural Extension), KVK, Davanagere</p> <p>Shri Hanumanthagouda M. Sannagoudra, SMS (Soil Science), KVK, Davanagere</p> <p>Shri Vijayakumar S.B., Programme Assistant (Farm Manager), KVK, Davanagere</p> <p>Shri Revanasiddappa G.B.P, Programme Assistant (Lab Technician), KVK, Davanagere</p> <p>Shri Santhosh B., Programme Assistant (Computer), ICAR-TKVK, Davanagere</p> <p>Shri Mallikarjuna S Gudihindala, Assistant, KVK, Davanagere</p> <p>Smt. Mamatha H.M., Stenographer-Cum-Computer Operator, KVK, Davanagere</p> <p>Shri Shivakumara B., Office Attendant, KVK, Davanagere</p> <p>Shri Shivakumara S.E., Field Attendant, KVK, Davanagere</p> <p>Shri Shivakumara S., Tractor Driver, KVK, Davanagere</p>	<p>Group-III : To be addressed through convergence with Development Departments</p> <ul style="list-style-type: none"> • Suggested to organize Siridhanya Melas. • Suggested to popularize cashew crop instead of Arecanut crop. Conduct Awareness Programmes on this regard. • Encourage NRM works with farmers. • To provide assistance to farmers for creating onion storage structures from Department of Horticulture. • To use forest plants for farm boundaries from Department of Social forestry. • Cultivate Mahogany Plant in boundaries as it works as mosquito repellent. • Encourage Hydroponic fodder production among farmers during summer. • Suggested to encourage farmers to construct farm ponds and to take help from Development Departments. • Under cashew mission from Department of Horticulture use cashew seedlings (alternate to arecanut crop) and processing units can be established. • Fisheries activity in farm ponds should be encouraged for additional income. • Suggested to popularize medicinal plants cultivation among farmers. Give more awareness programmes in this regard. • Suggested to organize workshop for sellers and buyers (interacting session) on Agriculture/Horticulture commodities. • Millet processing units should be encouraged with the help of Department of Agriculture. 		
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PART II - DETAILS OF DISTRICT

2.1 Major farming systems/enterprises (based on the analysis made by the KVK)

S. No	Farming system/enterprise
1	Rainfed system: Maize, Maize+Redgram, Ragi, Ragi+Horsegram, Greengram-Ragi, Minor millets, Jowar, Bengalgram, Redgram, Groundnut, Sunflower, Cotton, Mango.
2	Irrigation (33%): Rice- Rice, Sugarcane, Arecanut, Banana, Coconut, Papaya, Vegetable crops, Fodder crops, Pomegranate
3	Enterprises: Poultry, Dairy, Sheep/ Goat rearing, Fisheries, Vegetable nursery, Nursery
4	Cropping intensity: 122%

Davanagere district is at the centre of the state and lies in between latitude of 75⁰.30' and 76⁰.30' and longitude of 13⁰.45' and 14⁰.50' with MSL of 602.5 m. The annual average rainfall of the district 662.7 mm (actual 721.1 mm in 2018). The variety of soil is medium to deep black and red sandy loam. The district is essentially kharif region and majority rabi crops will be taken up with the help of irrigation from lower Bhadra canal (Irrigation-33%). The district consist of 6 taluks, 810 villages, 418692 holdings with gross cropped area of 460772 ha. Majority of holding are marginal (135246, 47.84 %), followed by small (84521, 29.9%) semi-medium (45905, 16.24%). The total population of the district was 1945497 (According to 2011 censuses) with majority 67.66 % lives in rural areas and 32.34 % lives in urban areas.

2.2 Description of Agro-climatic Zone & major agro ecological situations (based on soil and topography)

S. No	Agro-climatic Zone	Characteristics
1.	Central Dry Zone (Zone IV)	Jagalur, Harihara and Davanagere Taluks come under Zone IV. We find red sandy soil mixed with clayey soil land patches of black soil in the zone. Major crops include Maize, Rice, Jowar, Sunflower, Sugarcane, Ragi, Minor millets, Vegetables, Coconut, Arecanut, Beetlevine, Groundnut, and Pomegranate.
2.	Southern transitional Zone (Zone VII)	Southern transitional zone includes Channagiri and Honnali taluks. The dominating soil types found are red sandy soil and black cotton soil. Major crops growing the zone are Maize, Rice, Ragi, Cotton, Chilli, Jowar, Groundnut, Arecanut, Coconut, Mango and other Commercial crops.

S. No	Agro ecological situation	Characteristics
1	Southern Plateau and Hills	Typical semi-arid zone; About 80 % of the area falls under rainfed farming; Cropping intensity is very low. Soils are shallow and medium, loamy red, Major crops are Rice, maize, sugarcane, Arecanut, coconut and millets.

2.3 Soil type/s

S. No	Soil type	Characteristics	Area in ha
1	Red Sandy Soil (Harihara, Channagiri, Jagalur, Davanagere Tq.)	Low water holding capacity Neutral pH Low Nitrogen content Medium in Phosphorus and Potash	1, 26,000
2	Deep to Medium Deep Black Soil (Jagalur, Davanagere, Harapanahalli)	High water holding capacity Neutral to Alkaline pH Medium in Nitrogen and Phosphorus High Potassium	54,000
3	Mixed Red and Black Soil (Honnali, Jagalur, Harapanahalli)	Medium water holding capacity Neutral pH Medium in Nitrogen, Phosphorus and Potassium content	1, 62,000
4	Sandy Loam Soil (Harapanahalli, Davanagere)	Poor water holding capacity Neutral pH Deficient in Nitrogen, Phosphorus and Potassium	18,000
Total			3, 60,000

2.4. Area, Production and Productivity of major crops cultivated in the district (2017-18)

S. No	Crop	Area (ha)	Production (Metric tons)	Productivity (kg /ha)
1	Maize	189436	815691	4533
2	Rice	64401	366340	5988
3	Ragi	23296	42038	1899
4	Jowar	10128	16417	1706
5	Bajra	1562	2327	1568
6	Wheat	196	222	1193
I	Total Cereals:	289786	1121376	
1	Tur (Pigeon pea)	8143	8440	1091
2	Bengalgram	4471	2510	591
3	Horsegram	830	589	747
4	Blackgram	132	62	494
5	Greengram	278	69	261
6	Cowpea & other	1602	585	384
7	Avare	781	760	104

II	Total Pulses:	16242	13020	
	Total Foodgrains:	306018	1134396	3902
1	Groundnut	16390	24932	1601
2		231	50	218
3	Sunflower	2505	2122	892
4	Castor	79	51	677
		60	10	169
III	Total Oilseeds:	19331	27260	
IV	Commercial Crops:			
1	Cotton	4768	6749	253
2	Sugarcane Planted	552		
2a	Sugarcane Ratoon	3795	410998	104
3	Tobacco	95	89	984
	GRAND TOTAL			

* Source : Department of Agriculture, Davanagere

Area, Production and Productivity of Horticulture crops in the district (2018-19)

Sl. No	Crop	Area (ha)	Production (Metric tons)	Productivity (t /ha)
1	Arecanut	47895	78605.20	1.64
2	Coconut	11132	1391.53 Lakh Nuts	13000 nuts/ha
3	Banana	5233.60	117254.49	22.40
4	Mango	2853.40	27244.66	9.22
5	Sapota	531.60	5439.50	10.23
6	Pomegranate	656.60	7319.11	11.15
7	Tomato	4783	172338.90	36.03
8	Onion	7287	130994.49	17.98
9	Green Chilli	1480	36374.04	24.58
10	Betervine	642.50	745.83 Lakh Leaves	1.16
11	Marigold	639	3085.93	4.83
12	Oil palm	854	7581.50	8.88
13	Cocoa	428.10	38.40	0.09

Source: Department of Horticulture, Davanagere

2.5. Weather data

Month	Rainfall (mm)		Temperature ° C		Relative Humidity (%)
	Normal	Actual	Maximum	Minimum	
January 2019	1	0.3			
February 2019	1	3.0			
March 2019	4	2.0			
April 2019	36	17.7			
May 2019	75	33.6			
June 2019	76	59.7			
July 2019	116	88.9			
August 2019	91	196.0			
September 2019	109	122.8			
October 2019	120	288.1			
November 2019	44	27.9			
December 2019	5	9.6			
Total	678	849.6			

Source: Department of Agriculture, Davanagere

2.6 Production and productivity of livestock, Poultry, Fisheries etc. in the district (2017-18)

Category	Population	Production	Productivity
Cattle			
<i>Crossbred</i>	124184	238880 t	6 liter/day
<i>Indigenous</i>	207891		
Buffalo	175896		
Sheep			
Crossbred	167	4229.25 t	--
<i>Indigenous</i>	343011		--
Goats	103187		--
Pigs			
<i>Crossbred</i>	144	--	--
<i>Indigenous</i>	3684	--	--
Poultry			
Hens	31,93,472	5168.99 Lakh Eggs	--
<i>Inland fisheries</i>	--	16052.53 t	800

Source: Department of Statistics, Davanagere

2.7 District profile maintained in the KVK has been **Updated** for 2019: **Yes / No**

2.8 Details of Operational area / Villages

Sl. No.	Taluk	Name of the block	Name of the village	How long the village is covered under operational area of the KVK (specify the years)	Major crops & enterprises	Major problem identified	Identified Thrust Areas
1	Channagiri Harihara	Tyavangi Bullapura Kondajji	Tyavangi Bullapura Kondajji	2	Rice	<ul style="list-style-type: none"> • Non Availability of water for timely operation for Tail enders ; • Higher cost of production; • Poor soil health; • Indiscriminate use of fertilizers 	ICM
2	Jagaluru	Bilichodu	Marikunte	1	Maize	<ul style="list-style-type: none"> • No Intercropping with pulses; • Use of local variety of redgram; • No INM and IPM measures; • Yield loss with sole Maize crop upto 80%; • Fall armyworm incidence. 	ICM
3	Nyamathi	Nyamathi	Ramehwara	3	Sorghum	<ul style="list-style-type: none"> • Imbalanced nutrient management; • No soil testing; • Use of local varieties; • No seed hardening • No intercropping 	ICM
4	Jagaluru Davanagere Channagiri	Jagaluru Davanagere Tyavanagi	Anaburu Haluvarthy Kittur Tyavangi	1	Finger millet	<ul style="list-style-type: none"> • No seed treatment with biofertilizers; • Improper spacing; • No INM; • Use of low yielding varieties. 	ICM
5	Jagaluru	Bilichodu	Marikunte	1	Tomato	<ul style="list-style-type: none"> • Calcium deficiency • Wilt • Sucking pests 	ICM
6	Jagaluru	Marikunte	Suragondanahalli	2	Drumstick	<ul style="list-style-type: none"> • Improper nutrient management and flower dropping. 	INM
7	Channagiri	Thyavanagi	Navilehallu	1	Arecanut (Compost culture)	<ul style="list-style-type: none"> • Disposal of Arecanut husk in road sides and burning. 	INM

8	Davanagere	Davanagere	Davanagere	2	Terrace Garden	<ul style="list-style-type: none"> •Lack of quality and timely availability of vegetables 	ICM
9	Jagaluru	Bilichodu	Asagodu	2	Sheep and Goat	<ul style="list-style-type: none"> •Low production due to worms load and imbalanced feeding 	Nutrition Management
10	Davanagere	Anagodu	Haluvarthy	2	Dairy	<ul style="list-style-type: none"> •Infertility/ Repeat breeding, •Low milk production, •Weakness in dairy animals, •High milk production cost 	Dairy Management
11	Davanager	Davanagere	Kundawada Hale Kundawada	3	Fisheries (2018-19)	<ul style="list-style-type: none"> •Low production. 	Production and Management of fishes
12	Channagiri	Santhebennur	Nithigere Hireuda	1	Redgram	<ul style="list-style-type: none"> •Low yield •Use of local variety •Incidence of pod borer 	ICM
13	Jagaluru	Jagaluru	Rangapura	1	Bengalgram	<ul style="list-style-type: none"> •No Seed treatment with Bio Fertilizers, •Use of Local varieties, • No INM measures and IPM measures followed 	ICM
14	Davanagere	Agasanakatte	Agasanakatte	5	Maize + Redgram	<ul style="list-style-type: none"> • Low yield • No intercrop • Cob worm incidence • Army worm and fall army worm • Use of old varieties like Hy 3c, TTB-7 and long duration 	ICM
15	Davanagere	Agasanakatte	Agasanakatte	5	Tomato	<ul style="list-style-type: none"> • Low yield • Poor water management • No IPDM practices • Improved hybrids are not cultivated 	IPDM
16	Davanagere	Agasanakatte	Agasanakatte	5	Arecanut	<ul style="list-style-type: none"> • Low yield • Inflorescence die back • No intercrops in Arecanut 	IPDM
17	Davanagere	Agasanakatte	Agasanakatte	5	Dairying	<ul style="list-style-type: none"> • Low milk yield • Scarcity of good quality fodder • Dealyed puberty 	Nutrition Management

18	Davanagere	Agasanakatte	Agasanakatte	5	Sheep and goat	<ul style="list-style-type: none"> • Lower body weight gain • Under nutrition • Worm infestation 	Nutrition and disease management
19	Davanagere	Agasanakatte	Agasanakatte	5	IFS	<ul style="list-style-type: none"> • Mono cropping systems 	ICM
20	Harihara	Ramathirtha	Ramathirtha	2	Rice	<ul style="list-style-type: none"> • Low yield • BPH, Sheath blight and blast • Tail enders 	IPM
21	Harihara	Ramathirtha	Ramathirtha	2	Maize	<ul style="list-style-type: none"> • Low yield • No intercrop with redgram • Stem borer and downey mildew • Incidence of fall army worm 	ICM
22	Harihara	Ramathirtha	Ramathirtha	2	Areanut	<ul style="list-style-type: none"> • Red mites in small plants • Incidence of Hidimundige • Incidence of nut splitting 	ICM
23	Harihara	Ramathirtha	Ramathirtha	2	Betelvine	<ul style="list-style-type: none"> • Foot rot • Downey mildew • Scales, root grub and leaf curl • Powdery mildew 	IDM
24	Harihara	Ramathirtha	Ramathirtha	2	Dairying	<ul style="list-style-type: none"> • Low yield • Infertility & repeat breeding • Mastitis 	Nutrition Management
25	Harihara	Ramathirtha	Ramathirtha	2	Sheep & goat rearing	<ul style="list-style-type: none"> • Lower body weight gain • Worm infestation 	Nutrition and disease management
26	Harihara	Ramathirtha	Ramathirtha	2	Fodder	<ul style="list-style-type: none"> • Low yield • Palatability problems 	Nutrition management
27	Harihara	Ramathirtha	Ramathirtha	2	Fisheries	<ul style="list-style-type: none"> • No fish culture 	Production and management of fishes
28	Harihara	Ramathirtha	Ramathirtha	2	IFS	<ul style="list-style-type: none"> • Mono cropping systems 	ICM
29	Channagiri	Kadaranahalli	Kadaranahalli	2	Rice	<ul style="list-style-type: none"> • Water scarcity (Tail end village) • BPH, Sheath blight and blast • Improper nutrient management (Excess of nitrogen application) • Increased cost of production 	ICM

30	Channagiri	Kadaranahalli	Kadaranahalli	2	Arecanut	<ul style="list-style-type: none"> • No intercrop • Water scarcity • Nut splitting, premature dropping of nuts • Yellowing of leaves • Disposal of Arecanut husk on road sides 	ICM
31	Channagiri	Kadaranahalli	Kadaranahalli	2	Dairy	<ul style="list-style-type: none"> • Scarcity of good quality of fodder • Under /malnutrition • Mastitis 	Nutrition management
32	Channagiri	Kadaranahalli	Kadaranahalli	2	Fisheries	<ul style="list-style-type: none"> • No fish culture 	Production and management of fishes
33	Channagiri	Kadaranahalli	Kadaranahalli	2	Natural resource management Borewell recharge	<ul style="list-style-type: none"> • Depleted ground water level 	Water management
34	Channagiri	Kadaranahalli	Kadaranahalli	2	Farm ponds	<ul style="list-style-type: none"> • No protective irrigation during critical stages of crop growth 	Water management
35	Channagiri	Kadaranahalli	Kadaranahalli	2	IFS	<ul style="list-style-type: none"> • Mono cropping systems 	ICM
36	Nymathi	Rameshwara	Rameshwara	5	Maize	<ul style="list-style-type: none"> • Low yield • Sole crop • Army worm and fall army worm • Improper nutrient management (No potash application) 	ICM
37	Nymathi	Rameshwara	Rameshwara	5	Onion	<ul style="list-style-type: none"> • Lower yield • Incidence of sucking pests • Splitting of bulbs at bulbing stage 	ICM
38	Nymathi	Rameshwara	Rameshwara	5	Bengalgram	<ul style="list-style-type: none"> • Low yield • Low yielding varieties • No IPM measures • Poor nutrient management • Weed management • Broadcasting method of sowing 	IPDM
39	Nymathi	Rameshwara	Rameshwara	5	Tomato	<ul style="list-style-type: none"> • Blossom end rot • Improper nutrient management • Pod borer • Blight incidence 	IPM

40	Nymathi	Rameshwara	Rameshwara	5	Dairying	<ul style="list-style-type: none"> • Low milk yield • Scarcity of good quality fodder • Delayed puberty 	Nutrition management
41	Nymathi	Rameshwara	Rameshwara	5	Sheep	<ul style="list-style-type: none"> • Lower body weight gain • Worm infestation 	Nutrition and disease management
42	Nymathi	Rameshwara	Rameshwara	5	IFS	<ul style="list-style-type: none"> • Mono cropping systems 	ICM
43	Jagalur	Marikuunate	Marikunte	4	Maize	<ul style="list-style-type: none"> • No intercrop • Fall army worm • Imbalanced nutrient management • Moisture stress at critical stage of crop growth 	ICM
44	Jagalur	Marikuunate	Marikunte	4	Cotton	<ul style="list-style-type: none"> • Improper nutrient management • Sucking pest and pink boll worm • Square dropping and leaf reddening 	ICM
45	Jagalur	Marikuunate	Marikunte	4	Groundnut	<ul style="list-style-type: none"> • Imbalanced nutrient management • Collar rot • Use of TMV-2 variety 	ICM
46	Jagalur	Marikuunate	Marikunte	4	Arecanut	<ul style="list-style-type: none"> • Imbalanced nutrient management • Inflorescence die back • No intercropping 	ICM
47	Jagalur	Marikuunate	Marikunte	4	Chilli	<ul style="list-style-type: none"> • Imbalanced nutrient management • No IPDM practices 	IPDM
48	Jagalur	Marikuunate	Marikunte	4	Fingermillet	<ul style="list-style-type: none"> • Imbalanced nutrient management • Stem borer 	ICM
49	Jagalur	Marikuunate	Marikunte	4	Drumstick	<ul style="list-style-type: none"> • Monocropping of Maize 	Utilization of inter space in young arecanut garden
50	Jagalur	Marikuunate	Marikunte	4	Dairying	<ul style="list-style-type: none"> • Low milk yield • Poor feeding due to shortage of fodder • Delayed puberty 	Nutrition management
51	Jagalur	Marikuunate	Marikunte	4	Sheep	<ul style="list-style-type: none"> • Lower body weight gain • Under nutrition • Worm infestation 	Nutrition and disease management
52	Jagalur	Marikuunate	Marikunte	4	IFS	<ul style="list-style-type: none"> • Mono cropping systems 	ICM

2.9 Details of Benchmark Information collected from DFI villages

Sl. No.	Taluk	Name of the block	Name of the village	Name of the Head of Household	Annual Gross Income (Rs.)	Annual Expenditure (Rs.)	Annual Net Income (Rs.)
1	Davanagere	Anagodu	Agasanakatte	Marulasiddesh H. M.	180000	156000	24000
2				Shivakumar B. C.	315912	120000	195192
3				Baramappa H.S.	60000	37200	22800
4				Shivakumar B.S.	96000	72000	24000
5				Arun H.N.	90744	51600	39144
6				Kotrappa C.	432000	240000	192000
7				Hanumanthappa A.S.	81996	54000	27996
8				Marulasiddappa P M	307992	216000	91992
9				Nagaraja H.S.	151992	84000	67992
10				Rudresh K.H.	51912	36000	15192
11				Bheemappa A.K.	120996	76560	44436
12				Smt. Meenakshamma	132996	96000	36996
13				Santhosh H.S.	103992	120000	16008
14				Shivakumar H.G.	73992	48000	25992
15				Lingaraj B.S.	160992	120000	40992
16				Smt. Kamalamma	108000	60000	48000
17				Siddaveerappa H.S.	111996	84000	27996
18				Hanumanthappa H.B.	276000	96000	180000
19				Haleshappa H.C.	300000	180000	120000
20				Basavarajappa B.	255960	180000	75960
21				Basavaraju B.C.	48000	36000	12000
22				Revanasiddappa B.	127992	120000	7992
23				Ravi H.S.	183600	120000	147600
24				Nagaraj H.B.	63996	36000	27996
25				Malleshappa R.C.	247920	198000	49920
26				Veerabhadrappe K.N.	48000	42000	6000
27				Marulasiddappa C	42620	36000	6620
28				Kallappa D.G.	25500	18000	7500
29				Siddappa H.S.	144000	74400	69600

30				Kalleshappa R.C.	247992	184200	63792
31				Channappa R.C.	210000	172200	37800
32				Maheshwarappa M.S.	216000	72600	143600
33				Marulasiddappa P.B.	102000	72000	30000
34				Vamadevappa B.	279996	180000	99996
35				Revanasiddappa B.	33996	30000	3996
36				Vasantakumar B.S.	303996	99600	204396
37				Shivanandappa B.	38496	26496	12000
38				Marulasiddappa C.C.	108000	90000	18000
39				Marulasiddaiah C.S.	90744	43200	47544
40				Siddalingappa B.S.	108000	90000	18000
41				Shivakumaraiah G.S.	120000	96000	24000
42				Siddesh K.G.	159996	114000	45995
43				Shivakumara A.S.	159600	138000	216000
44				Nagarajappa P.B.	124800	72996	51804
45				Shivanandappa R.V.	49500	36000	13500
46				Durgappa A.K.	144396	114000	30396
47				Shivakumara S.B.	57000	42000	15000
48				Shivanandappa H.S.	447996	216000	231996
49				Devendrappa A.B.	64800	44400	20400
50				Karibasamma	180000	30000	150000
51	Nyamathi	Rameshwara	Rameshwara	Chandrashekhar H.	138000	90000	48000
52				Smt. Suvarnamma G.	156000	134400	216000
53				Shankarappa J.	194400	144000	50400
54				Shantaraj R. N.	120000	114000	6000
55				Maheshwarappa H.S.	202800	132000	70800
56				Smt. Lalithamma N.	792000	684000	108000
57				Ramachandrappa M.	102000	102000	6000
58				Prakash P.G.	144000	136320	7680
59				Parameshappa D.	135000	102000	33000
60				Gurumurthy N.G.	120000	102000	18000
61				Ravi H.R.	342000	318000	24000

62			Smt. Kamalamma D.	414000	121200	292800
63			Mallesappa R.G.	292800	64000	228800
64			Eshwarappa D.	101000	96000	5000
65			Mallesappa C.	177600	168000	9600
66			Godappa G.	114000	96000	18000
67			Budyappa B.	72000	4800	67200
68			Smt. Parvathamma	610000	282000	328000
69			Shanmukhappa D.	216000	144000	72000
70			Maheshwarappa B.	234000	216000	18000
71			Mallesappa B.	348000	300000	48000
72			Mallesappa D.M.	684000	420000	264000
73			Rangappa S.	156000	15000	6000
74			Maheshwarappa A.	300000	276000	24000
75			Smt. Shantamma	228000	132000	96000
76			Karibasappa D.	216000	162000	54000
77			Theerthappa B.	318000	186000	132000
78			Shivamurthyappa R.D.	186000	114000	72000
79			Dyaneshappa V.	138000	102000	36000
80			Yogeshwarappa N.	936000	636000	300000
81			Mallikarjuna D.G.	228000	111600	116400
82			Smt. Chandramma	138000	126000	12000
83			Maheshwarappa S.	216000	145200	70800
84			Jagadeesha S.	57600	56400	1200
85			Maheshwarappa B.	301800	180000	121800
86			Parameshwarappa H.T.	189000	126000	63000
87			Mallesappa B.	315600	168000	147600
88			Gurubasappa B.G.	258000	234600	24000
89			Prabhudevappa	357600	225600	189900
90			Smt. Gangamma	348000	228000	120000
91			Maheshwarappa D.	164400	102000	62400
91			Jagadeeshappa Bhavi	206400	126000	80400
93			Gangadharappa D.G.	240000	228000	12000

94				Rajappa D.	84000	66000	18000
95				Nagarajappa G.	204000	162000	42000
96				Shivakumar D.	290400	14400	276000
97				Mallikarjunappa G.	516000	366000	150000
98				Mruthyunjayappa D.G.	156000	12000	36000
99				Onkeshappa D.O.	242400	176400	66000
100				Gangadharappa B.	127200	114000	13200

2.10 Priority thrust areas

S. No	Thrust area
1.	Integrated Crop Management in Rice, Maize, Sorghum, Finger Millet, Tomato, Redgram, Bengalgram, Arecanut, Onion, Cotton, Groundnut,
2.	Integrated Nutrient Management in Drumstick, Arecanut,
3.	Integrated Pest and Disease Management in Rice, Tomato, Arecanut, Betelvine, Bengalgram, Chilli.
4.	Dairy Management
5.	Nutrition Management in Dairy Animals, Sheep and Goat.
6.	Disease Management in Dairy Animals, Sheep and Goat.
7.	Production and Management of Fishes.

PART III - TECHNICAL ACHIEVEMENTS (2019)

3.A. Target and Achievements of mandatory activities

OFT				FLD			
1				2			
OFTs (No.)		Farmers (No.)		FLDs (No.)		Farmers (No.)	
Target	Achievement	Target	Achievement	Target	Achievement	Target	Achievement
05 (2018-19)	04 (1 Vitiated)	20	17	10 (2018-19)	10	108	108
04 (2019-20)	02 (Continued)	18	10 (8 Yet to implement)	02 (NFSM, 2018-19)	02	75	90
	02 (Yet to implement)			13 (2019-20)	11(2 Yet to implement)	123	103 (20 Yet to implement)
				02 (NFSM-2019-20)	02 (In progress)	125	147

Training				Extension Programmes			
3				4			
Courses (No.)		Participants (No.)		Programmes (No.)		Participants (No.)	
Target	Achievement	Target	Achievement	Target	Achievement	Target	Achievement
34 (2018-19)	95	1,262	3,329	877 (2018-19)	809	28,620	53,276
75 (2019-20)	140	2,755	5,051	627 (2019-20)	525	14,535	6,117

Seed Production (Q)		Planting material (Nos.)	
5		6	
Target	Achievement	Target	Achievement
8 (2018-19)	8.44	2,000 (2018-19)	13,795
17 (2019-20)	13.83	40,000 (2019-20)	17,479

Livestock, poultry strains and fingerlings (No.)		Bio-products (Kg)	
7		8	
Target	Achievement	Target	Achievement
5,000 (2018-19)	6270	50 (2018-19)	944
15,000 (2019-20)	38	500 (2019-20)	550

3.B1. Abstract of interventions undertaken

S. No	Thrust area	Crop/ Enterprise	Identified Problem	Interventions										
				Title of OFT if any	Title of FLD if any	Number of Training (farmers)	Number of Training (Youths)	Number of Training (extension personnel)	Extension activities (No.)	Supply of seeds (Qtl.)	Supply of planting materials (No.)	Supply of livestock (No.)	Supply of bio products	
1	ICM	Redgram (NFSM)	<ul style="list-style-type: none"> • Low yield • Use of local variety • Incidence of pod borer 	-	Integrated crop management in Redgram	06	-	-	11	2.5	-	-	<i>Trichoderma harziannum</i>	62 L
2	ICM	Bengalgram (NFSM)	<ul style="list-style-type: none"> • No Seed treatment with Bio Fertilizers, Use of Local varieties, No INM measures and IPM measures followed 	-	Integrated Crop Management in Bengal gram	05	-	-	15	-	-	-	<i>Trichoderma harziannum</i>	50 L
3	ICM	Rice	<ul style="list-style-type: none"> • Non Availability of water for timely operation for Tail enders ; • Higher cost of production; • Poor soil health; • Indiscriminate use of fertilizers 	-	Integrated Crop Manamgnemnt in Direct Dry seeded Rice (DSR)	07	-	-	35	0.1	-	-	<i>Azospillum, PSB</i>	10 L
4	ICM	Maize	<ul style="list-style-type: none"> • No Intercropping with pulses; • Use of local variety of redgram; • No INM and IPM measures; • Yield loss with sole Maize crop upto 80%; Fall armyworm incidence. 	-	Integrated Crop Management Practices in Maize +Redgram (BRG-5)	04	-	-	14	0.75	-	-	<i>Rhizobium and PSB</i>	50 kg

5	ICM	Sorghum	<ul style="list-style-type: none"> • Imbalanced nutrient management; • No soil testing; • Use of local varieties; • No seed hardening • No intercropping 	-	Integrated Crop Management in Sorghum	01	-	-	06	0.3	-	-	-	-
6	ICM	Finger millet	<ul style="list-style-type: none"> • No seed treatment with biofertilizers; • Improper spacing; • No INM; • Use of low yielding varieties. 	-	Integrated Crop Management practices in High yielding variety and Drought tolerant Finger Millet (ML-365)	03	-	-	1.25	-	-	-	<i>Azospirillum, PSB</i>	50 kg
7	ICM	Tomato (2018-19)	<ul style="list-style-type: none"> • Calcium deficiency • Wilt • Sucking pests 	-	ICM in Tomato	02	-	-	-	-	-	-	Arka Microbial Consortium	28 L
8	Nutrition Management	Sheep and Goat	<ul style="list-style-type: none"> • Low production due to worms load and imbalanced feeding 	-	Total Deworming and Balanced Nutrition in small Ruminants	02	-	-	05	-	-	-	-	-
9	Production and Management of fishes	Fisheries (2018-19)	<ul style="list-style-type: none"> • Low Production 	-	Rearing of carp fry in Jumbo Hapas as an entrepreneurship for better profitability	01	-	-	14	-	-	40,000 Fish fry	-	-
10	INM	Drumstick	Imbalanced Nutrient management, Flower dropping	Assessment of crop management strategies in drumstick for higher yield		2			7					
11	INM	Areca nut	Disposal and Burning of areca nut husk in road sides	Evaluation of performance of different compost cultures to decompose areca nut husk					6				Waste decomposer	5 bottle
													Compost culture	10 kg

12	ICM	Tomato	<ul style="list-style-type: none"> • Calcium deficiency • Wilt • Sucking pests 	-	ICM in Tomato	02	-	-	-	-	-	-	Arka Microbial Consortium	28
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3.B2. Details of technology used during reporting period

1. Redgram –NFSM

S.No	Title of Technology	Source of technology	Crop/enterprise	No.of programmes conducted			
				OFT	FLD	Training	Others (Extension Activities)
1	2	3	4	5	6	7	8
	Integrated crop management in Redgram	UAS, Bengaluru	Redgram	-	01	06	11

3.B2 contd..

No. of farmers covered															
OFT				FLD				Training				Others (Extension Activities)			
General		SC/ST		General		SC/ST		General		SC/ST		General		SC/ST	
M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
-	-	-	-	41	02	07	-	160	11	04	01	220	04	46	-

2. Bengalgram-NFSM

S.No	Title of Technology	Source of technology	Crop/enterprise	No.of programmes conducted			
				OFT	FLD	Training	Others (Extension Activities)
1	2	3	4	5	6	7	8
	Integrated crop management in Bengalgram -NFSM	JNKVV & ICRISAT	Bengalgram	-	01	05	15

3.B2 contd..

No. of farmers covered															
OFT				FLD				Training				Others (Extension Activities)			
General		SC/ST		General		SC/ST		General		SC/ST		General		SC/ST	
M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
-	-	-	-	27	-	12	01	141	03	36	-	346	08	114	-

3. Rice

1	2	3	4	5	6	7	8
	Integrated Crop Management in Direct Dry seeded Rice (DSR)	UAS, Bengaluru	Rice	-	01	07	35

3.B2 contd..

No. of farmers covered															
OFT				FLD				Training				Others (Extension Activities)			
General		SC/ST		General		SC/ST		General		SC/ST		General		SC/ST	
M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
-	-	-	-	05	-	-	-	150	-	30	-	565	134	193	23

4. Maize

S.No	Title of Technology	Source of technology	Crop/enterprise	No. of programmes conducted			
				OFT	FLD	Training	Others (Extension Activities)
1	2	3	4	5	6	7	8
	Integrated Crop Management Practices in Maize +Redgram (BRG-5)	UAS, Bengaluru	Maize		01	04	14

3.B2 contd..

No. of farmers covered															
OFT				FLD				Training				Others (Extension Activities)			
General		SC/ST		General		SC/ST		General		SC/ST		General		SC/ST	
M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
-	-	-	-	21	04	05	-	71	08	14	-	242	17	47	-

5. Sorghum

S.No	Title of Technology	Source of technology	Crop/enterprise	No. of programmes conducted			
				OFT	FLD	Training	Others (Extension Activities)
1	2	3	4	5	6	7	8
	Integrated Crop Management in Sorghum	UAS, Dharwad	Sorghum	-	01	01	06

3.B2 contd..

No. of farmers covered															
OFT				FLD				Training				Others (Extension Activities)			
General		SC/ST		General		SC/ST		General		SC/ST		General		SC/ST	
M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
-	-	-	-	08	02	-	-	14	-	03	-	113	-	08	-

6. Finger Millet

S.No	Title of Technology	Source of technology	Crop/enterprise	No.of programmes conducted			
				OFT	FLD	Training	Others (Extension Activities)
1	2	3	4	5	6	7	8
	Integrated Crop Management practices in High yielding variety and Drought tolerant Finger Millet (ML-365)	UAS, Bengaluru	Finger Millet	-	01	03	11

3.B2 contd..

No. of farmers covered															
OFT				FLD				Training				Others (Extension Activities)			
General		SC/ST		General		SC/ST		General		SC/ST		General		SC/ST	
M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
-	-	-	-	20	01	03	01	58	09	18	01	132	09	46	-

7. Tomato

S.No	Title of Technology	Source of technology	Crop/enterprise	No.of programmes conducted			
				OFT	FLD	Training	Others (Extension Activities)
1	2	3	4	5	6	7	8
	Integrated Crop Management in Tomato	IIHR, Bengaluru	Tomato		01	02	12

3.B2 contd..

No. of farmers covered															
OFT				FLD				Training				Others (Extension Activities)			
General		SC/ST		General		SC/ST		General		SC/ST		General		SC/ST	
M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
-	-	-	-	10	-	-	-	32	-	-	-	164	05	05	-

8. Sheep and Goat

S.No	Title of Technology	Source of technology	Crop/enterprise	No.of programmes conducted			
				OFT	FLD	Training	Others (Extension Activities)
1	2	3	4	5	6	7	8
	Total Deworming and Balanced Nutrition in small Ruminants	KVA & FSU, Bidar	Sheep and Goat	-	01	02	05

3.B2 contd..

No. of farmers covered															
OFT				FLD				Training				Others (Extension Activities)			
General		SC/ST		General		SC/ST		General		SC/ST		General		SC/ST	
M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
-	-	-	-	05	-	-	-	13	-	-	-	32	-	-	-

9. Fisheries

S.No	Title of Technology	Source of technology	Crop/enterprise	No. of programmes conducted			
				OFT	FLD	Training	Others (Extension Activities)
1	2	3	4	5	6	7	8
	Rearing of carp fry in Jumbo Hapas as an entrepreneurship for better profitability	UAHS, Shivamogga	Fisheries	-	01	01	14

3.B2 contd..

No. of farmers covered															
OFT				FLD				Training				Others (Specify)			
General		SC/ST		General		SC/ST		General		SC/ST		General		SC/ST	
M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
-	-	-	-	01	-	01	-	01	-	01	-	13	-	13	-

PART IV - On Farm Trial (2019)

4.A1. Abstract on the number of technologies assessed in respect of crops

Thematic areas	Cereals	Oilseeds	Pulses	Commercial Crops	Vegetables	Fruits	Flower	Plantation crops	Tuber Crops	TOTAL
Integrated Nutrient Management					01 (2018-19)			01 (2018-19)		02
					01 (2019)			01 (2019)		02
Varietal Evaluation								01 (2019)		01
Integrated Pest Management										
Integrated Crop Management										
Integrated Disease Management										
Small Scale Income Generation Enterprises										
Weed Management										
Resource Conservation Technology										
Farm Machineries										
Integrated Farming System										
Seed / Plant production										
Value addition										
Drudgery Reduction										
Storage Technique										
Mushroom cultivation										
Total										

4.A2. Abstract on the number of technologies refined in respect of crops

Thematic areas	Cereals	Oilseeds	Pulses	Commercial Crops	Vegetables	Fruits	Flower	Plantation crops	Tuber Crops	TOTAL
Integrated Nutrient Management										
Varietal Evaluation										
Integrated Pest Management										
Integrated Crop Management										
Integrated Disease Management										
Small Scale Income Generation Enterprises										
Weed Management										
Resource Conservation Technology										
Farm Machineries										
Integrated Farming System										
Seed / Plant production										
Value addition										
Drudgery Reduction										
Storage Technique										
Mushroom cultivation										
Total										

4.A3. Abstract on the number of technologies assessed in respect of livestock enterprises

Thematic areas	Cattle	Poultry	Piggery	Rabbit	Fisheries	TOTAL
Evaluation of Breeds						
Nutrition Management	01(2018-19)					01
Disease of Management	01 (2019)					01
Value Addition						
Production and Management						
Feed and Fodder						
Small Scale income generating enterprises						
TOTAL	02				01	03

4.A4. Abstract on the number of technologies refined in respect of livestock enterprises

Thematic areas	Cattle	Poultry	Piggery	Rabbit	Fisheries	TOTAL
Evaluation of Breeds						
Nutrition Management						
Disease of Management						
Value Addition						
Production and Management						
Feed and Fodder						
Small Scale income generating enterprises						
TOTAL						

4.B. Achievements on technologies Assessed and Refined

4.B.1. Technologies Assessed under various Crops

Thematic areas	Crop	Name of the technology assessed	No. of trials	Number of farmers	Area in ha (Per trial covering all Technological Options in a farm)
Integrated Nutrient Management	Drumstick (2018-19)	Assessment of crop management strategies in drumstick for higher yield	5	5	3
	Arecanut (2018-19)	Evaluation of performance of different compost cultures to decompose arecanut husk	5	5	0.25
	Drumstick (2019)	Assessment of crop management strategies in drumstick for higher yield	5	5	3
	Arecanut (2019)	Evaluation of performance of different compost cultures to decompose arecanut husk	5	5	0.25

Varietal Evaluation					
	Black Pepper (2019)	Assessment of different varieties of Black pepper as intercrop in Arecanut gardens	03	03	0.3
Integrated Pest Management					
Integrated Crop Management					
Integrated Disease Management					
Small Scale Income Generation Enterprises					
Weed Management					
Resource Conservation Technology					
Farm Machineries					
Integrated Farming System					
Seed / Plant production					
Value addition					
Drudgery Reduction					
Storage Technique					
Mushroom cultivation					
Total					

4.B.2. Technologies Refined under various Crops

Thematic areas	Crop	Name of the technology assessed	No. of trials	Number of farmers	Area in ha (Per trial covering all Technological Options in a farm)
Integrated Nutrient Management					
Varietal Evaluation					
Integrated Pest Management					
Integrated Crop Management					
Integrated Disease Management					
Small Scale Income Generation Enterprises					
Weed Management					
Resource Conservation Technology					
Farm Machineries					
Integrated Farming System					
Seed / Plant production					
Value addition					
Drudgery Reduction					
Storage Technique					
Mushroom cultivation					
Total					

4.B.3. Technologies assessed under Livestock and other enterprises

Thematic areas	Name of the livestock enterprise	Name of the technology assessed	No. of trials	No. of farmers
Evaluation of breeds	Fisheries	Growth assessment of improved fish varieties in polyculture system	02	02
Nutrition management	Crossbred Dairy Cattle (2018-19)	Effect of feeding Urea-Treated Paddy straw along with grain mixture in dairy animals	05	05
	Crossbred Dairy Cattle (2018)	Effect of feeding Urea-Treated Paddy straw along with grain mixture in dairy animals	05	05
Disease management				
Value addition				
Production and management				
Feed and fodder				
Small scale income generating enterprises				
Total				

4.B.4. Technologies Refined under Livestock and other enterprises

Thematic areas	Name of the livestock enterprise	Name of the technology assessed	No. of trials	No. of farmers
Evaluation of breeds				
Nutrition management				
Disease management				
Value addition				
Production and management				
Feed and fodder				
Small scale income generating enterprises				
Total				

4.C1.Results of Technologies Assessed

Crop/ enterprise	Farming situation	Problem definition	Title of OFT	No. of trials	Technology Assessed	Source of technology	Yield	Unit of yield	Observations other than yield	Gross Return Rs. / unit	Net Return Rs. / unit	BC Ratio (Gross income/ Gross Cost)
1	2	3	4	5	6	7	8	9	10	11	12	13
Drumstick	Irrigated	Imbalanced Nutrient management, Flower dropping	Assessment of crop management strategies in drumstick for higher yield	5	T.O.1 (Farmers practice): Soil application of 100 g 15:15:15/plant along with FYM + Remaining ICM practices		296.86	q/ha	<ul style="list-style-type: none"> Number of pods: 126.80 Pods length: 57.79 	742150	602271	5.40
					T.O.2: Soil test based application of 54:134:32 N:P ₂ O ₅ :K ₂ O / plant along with FYM +Remaining ICM practices	UHS, Bagalkot	278.24	q/ha	<ul style="list-style-type: none"> Number of pods: 146.40 Pods length: 65.81 	695600	568061	5.45
					T.O.3: Soil test based fertilizer application of 45:15:30 g of N:P ₂ O ₅ :K ₂ O/plant along with FYM + 0.4% Micronutrient mixture + 20ppm NAA (2 spays at flower initiation and 10 days after first spray) +Remaining ICM practices	TNAU, Coimbatore	312.98	q/ha	<ul style="list-style-type: none"> Number of pods: 151.80 Pods length: 64.06 	782450	654050	6.09
Crop/ enterprise	Farming situation	Problem definition	Title of OFT	No. of trials	Technology Assessed	Source of technology	Yield	Unit of yield	Observations other than yield	Gross Return Rs. / unit	Net Return Rs. / unit	BC Ratio (Gross income/ Gross Cost)
1	2	3	4	5	6	7	8	9	10	11	12	13
Arecanut	Irrigated	Burning of arecanut husk	Evaluation of performance of different compost cultures to decompose arecanut husk	5	T.O.1 (Farmers practice): Dispose of arecanut husk in road sides and burning				C:N ratio at 120 Days: 63.84			
					T.O.2: Composting the arecanut husk in a proper way by using decomposer compost culture @ 1 bottle/t	NCOF, New Delhi			C:N ratio at 120 Days: 46.02			

					T.O.3: Composting the arecanut husk in a proper way by using UAHS, Shivamogga compost culture @ 1kg/t	UAHS, Shivamogga			C:N ratio at 120 Days: 36.52			
					T. O. 4: Composting the arecanut husk in a proper way by using UAS, Dharwad compost culture @ 2kg/t	UAS, Dharwad			C:N ratio at 120 Days: 32.16			
Dairying	Home Stead	<ul style="list-style-type: none"> Generally dairy animals are fed with poor quality dry roughages along with a few feed ingredients. These fodders when fed to high yielding dairy animals would not support production and health due to deficiency of Protein, energy & minerals. Poor quality dry roughages when enriched with urea and fed along with Grain mixture (starch) improved the digestibility of dry roughages and supplied the crude protein & Energy(TDN) required by the animal. 	Effect of feeding urea- treated paddy straw along with grain mixture in dairy animals.	05	T.O.1: (Farmers practice): Feeding dairy animals with low quality dry roughages and non-leguminous green fodders along with cake & bran items	Farmers Practice	1955.4	L / lactation	<ul style="list-style-type: none"> Milk quality (CLR): 1.025 Feeding cost (Rs. /lactation / animal): 37210 Cost of milk production (Rs./L):19.18 	11675	1.31	
					T.O. 2 Feeding dairy animals with urea-treated dry roughages, green fodders and compounded animal feeds as per the NRC specifications	KVAFSU, Bidar		2577.6	L / lactation	<ul style="list-style-type: none"> Milk quality (CLR): 1.027 Feeding cost (Rs. /lactation / animal): 34465 Cost of milk production (Rs. /L):13.62 	29975	1.86
					T.O. 3 Feeding dairy animals with urea-treated dry roughages,	NDRI, Bengaluru		2647.6	L / lactation	<ul style="list-style-type: none"> Milk quality (CLR): 1.028 	34470	2.08

					green fodders and compounded animal feeds as per the NRC specifications. PLUS using 1-2 kg grain mixture at the time of feeding urea-treated dry roughages				• Feeding cost (Rs. /lactation / animal): 31720 Cost of milk production (Rs./L): 12.29			
Fisheries	Irrigated	Low yield	Growth assessment of improved fish varieties in polyculture system	2	T.O.1 (Farmers practice): Common carp	KVAFSU, Bidar, Karnataka and UAS, Bengaluru	3.6	t/ha	Average Body weight (g): 600	80,000	1,72,000	3.15
					T.O.2: Amur common carp		5.4	t/ha	Average Body weight (g): 900	4,32,000	3,32,000	4.32
					T.O.3: Jayanthi Rohu		5.1	t/ha	Average Body weight (g): 850	4,08,000	3,08,000	4.08
					T. O.4: GIFT Tilapia		5.4	t/ha	450	5,40,000	4,40,000	5.4

4.C2. Details of Successfully completed / concluded technology assessment (support with necessary summary of data and photographs)

1. Drumstick

1. Title of Technology Assessed: Assessment of crop management strategies in drumstick for higher yield.
2. Performance of the Technology on specific indicators: Increased number of pods per plant was observed.
3. Specific Feedback from farmers: Good yield obtained in the plot where micronutrients and plant growth promoter used.
4. Specific Feedback from Extension personnel and other stakeholders: Application of micronutrients at right time increases the yield.
5. Feedback to Research System based on results and feedback received: Interaction of growth promoters with pesticides to be studied to reduce application cost.

2. Arecanut

1. Title of Technology Assessed: Evaluation of performance of different compost cultures to decompose arecanut husk
2. Performance of the Technology on specific indicators: Faster decomposition was observed in pits used compost cultures from UAS, Dharwad and UAHS, Shivamogga.
3. Specific Feedback from farmers: Application of compost cultures to arecanut husk can reduce the time take for its decomposition.
4. Specific Feedback from Extension personnel and other stakeholders: A good technology to popularise among farmers.
5. Feedback to Research System based on results and feedback received: An easy application and multiplication method to be developed.

3. Dairying

1. Title of Technology Assessed: Effect of feeding urea- treated paddy straw along with grain mixture in dairy animals.
2. Performance of the Technology on specific indicators: Intake of fodder was more in technology option 2 and 3.
3. Specific Feedback from farmers: Easy to practice and animal likes enriched dry fodder. Good idea to avoid fodder wastage and beneficial to farmers.
4. Specific Feedback from Extension personnel and other stakeholders: Technology can be taken up for mass adoption
5. Feedback to Research System based on results and feedback received: Fodder blocks making is convenient. Dry fodders should be enriched at the time of harvesting and kept for use. Technological product is required for this feeding practice.

4. Fisheries

1. Title of Technology Assessed: Growth assessment of improved fish varieties in polyculture system
2. Performance of the Technology on specific indicators: Yield obtained among assessed species was above 5 t/ha in all.
3. Specific Feedback from farmers: Amur common carp fetched better market price.
4. Specific Feedback from Extension personnel and other stakeholders: These new species can be tried in bigger areas especially amur common carp and jayanthi rohu.
5. Feedback to Research System based on results and feedback received: Seed quality of Jayanthi Rohu and Tilapia need attention.

Results of Technologies Assessed (2019)-ON GOING

Crop/enterprise	Farming situation	Problem definition	Title of OFT	No. of trials	Technology Assessed	Source of technology	Yield	Unit of yield	Observations other than yield	Gross Return Rs. / unit	Net Return Rs. / unit	BC Ratio (Gross income/ Gross Cost)
1	2	3	4	5	6	7	8	9	10	11	12	13
Drumstick	Irrigated	Imbalanced Nutrient management, Flower dropping	Assessment of crop management strategies in drumstick for higher yield	5	T.O.1 (Farmers practice): Soil application of 100 g 15:15:15/plant along with FYM + Remaining ICM practices							
					T.O.2: Soil test based application of 54:134:32 N:P ₂ O ₅ :K ₂ O / plant along with FYM +Remaining ICM practices	UHS, Bagalkot						
					T.O.3: Soil test based fertilizer application of 45:15:30 g of N:P ₂ O ₅ :K ₂ O/plant along with FYM + 0.4% Micronutrient mixture + 20ppm NAA (2 spays at flower initiation and 10 days after first spray) +Remaining ICM practices	TNAU, Coimbatore						

Crop/enterprise	Farming situation	Problem definition	Title of OFT	No. of trials	Technology Assessed	Source of technology	Yield	Unit of yield	Observations other than yield	Gross Return Rs. / unit	Net Return Rs. / unit	BC Ratio (Gross income/ Gross Cost)
1	2	3	4	5	6	7	8	9	10	11	12	13
Areca nut	Irrigated	Burning of areca nut husk	Evaluation of performance of different compost cultures to decompose areca nut husk	5	T.O.1 (Farmers practice): Dispose of areca nut husk in road sides and burning							
					T.O.2: Composting the areca nut husk in a proper way by	NCOF, Newdelhi						

					using decomposer compost culture @ 1 bottle/t							
					T.O.3: Composting the arecanut husk in a proper way by using UAHS, Shivamogga compost culture @ 1kg/t	UAHS, Shivamogga						
					T. O. 4: Composting the arecanut husk in a proper way by using UAS, Dharwad compost culture @ 2kg/t	UAS, Dharwad						

Crop/ enterprise	Farming situation	Problem definition	Title of OFT	No. of trials	Technology Assessed	Source of technology	Yield	Unit of yield	Observations other than yield	Gross Return Rs. / unit	Net Return Rs. / unit	BC Ratio (Gross income/ Gross Cost)
1	2	3	4	5	6	7	8	9	10	11	12	13
Black Pepper	Irrigated	Lack of knowledge on suitable intercrop Less return in existing intercrops Fluctuation in price	Assessment of different varieties of Black pepper as intercrop in Arecanut gardens	03	T.O.1 (Farmers practice): No intercrop							
					T.O.2: Panniyur -4	KAU						
					T.O.3: Coorg excel	CHES, Chettalli						
					T.O.4: IISR Thevam	IISR, Calicut						
Dairying	Home Stead	Dairy animals are generally fed with roughages which are very poor in nutrients along with a few concentrate mixtures. These feeding stuffs when fed to dairy animals would not meet the nutritional requirements esp; Energy & Proteins. Poor quality dry	Effect of feeding Urea- treated paddy straw along with grain mixture in Dairy Animals	05	T.O.1: No periodical deworming, Feeding dry fodders along with brans & Cakes	Farmers Practice						
					TO-2: Deworming + Feeding urea treated dry fodders along with compounded feeds, Minerals & Vitamins	KVAFSU, Bidar						
					TO-3 Deworming + Feeding urea treated dry	NDRIKernal						

		roughages when enriched with Urea and fed along with easily available energy (starch) meets the nutritional requirements of the producing animals			fodders along with grain mixture (starch), compounded feeds, Minerals & Vitamins							

4.D1. Results of Technologies Refined- Nil

Crop/ enterprise	Farming situation	Problem definition	Title of OFT	No. of trials	Technology Refined	Source of technology	Yield	Unit of yield	Observations other than yield	Gross Return Rs. / unit	Net Return Rs. / unit	BC Ratio (Gross income/ Gross Cost)
1	2	3	4	5	6	7	8	9	10	11	12	13
					T.O.1 (Farmers practice)							
					T.O.2							
					T.O.3							

4.D.2. Details of Technologies refined: Nil

1. Title of Technology Refined
2. Performance of the Technology on specific indicators
3. Specific Feedback from farmers
4. Specific Feedback from Extension personnel and other stakeholders
5. Feedback to Research System based on results/feedback received

PART V - FRONTLINE DEMONSTRATIONS (2019)

5.A. Summary of FLDs implemented

Sl. No.	Category	Farming Situation	Season	Crop	Variety/ breed	Hybrid	Thematic area	Technology Demonstrated	Area (ha)		Farmers (No.)		Farmers (No.)	
									Proposed	Actual	SC/ST	Others	Small/ Marginal	Others
	Oilseeds													
	Pulses													
1	Redgram (NFSM)	Rainfed	Kharif 2018-19	Redgram	BRG-5	-	ICM	<ul style="list-style-type: none"> • Use of BRG-5 medium duration wilt resistant variety • Trichoderma harziannum @10 ml/l. • Spray with micro @ 5ml/l (micro nutrient mixture from RCF Ltd), • Spray with Zincob micro nutrient mixture @ 5ml/l* • Installation of Pheromone traps @ 8no. / ha(16 lures), • Spray with Profenophos @ 2ml/l- ovicidal- 1 l/ha, • Spray with Chlorantrinirole insecticide @ 0.3ml/l, 	20	20	07	43	31	19
2	Benglgram	Rainfed	Rabi 2018-19	Bengalgram	JAKI-9218	-	ICM	<ul style="list-style-type: none"> • Integrated Crop Management in Bengalgram – • Use of HYV JAKI-9218 @ 62.5 kg/ha; • Seed treatment with Trichoderma harziannum @4gm/kg of seed; • Seed treatment and soil application of Rhizobium, PSB and VAM @ 2.0 kg each /ha; 	10	16	12	28	31	09

								<ul style="list-style-type: none"> • Pulse magic @ 5kg/ha (50% each at flowering and pod formation); • Use of trap crop @ 5kg/ha; • Use of bird perches; • Use of pheromone traps @10/ha; 1st spray with ovicidal insecticides Profenophos @ 2 ml/l, spraying of Chlorantriprole @ 75 ml / ha 						
3	Redgram	Rainfed	Kharif 2019-20	Redgram	BRG-5	-	ICM	<ul style="list-style-type: none"> • Use of BRG-5 medium duration wilt resistant variety • Trichoderma harziannum @10 ml/l. • Spray with microla @ 5ml/l (micro nutrient mixture from RCF Ltd), • Spray with Zincob micro nutrient mixture @ 5ml/l* • Installation of Pheromone traps @ 8no. / ha(16 lures), • Spray with Profenophos @ 2ml/l- ovicidal- 1 l/ha, • Spray with Chlorantriprole insecticide @ 0.3ml/l, 	30	42.8	10	97	77	30
4	Benglgram	Rainfed	Rabi 2019-20	Bengalgram	JAKI-9218	-	ICM	<ul style="list-style-type: none"> • Integrated Crop Management in Bengalgram – • Use of HYV JAKI-9218 @ 62.5 kg/ha; • Seed treatment with Trichoderma harziannum @4gm/kg of seed; • Seed treatment and soil application of Rhizobium, PSB and 	20	20	02	38	35	05

								<p>VAM @ 2.0 kg each /ha;</p> <ul style="list-style-type: none"> • Chickpea special @ 3.75kg/ha (50% each at flowering and pod formation); • Use of trap crop @ 5kg/ha; • Use of bird perches; • Use of pheromone traps @10/ha; 1st spray with ovicidal insecticides Profenophos @ 2 ml/l, spraying of Chlorantrinirole @ 75 ml / ha 						
	Cereals													
5	Rice	Irrigated	Kharif 2018-19	Rice	JGL-Sona	-	ICM	<ul style="list-style-type: none"> • Seeds 12kg/acre • . Mechansised sowing (Seed Cum fertiliser drill) • .Pre –Emergent Weedicide (2-3 DAS)-Pendimethilin 30EC 0.5l • .Post –Emergent Weedicide Bispyriback Sodium 100 SC – (Grasses and Sedges) 100ml + Metsulfuron 20 WP 8g (Broad leaf) 15-20 DAS • .Plant protection Measure: Installation of pheromone traps 4 no./acre (lures) against army worm • Micro Nutrient application (Zn and Fe)- 	02	02	-	05	02	03
6	Rice	Irrigated	Kharif 2019-20	Rice	JGL-Sona	-	ICM	<ul style="list-style-type: none"> • Seeds 12kg/acre • . Mechansised sowing (Seed Cum fertiliser drill) • .Pre –Emergent Weedicide (2-3 DAS)-Pendimethilin 30EC 0.5l • .Post –Emergent Weedicide Bispyriback Sodium 100 SC – (Grasses and Sedges) 100ml + Metsulfuron 	2.5	2.5	-	05	03	02

								20 WP 8g (Broad leaf) 15-20 DAS <ul style="list-style-type: none"> • Plant protection Measure: Installation of pheromone traps 4 no./acre (lures) against army worm • Micro Nutrient application (Zn and Fe)- 						
7	Maize	Rainfed	Kharif 2018-19	Maize	BRG-5	Private	ICM	<ul style="list-style-type: none"> • Integrated Crop Management in Maize + Redgram; • Management (Spray with Chlorpyrifos @ 2ml/l (Stem Borer) and Mancozeb-2.5g/l (Downey mildew) for Maize; • Medium duration, wilt tolerant and red seeds BRG-5 variety; • Seed treatment with bio fertilizers Azosprillum, PSB, VAM @ 3 kg • Spray with Pulse magic (UAS, Raichur) 10g/l @ 5kg/ha; • Installation of Pheromone traps @ 8no. / ha (16 lures); • Spray with Profenofos @ 2ml/l- Ovicidal- 1 l/ha; • Spray with Neem based insecticide @3ml/l – 1 l/ha; • Spray with Indaxicarb @0.5ml/l -200 ml/ha . 	12	12	5	25	20	10
8	Maize+Redgram	Rainfed	Kharif 2019-20	Maize	-BRG-5	Private	ICM	<ul style="list-style-type: none"> • Integrated Crop Management in Maize + Redgram; • Management (Spray with Chlorpyrifos @ 2ml/l (Stem Borer) and Mancozeb-2.5g/l (Downey mildew) for Maize; • Medium duration, wilt tolerant and red seeds BRG-5 variety; • Seed treatment with bio fertilizers 	4.0	6.4	-	16	16	-

								<p>Azosprillium, PSB, VAM @ 3 kg</p> <ul style="list-style-type: none"> • Spray with Pulse magic (UAS, Raichur) 10g/l @ 5kg/ha; • Installation of Pheromone traps @ 8no. / ha (16 lures); • Spray with Profenofos @ 2ml/l- Ovicidal- 1 l/ha; • Spray with Neem based insecticide @3ml/l – 1 l/ha; • Spray with Indoxicarb @0.5ml/l -200 ml/ha . 						
9	Sorghum	Rainfed	Rabi 2018-19	Sorghum	SPV-2217	-	ICM	<ul style="list-style-type: none"> • Variety SPV-2217; • Seed treatment with calcium chloride to induce drought tolerance (overnight soaking); • Seed treatment with Azotobactor, PSB @ 500g/ha; • Spraying of 19:19:19 @ 5g/l and micronutrient solution @ 3-4 ml/l at 30 DAS; • Spraying of Chlorpyrifos 20EC- @ 2ml/l to manage stem borer; • Spraying of Hexaconazole @ 1ml/l to manage rust; • Weed and water management 	04	04	-	10	07	03
	Millets													
10	Fingermillet	Rainfed	Kharif 2018-19	Fingermillet	ML 365	-	ICM	<ul style="list-style-type: none"> • Variety ML-365 (105-110 days); • Soil test based nutrient application; • Seed treatment with bio fertilizers Azosprillium, PSB, VAM @ 3 kg/ha; • Spraying of Micronutrient –(3-4 ml/l) ZnSO4; • Use of water soluble fertilizers (tillering 	10	10	04	21	18	07

	Vegetables							stage) 13:00:45 (5g /l).						
11	Onion	Irrigated	Kharif 2019-20	Onion	Bhima Super	-	ICM	<ul style="list-style-type: none"> ✓ Use of Bhima Super variety (10 kg/ha) ✓ Application of gypsum (as source of sulphur) @ 2.5 q/ha ✓ Seed treatment with <i>Trichoderma harzianum</i> @ 4 g/kg ✓ Use of post emergent herbicide (Oxyfluorfen 23.5% EC @ 300 g/acre) ✓ Foliar nutrition with Arka Vegetable Special & water soluble fertilizers (30 and 60 DAT) @ 5 g/l ✓ 2 rows of maize as barrier crop to manage adult thrips ✓ Spray with Fipronil @ 1 ml/l to control sucking pest Spray with Hexaconazole @ 1 ml/l to purple blotch	04	04	--	20	20	
12	Tomato	Irrigated	Kharif 2018-19	Tomato	-	Shivam (Hyveg)	ICM	<ul style="list-style-type: none"> • Soil test based nutrient application; • Use of Marigold as a trap crop (16:1) • Application of Arka Microbial Consortium (20 g for seed treatment, 20g/l – drenching 10 DAT, 5kg- Main field along with vermicompost); • Spray of vegetable special @ 5g/l; • Spray of calcium nitrate @5g/l; 	04	04	-	10	06	04

								<ul style="list-style-type: none"> • Use of yellow and blue sticky traps @ 25/ha; • Use of pheromone traps @ 10/ha; • Need based plant protection measures 						
13	Terrace garden	Irrigated	Kharif 2018-19	Terrace gardening	--	--	Nutritional gardening	<ul style="list-style-type: none"> • Use of local varieties • Use of botanicals • Potting and repotting • Eco friendly pest management 	--	--	--	10	10	--
	Flowers													
	Ornamental													
	Fruit													
	Spices and condiments													
	Commercial													
14	Cotton	Irrigated	Kharif	Cotton		Ajith - 465	ICM	<p>Maintaining proper spacing (4 x 4 feet);</p> <ul style="list-style-type: none"> <input type="checkbox"/> Soil test based fertilizer application; <input type="checkbox"/> Trap crop Bhendi/Marigold (25:1); <input type="checkbox"/> Yellow sticky traps <input type="checkbox"/> Spraying Acetamaprid 20 SP @ 0.2 g/l against sucking pest; <input type="checkbox"/> Spraying of Planofix @ 1ml/4.5 l ; <input type="checkbox"/> Spraying of MgSO4 1% @ 75 & 90 DAS <input type="checkbox"/> Spraying of KNO3 @ 1% at 90 & 110 DAS 	04	04	0	10	04	06
	Medicinal and aromatic													
	Fodder													
15	Hydroponic Fodder (2018-19)	Homestead	Summer	Hydroponic	Sprouts	-	Feed and fodder Management	<ul style="list-style-type: none"> • Production of Fodder in Plastic Trays 	-	-	-	05	04	01

	Plantation													
16	Arecanut	Irrigated	Rabi Summer 2019-20	Arecanut	Channagiri Local	--	ICM	<ul style="list-style-type: none"> ✓ For every two rows one row of 2.5-3 feet drainage ✓ Loosening of soil around plant ✓ Avoiding flood irrigation ✓ Application of RDF based on soil test ✓ <i>Trichoderma</i> enriched organic manure Intercrop with velvet beans	04	04				
17	Betelvine	Irrigated	Rabi 2019-20	Betel vine	Harihara Local	--	ICM	<ul style="list-style-type: none"> ✓ Recommended RDF (0:50:50 g NPK/Vine) ✓ Controlled irrigation ✓ Drenching Copper oxy chloride @ 3 g/l @ lowering of vine ✓ Drenching AMC @ 5 ml/l- Thrice Spraying <i>Verticillium lecanae</i> @ 5 ml/l	02	02	--	10	10	--
18	Cashew	Rainfed	Kharif 2018-19	Cashew	Vengrula - 5	--	ICM	<ul style="list-style-type: none"> • Cashew seedlings var. Vengrula -5 (8x8 m-156 pl/ha) • Redgram as intercrop in pre bearing age • Drip irrigation (Convergence with Horticulture department) • Convergence with NHM for other inputs 	1.6	1.6	--	04	04	-
19	Cahew	Rainfed	Kharif 2018-19	Cashew	Vengrula - 5	--	Cashew in Fallow lands	<ul style="list-style-type: none"> • Cashew seedlings var. Vengrula -5 (8x8 m-156 pl/ha) • Redgram as intercrop in pre bearing age • Drip irrigation (Convergence with 	1.6	1.6	--	04	04	-

								Horticulture department) •Convergence with NHM for other inputs •						
	Fibre													
	Dairy													
20	Dairy (2019)	Home stead	Rabi/ Summer		HF x	CB	Nutrition Management	Feeding dairy Animals based on Indian Standards for better performance	10 Cows	10 Cows	-	-	10	-
21	Crossbred Female dairy calves (2019)	Homestead	Kharif		HF x/ Jr x	CB	Nutrition Management	Feeding Colostrum/ milk and Calf starter to female calves during early stage	10 female calves	10 female calves	02	08	10	-
	Poultry													
	Rabbitry													
	Piggery													
	Sheep and goat													
22	Sheep and goat (2018-19)	Homestead	Rabi (2018-19)	Sheep and Goat	Local (Bellary x)	-	Nutrition Management	•Total Deworming and Balanced Feeding as per NRC standards.	50 Sheep	50 Sheep	-	05	02	03
23	Sheep and goat (2019)	Home Stead	Rabi	-	Loal	-	Nutrition Management	Controlling parasitic infestations & feeding small ruminants based on Indian Standards for better performance	10 units (10 sheep/unit)	10 units	-	10	10	-
	Duckery													
	Common carps													
24	Fisheries (2019-20)	Irrigated	Kharif 2019-2020	Fisheries	<i>Catla , Rohu, Amur Common carp</i>		Production and Management of fishes	•Stocking of bigger size fingerlings	1.4	1.4	02	03	02	03
	Mussels													
	Ornamental fishes													

	Oyster mushroom													
	Button mushroom													
	Vermicompost													
	Sericulture													
	Apiculture													
	Implements													
	Others (specify)													
25	Nutrigarden	Irrigated	Kharif 2019-20	Vegetable crops	Local varieties		Nutritious vegetable cultivation	<ul style="list-style-type: none"> • Cultivation of local varieties • Use of Botonicals • Use of <i>Trichoderma</i> • Staggered sowing • Use of neem powder 	--	--	--	25	25	--

5.A. 1. Soil fertility status of FLDs plots, if analysed

Sl. No.	Category	Farming Situation	Season and Year	Crop	Variety/ breed	Hybrid	Thematic area	Technology Demonstrated	Season and year	Status of soil			Previous crop grown
										N	P	K	
	Oilseeds												
	Pulses												
1	Benglgram	Rainfed	Rabi-2018-19	Benglgram	JAKI-9218	-	ICM	<ul style="list-style-type: none"> • Integrated Crop Management in Bengalgram – • Use of HYV JAKI-9218 @ 62.5 kg/ha; • Seed treatment with <i>Trichoderma harziannum</i> @4gm/kg of seed; • Seed treatment and soil application of Rhizobium, PSB and VAM @ 2.0 kg each /ha; • Pulse magic @ 5kg/ha (50% each at flowering and pod formation); • Use of trap crop @ 5kg/ha; • Use of bird perches; • Use of pheromone traps @10/ha; 1st spray with ovicidal insecticides Profenophos @ 2 ml/l,spraying of Chlorantriniprole @ 75 ml / ha 	Rabi-2018-19	L	M	L	Fallow
2	Benglgram	Rainfed	Rabi-2019-20	Benglgram	JAKI-9218	-	ICM	<ul style="list-style-type: none"> • Integrated Crop Management in Bengalgram – • Use of HYV JAKI-9218 @ 62.5 kg/ha; • Seed treatment with <i>Trichoderma harziannum</i> @4gm/kg of seed; • Seed treatment and soil application of Rhizobium, PSB and VAM @ 2.0 kg each /ha; • Chickpea special @ 3.75 kg/ha (50% each at flowering and pod formation); • Use of trap crop @ 5kg/ha;(Sorghum) • Use of bird perches; • Use of pheromone traps @10/ha; 1st spray with ovicidal insecticides Profenophos @ 2 ml/l,spraying of Chlorantriniprole @ 75 ml / ha 	Rabi-2019-20	L	M	L	Maize
3	Redgram (NFSM)	Rainfed	Kharif 2018-19	Redtram	BRG-5	-	ICM	<ul style="list-style-type: none"> • Use of BRG-5 medium duration wilt resistant variety • <i>Trichoderma harziannum</i> @10 ml/l. • Spray with microla @ 5ml/l (micro nutrient mixture from RCF Ltd), • Sprey with Zincob micro nutrient mixture @ 5ml/l* Installation of Pheromone traps @ 8no. / ha(16 lures), • Spray with Profenophos @ 2ml/l- ovicidal- 1 l/ha, • Spray with Chlorantriniprole insecticide @ 0.3ml/l, 	Kharif 2018-19	L	M	M	Maize

4	Redgram	Rainfed	Kharif 2019-20	Redtram	BRG-5	-	ICM	<ul style="list-style-type: none"> • Use of BRG-5 medium duration wilt resistant variety • Seed treatment with Bio fertilisers (Rhizobium and PSB) <i>Trichoderma harziannum</i> @10 ml/l. • Spray with microla @ 5ml/l (micro nutrient mixture from RCF Ltd), • Spray with Zincob micro nutrient mixture @ 5ml/l* Installation of Pheromone traps @ 8no. / ha(16 lures), • Spray with Profenophos @ 2ml/l- ovicidal- 1 l/ha, • Spray with Chlorantriprole insecticide @ 0.3ml/l, 	Kharif 2019-20	L	M	M	Maize
	Cereals												
5	Rice	Irrigated	Kharif 2018-19	Rice	JGL-Sona	-	ICM	<ul style="list-style-type: none"> • Seeds 12kg/acre • Mechanised sowing (Seed Cum fertiliser drill) • .Pre –Emergent Weedicide (2-3 DAS)- Pendimethilin 30EC 0.5l • .Post –Emergent Weedicide Bispyriback Sodium 100 SC –(Grasses and Sedges) 100ml + Metsulfuron 20 WP 8g (Broad leaf) 15-20 DAS • .Plant protection Measure: Installation of pheromone traps • No./acre (lures) against army worm • . Micro Nutrient application (Zn and Fe)- 	Kharif 2018-19	L	M	M	Rice
6	Rice	Irrigated	Kharif 2019-20	Rice	RNR	-	ICM	<ul style="list-style-type: none"> • Seeds 12kg/acre • Mechanised sowing (Seed Cum fertiliser drill) • .Pre –Emergent Weedicide (2-3 DAS)- Pendimethilin 30EC 0.5l • .Post –Emergent Weedicide Bispyriback Sodium 100 SC –(Grasses and Sedges) 100ml + Metsulfuron 20 WP 8g (Broad leaf) 15-20 DAS • .Plant protection Measure: Installation of pheromone traps and psuesoomonas (2l/acre) • No./acre (lures) against army worm • . Micro Nutrient application (Zn and Fe)- 	Kharif 2019-20	L	M	M	Rice-Transplanted
7	Maize	Rainfed	Kharif-2018-19	Maize	Private	BRG- 5	ICM	<ul style="list-style-type: none"> • Integrated Crop Management in Maize + Redgram; • Management (Spray with Chlorpyrifos @ 2ml/l (Stem Borer) and Mancozeb-2.5g/l (Downey mildew) for Maize; • Medium duration, wilt tolerant and red seeds BRG-5 variety; • Seed treatment with bio fertilizers Azosprillium, PSB, VAM @ 3 kg • Spray with Pulse magic (UAS, Raichur) 10g/l @ 5kg/ha; 	Kharif-2018-19	L	M	M	Maize sole crop

								<ul style="list-style-type: none"> • Installation of Pheromone traps @ 8no. / ha (16 lures); • Spray with Profenofos @ 2ml/l- Ovicidal- 1 l/ha; • Spray with Neem based insecticide @3ml/l – 1 l /ha; • Spray with Indoxicarb @0.5ml/l -200 ml/ha. 					
8	Maize +Redgram	Rainfed	Kharif-2019-20	Maize	BRG- 5 (redgram)	Private	ICM	<ul style="list-style-type: none"> • Integrated Crop Management in Maize + Redgram; • Management (Spray with Chlorpyrifos @ 2ml/l (Stem Borer) and Mancozeb-2.5g/l (Downey mildew) for Maize; • Medium duration, wilt tolerant and red seeds BRG-5 variety; • Seed treatment with bio fertilizers Azosprillium, PSB, VAM @ 3 kg • Spray with Pulse magic (UAS, Raichur) 10g/l @ 5kg/ha; • Installation of Pheromone traps @ 8no. / ha (16 lures); • Spray with Profenofos @ 2ml/l- Ovicidal- 1 l/ha; • Spray with Neem based insecticide @3ml/l – 1 l /ha; • Spray with Indoxicarb @0.5ml/l -200 ml/ha. 	Kharif-2019-20	L	M	M	Maize
9	Sorghum	Rainfed	Rabi-2018-19	Sorghum	SPV-2217	-	ICM	<ul style="list-style-type: none"> • Variety SPV-2217; • Seed treatment with calcium chloride to induce drought tolerance (overnight soaking); • Seed treatment with Azotobactor, PSB @ 500g/ha; • Spraying of 19:19:19 @ 5g/l and micronutrient solution @ 3-4 ml/l at 30 DAS; • Spraying of Chlorpyrifos 20EC- @ 2ml/l to manage stem borer; • Spraying of Hexaconazole @ 1ml/l to manage rust; • Weed and water management 	Rabi-2018-19	L	M	M	Onion
	Millets												
10	Fingermillet	Rainfed	Kharif 2018-19	Fingermillet	ML-365	-	ICM	<ul style="list-style-type: none"> • Variety ML-365 (105-110 days).; • Soil test based nutrient application; • Seed treatment with bio fertilizers Azosprillium, PSB, VAM @ 3 kg/ha; • Spraying of Micronutrient -(3-4 ml/l) ZnSO₄; • Use of water soluble fertilizers (tillering stage) 13:00:45 (5g /l). 	Kharif 2018-19	L	M	L	Maize

	Vegetables												
11	Onion	Irrigated	Kharif 2019-20	Onion	Bhima Super	--	ICM	<ul style="list-style-type: none"> ✓ Use of Bhima Super variety (10 kg/ha) ✓ Application of gypsum (as source of sulphur) @ 2.5 q/ha ✓ Seed treatment with <i>Trichoderma harzianum</i> @ 4 g/kg ✓ Use of post emergent herbicide (Oxyfluorfen 23.5% EC @ 300 g/acre) ✓ Foliar nutrition with Arka Vegetable Special & water soluble fertilizers (30 and 60 DAT) @ 5 g/l ✓ 2 rows of maize as barrier crop to manage adult thrips ✓ Spray with Fipronil @ 1 ml/l to control sucking pest <p>Spray with Hexaconazole @ 1 ml/l to purple blotch</p>	Kharif 2019	M	M	M	Maize
12	Tomato (2018-19)	Irrigated	Kharif 2018-19	Tomato	-	Shivam (Hyveg)	ICM	<ul style="list-style-type: none"> • Soil test based nutrient application; • Use of Marigold as a trap crop (16:1) • Application of Arka Microbial Consortium (20 g for seed treatment, 20g/l – drenching 10 DAT, 5kg- Main field along with vermicompost); • Spray of vegetable special @ 5g/l; • Spray of calcium nitrate @5g/l; • Use of yellow and blue sticky traps @ 25/ha; • Use of pheromone traps @ 10/ha; • Need based plant protection measures 	Kharif 2018-19	L	L	H	Maize
13	Chilli	Irrigated	Kharif	Chilli		Seminis-Sitara	ICM	<p>Weather based agronomic practices; <input type="checkbox"/> Soil test based nutrient application; <input type="checkbox"/> Application of Arka Microbial Consortium (10 ml for seed treatment, 10ml/l – drenching 10 DAT, 3 ml- Main field along with vermicompost); <input type="checkbox"/> Spray of vegetable special @ 5g/l; <input type="checkbox"/> Spray of calcium + boron (Calbor) @ 5ml/l; <input type="checkbox"/> Use of yellow and blue sticky traps @ 25/ha; <input type="checkbox"/> Need based plant protection measures</p>	Kharif 2019	M	H	M	Figmillet
14	Terrace gardening	Irrigated	Kharif 2018-19	Vegetable crops	Local varieties	--	Nutritious vegetable cultivation	<ul style="list-style-type: none"> • Use of local varieties • Use of botanicals • Potting and repotting • Eco friendly pest management 	Kharif 2018-19	-	-	-	-
	Flowers												
	Ornamental												
	Fruit												
	Spices and condiments												

	Commercial												
15	Cotton	Irrigated	Kharif	Cotton		Ajith - 465	ICM	Maintaining proper spacing (4 x 4 feet); <input type="checkbox"/> Soil test based fertilizer application; <input type="checkbox"/> Trap crop Bhendi/Marigold (25:1); <input type="checkbox"/> Yellow sticky traps <input type="checkbox"/> Spraying Acetamaprid 20 SP @ 0.2 g/l against sucking pest; <input type="checkbox"/> Spraying of Planofix @ 1ml/4.5 l ; <input type="checkbox"/> Spraying of MgSO4 1% @ 75 & 90 DAS <input type="checkbox"/> Spraying of KNO3 @ 1% at 90 & 110 DAS	Kharif 2019	M	M	L	Cowpea
	Medicinal and aromatic												
	Fodder												
16	Hydroponic (2018-19)	• Production of Fodder in Plastic Trays	-	05	05	3355 L/Lactation	2593 L/Lactation	2958.8	2440	21.26	36600	73970	37370
	Plantation												
17	Arecanut	Irrigated	Rabi Summer 2019-20	Arecanut	Channagiri Local	--	ICM	<ul style="list-style-type: none"> ✓ For every two rows one row of 2.5-3 feet drainage ✓ Loosening of soil around plant ✓ Avoiding flood irrigation ✓ Application of RDF based on soil test ✓ <i>Trichoderma</i> enriched organic manure Intercrop with velvet beans	Rabi Summer 2010	L	M	H	Arecanut
18	Betel vine	Irrigated	Rabi 2019-20	Betel vine	Harihara local	--	ICM	<ul style="list-style-type: none"> ✓ Recommended RDF (0:50:50 g NPK/Vine) ✓ Controlled irrigation ✓ Drenching Copper oxy chloride @ 3 g/l @ lowering of vine ✓ Drenching AMC @ 5 ml/l- Thrice and Spraying <i>Verticillium lecaniae</i> @ 5 ml/l 	Rabi 2019-20	L	M	M	Betelvine

19	Cashew	Rainfed	Kharif 2018-19	Cahsew	Vengrula-5	--	ICM	<ul style="list-style-type: none"> •Cashew seedlings var. Vengrula -5 (8x8 m- 156 pl/ha) •Redgram as intercrop in pre bearing age •Drip irrigation (Convergence with Horticulture department) •Convergence with NHM for other inputs 	Kharif 2018-19	M	M	M	Maize
20	Cashew	Rainfed	Kharif 2018-19	Cahsew	Vengrula-5	--	Use of fallow lands	<ul style="list-style-type: none"> •Cashew seedlings var. Vengrula -5 (8x8 m- 156 pl/ha) •Redgram as intercrop in pre bearing age •Drip irrigation (Convergence with Horticulture department) •Convergence with NHM for other inputs 	Kharif 2018-19	M	M	M	Maize
	Fibre												
21	Fisheries	Irrigated	Kharif 2019-20	Fisheries	<i>Catla Rohu, Amur Common carp</i>		Production and management of Fishes	<ul style="list-style-type: none"> • Stocking of bigger size fishes 	Kharif 2019-2020	L	M	M	
	Others							•					
22	Nutrigarden	Irrigated	Kharif 2019-20	Vegetable crops	Local varieties	--	Nutritious vegetable cultivation	<ul style="list-style-type: none"> • Cultivation of local varities • Use of Botonicals • Use of Trichoderma • Staggered sowing • Use of neem powder 	Kharif 2019-20	M	M	L	vegetables

5.B. Results of FLDs

5.B.1. Crops

Crop	Name of the technology demonstrated	Variety	Hybrid	Farming situation	No. of Demo.	Area (ha)	Yield (q/ha)			Check	% Increase	Economics of demonstration (Rs./ha)			Economics of Check (Rs./ha)		
							Demo					Gross Return	Net Return	BCR	Gross Return	Net Return	BCR
							H	L	A								
Oilseeds																	
Pulses																	
Redgram (NFMS) 2018-19	<ul style="list-style-type: none"> • Use of BRG-5 medium duration wilt resistant variety • Trichoderma harziannum @10 ml/l. • Spray with microla @ 5ml/l (micro nutrient mixture from RCF Ltd), • Spray with Zincob micro nutrient mixture @ 5ml/l • Installation of Pheromone traps @ 8no. / ha(16 lures), • Spray with Profenophos @ 2ml/l-ovicidal- 1 l/ha, • Spray with Chlorantriniprole insecticide @ 0.3ml/l, 	BRG-5	-	Rainfed	50	20	13.9	9.7	11.86	9.28	20.78	21322	47456	2.24	37128	16790	1.83

Redgram 2019-20	<ul style="list-style-type: none"> • Use of BRG-5 medium duration wilt resistant variety • Trichoderma harziannum @10 ml/l. • Spray with micro @ 5ml/l (micro nutrient mixture from RCF Ltd), • Spray with Zincob micro nutrient mixture @ 5ml/l • Installation of Pheromone traps @ 8no. / ha(16 lures), • Spray with Profenophos @ 2ml/l-ovicidal- 1 l/ha, • Spray with Chlorantriniprole insecticide @ 0.3ml/l, 	BRG-5	-	Rainfed	107	41.8	Flowering and seed filling stage.										
Benglgram 2018-19	<ul style="list-style-type: none"> • Integrated Crop Management in Bengalgram • Use of HYV JAKI-9218 @ 62.5 kg/ha; • Seed treatment with Trichoderma harziannum @4gm/kg of seed; • Seed treatment and soil application of Rhizobium, PSB and VAM @ 2.0 kg each /ha; • Pulse magic @ 5kg/ha (50% each at flowering and pod formation); • Use of trap crop @ 5kg/ha; • Use of bird perches; • Use of pheromone traps @10/ha; 1st spray with ovicidal insecticides Profenophos @ 2 ml/l,spraying of Chlorantriniprole @ 75 ml / ha 	JAKI-9218	-	Rainfed	40	16	12.25	07	9.71	7.93	22.44	23926	53405	2.23	43628.8	19660	1.82

Bengal gram 2019-20	<ul style="list-style-type: none"> • Integrated Crop Management in Bengalgram • Use of HYV JAKI-9218 @ 62.5 kg/ha; • Seed treatment with Trichoderma harziannum @4gm/kg of seed; • Seed treatment and soil application of Rhizobium, PSB and VAM @ 2.0 kg each /ha; • Pulse magic @ 5kg/ha (50% each at flowering and pod formation); • Use of trap crop @ 5kg/ha; • Use of bird perches; • Use of pheromone traps @10/ha; 1st spray with ovicidal insecticides Profenophos @ 2 ml/l, spraying of Chlorantriniprole @ 75 ml / ha 	JAKI 9218	--	40	20	Sowing completed and crop is at vegetative stage													
Cereals																			

Rice 208-19	<ul style="list-style-type: none"> • Seeds 12kg/acre • . Mechansised sowing (Seed Cum 63ertiliser drill) • .Pre –Emergent Weedicide (2-3 DAS)- Pendimethilin 30EC 0.5l • .Post –Emergent Weedicide Bispyriback Sodium 100 SC –(Grasses and Sedges) 100ml + Metsulfuron 20 WP 8g (Broad leaf) 15-20 DAS • .Plant protection Measure: Installation of pheromone traps 4 no./acre (lures) against army worm • Micro Nutrient application (Zn and Fe)- 	JGL-Sona	-	Irrigated	05	02	64.5	58.75	61.45	61.9	-0.72	110610	65010	2.43	67900	43520	1.64
Rice 2019-20	<ul style="list-style-type: none"> • Seeds 12kg/acre • . Mechansised sowing (Seed Cum 63ertiliser drill) • .Pre –Emergent Weedicide (2-3 DAS)- Pendimethilin 30EC 0.5l • .Post –Emergent Weedicide Bispyriback Sodium 100 SC –(Grasses and Sedges) 100ml + Metsulfuron 20 WP 8g (Broad leaf) 15-20 DAS • .Plant protection Measure: Installation of pheromone traps 4 no./acre (lures) against army worm • Micro Nutrient application (Zn and Fe)- 	RNR	-	Irrigated	05	2.0	56.0	49.75	52.4	47.51	10.29	96940	47405	1.96	87900.9	26880.9	1.44

Maize 2018-19	<ul style="list-style-type: none"> • Integrated Crop Management in Maize + Redgram; • Management (Spray with Chlorpyrifos @ 2ml/l (Stem Borer) and Mancozeb-2.5g/l (Downey mildew) for Maize; • Medium duration, wilt tolerant and red seeds BRG-5 variety; • Seed treatment with bio fertilizers Azospirillum, PSB, VAM @ 3 kg • Spray with Pulse magic (UAS, Raichur) 10g/l @ 5kg/ha; • Installation of Pheromone traps @ 8no. / ha (16 lures); • Spray with Profenofos @ 2ml/l-Ovicidal- 1 l/ha; • Spray with Neem based insecticide @3ml/l – 1 l/ha; • Spray with Indoxicarb @0.5ml/l - 200 ml/ha , 	BGR-5	Private	Rainfed	30	12	53.54	35.13	45.22	36.55	23.72	81402.6	39455.1	1.94	65790	23777.3	1.56
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Maize + Redgram 2019-20	<ul style="list-style-type: none"> • Integrated Crop Management in Maize + Redgram; • Management (Spray with Chlorpyrifos @ 2ml/l (Stem Borer) and Mancozeb-2.5g/l (Downey mildew) for Maize; • Medium duration, wilt tolerant and red seeds BRG-5 variety; • Seed treatment with bio fertilizers Azosprillium, PSB, VAM @ 3 kg • Spray with Pulse magic (UAS, Raichur) 10g/l @ 5kg/ha; • Installation of Pheromone traps @ 8no. / ha (16 lures); • Spray with Profenofos @ 2ml/l-Ovicidal- 1 l/ha; • Spray with Neem based insecticide @3ml/l – 1 l/ha; • Spray with Indaxicarb @0.5ml/l - 200 ml/ha. 	Private(Maize)	BRG-5	Rainfed	16	6.4	Due to drought conduiton in the village the crops failed and demonstration vaiited . Late sowing of Maize + Redgram in Harihara taluk lead to the incidence o f Fall Army worm and 90 percent of the crop in the village gone and went for resowing of Maize again. , but failed .
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Sorghum 2018-19	<ul style="list-style-type: none"> • Variety SPV-2217; • Seed treatment with calcium chloride to induce drought tolerance (overnight soaking); • Seed treatment with Azotobactor, PSB @ 500g/ha; • Spraying of 19:19:19 @ 5g/l and micronutrient solution @ 3-4 ml/l at 30 DAS; • Spraying of Chlorpyrifos 20EC- @ 2ml/l to manage stem borer; • Spraying of Hexaconazole @ 1ml/l to manage rust; • Weed and water management 	SPV-2217	-	Rainfed	10	04	17.31	13.96	16.11	13.93	15.65	29005.2	13184.2	1.83	25074	10689	1.74
Millets																	
Fingermillet 2018-19	<ul style="list-style-type: none"> • Variety ML-365 (105-110 days); • Soil test based nutrient application; • Seed treatment with bio fertilizers Azosprillium, PSB, VAM @ 3 kg/ha; • Spraying of Micronutrient -(3-4 ml/l) ZnSO₄; • Use of water soluble fertilizers (tillering stage) 13:00:45 (5g /l). 	ML-365	-	Rainfed	25	10	14.5	7.4	12.8	11.35	12.77	44961.2	26167.3	1.71	40441	14206.6	1.54
Vegetables																	
Onion	Integrated crop Management	Bhima Super	--	Irrigated	20	04	190	171	176.6	137.05	28.85	388520	283842	3.71	175560	38656	1.28
Terrace garden (2018-19)	Nutritious vegetable production	Local varieties	--	Irrigated	10	-						12000	6000	2.00	3600	0	1.0

Tomato 2018-19	<ul style="list-style-type: none"> • Soil test based nutrient application; • Use of Marigold as a trap crop (16:1) • Application of Arka Microbial Consortium (20 g for seed treatment, 20g/l – drenching 10 DAT, 5kg- Main field along with vermicompost); • Spray of vegetable special @ 5g/l; • Spray of calcium nitrate @5g/l; • Use of yellow and blue sticky traps @ 25/ha; • Use of pheromone traps @ 10/ha; • Need based plant protection measures 	-	Shivam (Hyveg)	Irrigated	10	04	68.05	55.49	61.14	55.21	10.74	91708.5	27260.9	1.43	82824	14445.6	1.21	
Chilli 2019-20	<p>Weather based agronomic practices; <input type="checkbox"/> Soil test based nutrient application; <input type="checkbox"/> Application of Arka Microbial Consortium (10 ml for seed treatment, 10ml/l – drenching 10 DAT, 3 ml- Main field along with vermicompost); <input type="checkbox"/> Spray of vegetable special @ 5g/l; <input type="checkbox"/> Spray of calcium + boron (Calbor) @ 5ml/l; <input type="checkbox"/> Use of yellow and blue sticky traps @ 25/ha; <input type="checkbox"/> Need based plant protection measures</p>	--	Sitara	Irrigated	10	04	On going											
Flowers																		
Ornamental																		
Fruit																		
Spices and condiments																		

Commercial																		
Cotton 2019-20	Maintaining proper spacing (4 x 4 feet); <input type="checkbox"/> Soil test based fertilizer application; <input type="checkbox"/> Trap crop Bhendi/Marigold (25:1); <input type="checkbox"/> Yellow sticky traps <input type="checkbox"/> Spraying Acetamaprid 20 SP @ 0.2 g/l against sucking pest; <input type="checkbox"/> Spraying of Planofix @ 1ml/4.5 l; <input type="checkbox"/> Spraying of MgSO4 1% @ 75 & 90 DAS <input type="checkbox"/> Spraying of KNO3 @ 1% at 90 & 110 DAS	--	Ajit	Irrigated	10	4	On going											
Fibre crops like cotton																		
Medicinal and aromatic																		
Fodder																		
Plantation																		
Arecanut 2019-20	Integrated crop Management	Channagiri Local	--	Irrigated	10	04	On going											
Betel vine 2019-20	Integrated crop Management	Harihara Local	--	irrigated	10	02	On going											
Cashew(2018-19)	Integrated crop Management	Vengrula 5	--	Rainfed	04	1.6	On going											
Cashew(2018-19)	Use of fallow lands	Vengrula 5	--	Rainfed	04	1.6	On going											
Fibre																		
Others (pl.specify)																		
Nutrigarden 2019-20	Nutritious vegetable cultivation	Local varieties	--	Irrigated	25	--	On going											

* Economics to be worked out based total cost of production per unit area and not on critical inputs alone.

** BCR= GROSS RETURN/GROSS COST

H – Highest Yield, L – Lowest Yield A – Average Yield

Data on additional parameters other than yield (viz., reduction of percentage in weed/pest/diseases etc.)

1. Onion

Data on other parameters in relation to technology demonstrated		
Parameter with unit	Demo	Check
Germination (%)	88.95	81.7
Average Weight of five Bulbs (g)	104.5	81.8
Marketable yield (q/ha)	106.0	80.6

2. Terrace garden

Data on other parameters in relation to technology demonstrated		
Parameter with unit	Demo	Check
Number of vegetables consumed/week	15	07
Average consumption of leafy vegetables/week	06	03
Shelf life(Days)	07(Always Fresh)	04
Cost of vegetables purchased /week	100-00	350-00
Physical activity(hr)	10	04

3. Sorghum

Crop	Data on other parameters in relation to technology demonstrated		
	Parameter with unit	Demo	Check
Sorghum	Plant Height (cm)	194.8	207.8
	Head size (cm)	22.36	19.65
	Test weight (g)	40.66	38.47

4. Redgram (NFSM)

Crop	Parameter with unit	Data on other parameters in relation to technology demonstrated	
		Demo	Check
Redgram	Plant Height (cm)	176.06	169.34
	No. of pods per plant (No)	93.1	76.18
	Incidence of pod borer (%)	6.72	12.58
	Incidence of wilt (%)	4.24	7.38

Crop	Parameter with unit	Data on other parameters in relation to technology demonstrated	
		Demo	Check
Rice	Plant Height (cm)	106.06	105.04
	Tillers per Hill (No.)	58.8	58.8
	Test weight (g)	36.84	36.96
Maize	Plant Height (cm)	185.8	183.4
	Pods per plant (Redgram) (No.)	70.58	66.98
	Incidence of wilt (%)	3.73	9.65
Finger millet	Plant Height (cm)	67.08	65.18
	Tiller per hill (No.)	5.82	3.82
	Fodder yield (t/ha)	5.82	3.82
	Weight of Bulbs (g)	108.4	85.6
	Incidence of wilt (%)	4.24	7.38
Benglgram	Plant Height (cm)	29.97	26.18
	No. of pods per plant (No)	59.69	46.83
	Incidence of wilt (%)	3.95	10.35

Crop	Parameter with unit	Data on other parameters in relation to technology demonstrated	
		Demo	Check
Rice 2019-20	Plant Height (cm)	106.06	102.4
	Tillers per Hill (No.)	58.80	47.82
	Test weight (g)	37.04	36.93

Data on additional parameters other than yield (viz., reduction of percentage in weed/pest/diseases etc.)

Data on other parameters in relation to technology demonstrated		
Parameter with unit	Demo	Check

5.B.2. Livestock and related enterprises

Type of livestock	Name of the technology demonstrated	Breed	No. of Demo	No. of Units	Name of the parameter with unit	Yield (kg/animal)			% Increase	*Economics of demonstration (Rs./unit)			*Economics of check (Rs./unit)			
						Demo		Check if any		Gross Return	Net Return	** BCR	Gross Return	Net Return	** BCR	
						H	L									A
Dairy																
Dairy (2019)	Feeding dairy Animals based on Indian Standards for better performance	HF x / Jr x	10	10	1)Milk Yield/Lactation (litres) 2)Cost of Feeding (Rs/ l) 3)No.of AI/AIs for conceiving											
Crossbred Female Dairy Calves (2019)	Feeding Colostrum/ milk and Calf starter to female calves during early stage	HF x/Jrx	10	10	1)Body Weight gain (Kg) 2)Age at Puberty (months) 3)Cost of Feeding (Rs/day)											
Poultry																
Rabbitry																
Pigerry																
Sheep and goat																
Sheep and goat (2018-19)	•Total Deworming and Balanced Feeding as per NRC standards.	Local (Bellary x)	05	50 Sheep	75	66	69.2	53	30.56	10250	20760	10510	2.03	15900	6900	1.76

Sheep and goat (2019-20)	Controlling parasitic infestations & feeding small ruminants based on Indian Standards for better performance	Local (Bellar x)	10	100 sheep	1)Body Weight gain (Kg) 2)Mortality rate (%) 3)Cost of Meat Production (Rs/Kg)	On going														
Duckery																				
Others (pl.specify)																				

* Economics to be worked out based total cost of production per unit area and not on critical inputs alone.

** BCR= GROSS RETURN/GROSS COST

Data on additional parameters other than yield (viz., reduction of percentage diseases, increase in conceiving rate, inter-calving period etc.)

Data on other parameters in relation to technology demonstrated		
Parameter with unit	Demo	Check if any

5.B.3. Fisheries

Type of Breed	Name of the technology demonstrated	Breed	No. of Demo	Units/ Area (m ²)	Name of the parameter with unit	Yield (q/ha)			% Increase	*Economics of demonstration (Rs./unit)			*Economics of check (Rs./unit)			
						Demo	Check if any			Gross Return	Net Return	** BCR	Gross Return	Net Return	** BCR	
						H	L	A								
Common carps																
Fisheries (2019-20)	•Stocking of bigger size fingerlings	<i>Catla , Rohu, Amur Common carp</i>		Irrigated	02	On going										
Mussels																
Ornamental fishes																
Others (pl.specify)																

* Economics to be worked out based total cost of production per unit area and not on critical inputs alone.

** BCR= GROSS RETURN/GROSS COST

H-High L-Low, A-Average

Data on additional parameters other than yield (viz., reduction of percentage diseases, effective use of land etc.)

Data on other parameters in relation to technology demonstrated		
Parameter with unit	Demo	Check if any

5.B.4. Other enterprises

Enterprise	Name of the technology demonstrated	Variety/ species	No. of Demo	Units/ Area {m ² }	Name of the parameter with unit	Yield			% Increase	*Economics of demonstration (Rs./unit) or (Rs./m ²)			*Economics of check (Rs./unit) or (Rs./m ²)				
						Demo				Check if any	Gross Return	Net Return	** BCR	Gross Return	Net Return	** BCR	
						H	L	A									
Oyster mushroom																	
Button mushroom																	
Vermicompost																	
Sericulture																	
Apiculture																	
Others (pl.specify)																	

* Economics to be worked out based total cost of production per unit area and not on critical inputs alone.

** BCR= GROSS RETURN/GROSS COST

H-High L-Low, A-Average

Data on additional parameters other than yield (viz., additional income realized, employment generation, quantum of farm resources recycled etc.)

Data on other parameters in relation to technology demonstrated		
Parameter with unit	Demo	Local

5.B.5. Farm implements and machinery

Name of the implement	Cost of the implement in Rs.	Name of the technology demonstrated	No. of Demo	Area covered under demo in ha	Name of the operation with unit	Labour requirement in Mandays		% save	Savings in labour (Rs./ha)	*Economics of demonstration (Rs./ha)			*Economics of check (Rs./ha)		
						Demo	Check			Gross Return	Net Return	** BCR	Gross Return	Net Return	** BCR

* Economics to be worked out based total cost of production per unit area and not on critical inputs alone.

** BCR= GROSS RETURN/GROSS COST

Data on additional parameters other than labour saved (viz., reduction in drudgery, time etc.)

Data on other parameters in relation to technology demonstrated		
Parameter with unit	Demo	Local

5.B.6. Extension and Training activities under FLD

Sl.No.	Activity	No. of activities organised	Number of participants	Remarks
1	Field days			
2	Farmers Training			
3	Media coverage			
4	Training for extension functionaries			
5	Others (Please specify)			

PART VI – DEMONSTRATIONS ON CROP HYBRIDS (2019)

Demonstration details on crop hybrids

Type of Breed	Name of the technology demonstrated	Name of the hybrid	No. of Demo	Area (ha)	Yield (q/ha)			% Increase	*Economics of demonstration (Rs./ha)			*Economics of check (Rs./ha)		
					Demo				Gross Return	Net Return	** BCR	Gross Return	Net Return	** BCR
					H	L	A							
Cereals														
Bajra														
Maize														
Paddy														
Sorghum														
Wheat														
Others (pl.specify)														
Total														
Oilseeds														
Castor														
Mustard														
Safflower														
Sesame														
Sunflower														
Groundnut														
Soybean														
Others (pl.specify)														
Total														
Pulses														
Greengram														
Blackgram														
Bengalgram														
Redgram														
Others (pl.specify)														
Total														
Vegetable crops														
Bottle gourd														
Capsicum														
Others (pl.specify)														
Total														
Cucumber														
Tomato														
Brinjal														
Okra														
Onion														
Potato														
Field bean														
Others (pl.specify)														
Total														
Commercial crops														
Sugarcane														
Coconut														
Others (pl.specify)														

Total															
Fodder crops															
Maize (Fodder)															
Sorghum (Fodder)															
Others (pl.specify)															
Total															

H-High L-Low, A-Average

*Please ensure that the name of the hybrid is correct pertaining to the crop specified

PART VII. TRAINING (2019)

7.A.. Training of Farmers and Farm Women including sponsored training programmes (On campus)

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Crop Production										
Weed Management										
Resource Conservation Technologies										
Cropping Systems										
Crop Diversification										
Integrated Farming										
Micro Irrigation/Irrigation										
Seed production										
Nursery management										
Integrated Crop Management	1	30	--	30	7	--	7	37	--	37
Soil and Water Conservation										
Integrated Nutrient Management										
Production of organic inputs										
Others – Seed treatment	2	48	--	48	--	--	--	48	--	48
Horticulture										
a) Vegetable Crops										
Production of low value and high volume crop	1	13	9	22	--	--	--	13	9	22
Off-season vegetables										
Nursery raising										
Exotic vegetables										
Export potential vegetables										
Grading and standardization										
Protective cultivation										
Others (pl.specify)										

b) Fruits										
Training and Pruning										
Layout and Management of Orchards										
Cultivation of Fruit										
Management of young plants/orchards										
Rejuvenation of old orchards										
Export potential fruits										
Micro irrigation systems of orchards										
Plant propagation techniques										
Others (pl.specify)										
c) Ornamental Plants										
Nursery Management										
Management of potted plants										
Export potential of ornamental plants										
Propagation techniques of Ornamental Plants										
Others (pl.specify)										
d) Plantation crops										
Production and Management technology	1	22	0	22	3	0	3	25	0	25
Processing and value addition										
Others - Coconut tree climbing and plant protection	1	19	0	19	2	0	2	21	--	21
e) Tuber crops										
Production and Management technology										
Processing and value addition										
Others (pl.specify)										
f) Spices										
Production and Management technology										
Processing and value addition										
Others (pl.specify)										
g) Medicinal and Aromatic Plants										

Nursery management										
Production and management technology										
Post harvest technology and value addition										
Others (pl.specify)										
Soil Health and Fertility Management										
Soil fertility management	1	18	8	26	1	--	1	19	8	27
Integrated water management										
Integrated nutrient management										
Production and use of organic inputs										
Management of Problematic soils										
Micro nutrient deficiency in crops										
Nutrient use efficiency										
Balanced use of fertilizers										
Soil and water testing										
Others (pl.specify)										
Livestock Production and Management										
Dairy Management										
Poultry Management										
Piggery Management										
Rabbit Management										
Animal Nutrition Management	5	40	1	41	3	20	23	43	21	64
Animal Disease Management										
Feed and Fodder technology	1	5	1	6	--	--	--	5	1	6
Production of quality animal products										
Others – Sheep and goat rearing	1	5	0	5	--	--	--	5	0	5
Home Science/Women empowerment										
Household food security by kitchen gardening and nutrition gardening										
Design and development of low/minimum cost diet										
Designing and development for high nutrient efficiency diet										

Minimization of nutrient loss in processing										
Processing and cooking										
Gender mainstreaming through SHGs										
Storage loss minimization techniques										
Value addition										
Women empowerment										
Location specific drudgery production										
Rural Crafts										
Women and child care										
Others (pl.specify)										
Agril. Engineering										
Farm machinery and its maintenance										
Installation and maintenance of micro irrigation systems										
Use of Plastics in farming practices										
Production of small tools and implements										
Repair and maintenance of farm machinery and implements										
Small scale processing and value addition										
Post Harvest Technology										
Others (pl.specify)										
Plant Protection										
Integrated Pest Management										
Integrated Disease Management										
Bio-control of pests and diseases										
Production of bio control agents and bio pesticides										
Others (pl.specify)										
Fisheries										
Integrated fish farming										
Carp breeding and hatchery management										
Carp fry and fingerling rearing										

Composite fish culture										
Hatchery management and culture of freshwater prawn										
Breeding and culture of ornamental fishes										
Portable plastic carp hatchery										
Pen culture of fish and prawn										
Shrimp farming										
Edible oyster farming										
Pearl culture										
Fish processing and value addition										
Others – Fish disease management	1	46	2	48	15	--	15	61	2	63
Production of Inputs at site										
Seed Production										
Planting material production										
Bio-agents production										
Bio-pesticides production										
Bio-fertilizer production										
Vermi-compost production										
Organic manures production										
Production of fry and fingerlings										
Production of Bee-colonies and wax sheets										
Small tools and implements										
Production of livestock feed and fodder										
Production of Fish feed										
Mushroom production										
Apiculture										
Others (pl.specify)										
CapacityBuilding and Group Dynamics										
Leadership development										
Group dynamics										

Formation and Management of SHGs										
Mobilization of social capital										
Entrepreneurial development of farmers/youths										
Others –Orientation to PUC students	2	117	137	254	16	21	37	133	158	291
Agro-forestry										
Production technologies										
Nursery management										
Integrated Farming Systems										
Others (Pl. specify)										
TOTAL	17	363	158	521	47	41	88	410	199	609

7.B Training of Farmers and Farm Women including sponsored training programmes (Off campus)

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Crop Production										
Weed Management	3	59	9	68	--	--	--	59	9	68
Resource Conservation Technologies										
Cropping Systems										
Crop Diversification										
Integrated Farming										
Micro Irrigation/Irrigation										
Seed production										
Nursery management										
Integrated Crop Management	5	93	56	149	11	2	13	104	58	162
Soil and Water Conservation										
Integrated Nutrient Management										
Production of organic inputs										
Others –Seed treatment	2	70	24	94	4	6	10	74	30	104
Horticulture										
a) Vegetable Crops										
Production of low value and high volume crop	2	20	45	65	--	--	--	20	45	65
Off-season vegetables										
Nursery raising										
Exotic vegetables										
Export potential vegetables										
Grading and standardization										
Protective cultivation										
Others –Nutri garden	1	3	18	21	--	--	--	3	18	21
b) Fruits										
Training and Pruning										

Layout and Management of Orchards										
Cultivation of Fruit										
Management of young plants/orchards										
Rejuvenation of old orchards										
Export potential fruits										
Micro irrigation systems of orchards										
Plant propagation techniques										
Others (pl.specify)										
c) Ornamental Plants										
Nursery Management										
Management of potted plants										
Export potential of ornamental plants										
Propagation techniques of Ornamental Plants										
Others (pl.specify)										
d) Plantation crops										
Production and Management technology	3	127	1	128	1	--	1	128	1	129
Processing and value addition										
Others (pl.specify)										
e) Tuber crops										
Production and Management technology										
Processing and value addition										
Others (pl.specify)										
f) Spices										
Production and Management technology										
Processing and value addition										
Others (pl.specify)										
g) Medicinal and Aromatic Plants										
Nursery management										
Production and management technology										

Post harvest technology and value addition										
Others (pl.specify)										
Soil Health and Fertility Management										
Soil fertility management										
Integrated water management	1	4	17	21	6	3	9	10	20	30
Integrated nutrient management	2	13	--	13	--	--	--	13	--	13
Production and use of organic inputs	1	23	1	24	6	--	6	29	1	30
Management of Problematic soils										
Micro nutrient deficiency in crops	1	17	--	17	3	--	3	20	--	20
Nutrient use efficiency										
Balanced use of fertilizers										
Soil and water testing										
Others (pl.specify)										
Livestock Production and Management										
Dairy Management	2	60	4	64	5	1	6	65	5	70
Poultry Management										
Piggery Management										
Rabbit Management										
Animal Nutrition Management										
Animal Disease Management	2	21	--	21	--	--	--	21	--	21
Feed and Fodder technology	1	25	--	25	1	--	1	26	--	26
Production of quality animal products										
Others (pl.specify)										
Home Science/Women empowerment										
Household food security by kitchen gardening and nutrition gardening										
Design and development of low/minimum cost diet										
Designing and development for high nutrient efficiency diet										
Minimization of nutrient loss in processing										
Processing and cooking										

Gender mainstreaming through SHGs										
Storage loss minimization techniques										
Value addition										
Women empowerment										
Location specific drudgery production										
Rural Crafts										
Women and child care										
Others (pl.specify)										
Agril. Engineering										
Farm machinery and its maintenance										
Installation and maintenance of micro irrigation systems										
Use of Plastics in farming practices										
Production of small tools and implements										
Repair and maintenance of farm machinery and implements										
Small scale processing and value addition										
Post Harvest Technology										
Others (pl.specify)										
Plant Protection										
Integrated Pest Management	7	122	55	177	22	7	29	144	62	206
Integrated Disease Management	1	27	--	27	1	--	1	28	--	28
Bio-control of pests and diseases										
Production of bio control agents and bio pesticides										
Others (pl.specify)										
Fisheries										
Integrated fish farming										
Carp breeding and hatchery management										
Carp fry and fingerling rearing										
Composite fish culture										
Hatchery management and culture of freshwater prawn										

Breeding and culture of ornamental fishes										
Portable plastic carp hatchery										
Pen culture of fish and prawn										
Shrimp farming										
Edible oyster farming										
Pearl culture										
Fish processing and value addition										
Others (pl.specify)										
Production of Inputs at site										
Seed Production										
Planting material production										
Bio-agents production										
Bio-pesticides production										
Bio-fertilizer production										
Vermi-compost production										
Organic manures production										
Production of fry and fingerlings										
Production of Bee-colonies and wax sheets										
Small tools and implements										
Production of livestock feed and fodder										
Production of Fish feed										
Mushroom production										
Apiculture										
Others (pl.specify)										
Capacity Building and Group Dynamics										
Leadership development										
Group dynamics										
Formation and Management of SHGs										
Mobilization of social capital										

Entrepreneurial development of farmers/youths										
Others (pl.specify)										
Agro-forestry										
Production technologies										
Nursery management										
Integrated Farming Systems										
Others (Pl. specify)										
TOTAL	34	714	230	944	60	19	79	774	249	1023

7.C.Training for Rural Youths including sponsored training programmes (on campus)

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Nursery Management of Horticulture crops	1	7	17	24	2	1	3	9	18	27
Training and pruning of orchards										
Protected cultivation of vegetable crops										
Commercial fruit production										
Integrated farming										
Seed production										
Production of organic inputs										
Planting material production										
Vermi-culture										
Mushroom Production										
Bee-keeping										
Sericulture										
Repair and maintenance of farm machinery and implements										
Value addition										
Small scale processing										
Post Harvest Technology										
Tailoring and Stitching										
Rural Crafts										
Production of quality animal products										
Dairying										
Sheep and goat rearing										
Quail farming										
Piggery										
11Rabbit farming										
Poultry production										

Ornamental fisheries										
Composite fish culture										
Freshwater prawn culture										
Shrimp farming										
Pearl culture										
Cold water fisheries										
Fish harvest and processing technology										
Fry and fingerling rearing										
Any other – Coconut tree climbing and plant protection	1	18	--	18	3	--	3	21	--	21
TOTAL	2	25	7	42	5	1	6	30	18	48

7.D. Training for Rural Youths including sponsored training programmes (off campus) - Nil

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Nursery Management of Horticulture crops										
Training and pruning of orchards										
Protected cultivation of vegetable crops										
Commercial fruit production										
Integrated farming										
Seed production										
Production of organic inputs										
Planting material production										
Vermi-culture										
Mushroom Production										
Bee-keeping										
Sericulture										
Repair and maintenance of farm machinery and implements										
Value addition										
Small scale processing										
Post Harvest Technology										
Tailoring and Stitching										
Rural Crafts										
Production of quality animal products										
Dairying										
Sheep and goat rearing										
Quail farming										
Piggery										
Rabbit farming										
Poultry production										

Ornamental fisheries										
Composite fish culture										
Freshwater prawn culture										
Shrimp farming										
Pearl culture										
Cold water fisheries										
Fish harvest and processing technology										
Fry and fingerling rearing										
Any other (pl.specify)										
TOTAL										

7.E.Training programmes for Extension Personnel including sponsored training programmes (on campus)

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Productivity enhancement in field crops										
Integrated Pest Management										
Integrated Nutrient management										
Rejuvenation of old orchards										
Protected cultivation technology										
Production and use of organic inputs										
Care and maintenance of farm machinery and implements										
Gender mainstreaming through SHGs										
Formation and Management of SHGs										
Women and Child care										
Low cost and nutrient efficient diet designing										
Group Dynamics and farmers organization										
Information networking among farmers										
Capacity building for ICT application										
Management in farm animals										
Livestock feed and fodder production										
Household food security										
Any other – Sustainable agriculture and horticulture	4	37	24	61	11	4	15	42	28	76
Total	4	37	24	61	11	4	15	42	28	76

7.F. Training programmes for Extension Personnel including sponsored training programmes (off campus) - Nil

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Productivity enhancement in field crops										
Integrated Pest Management										
Integrated Nutrient management										
Rejuvenation of old orchards										
Protected cultivation technology										
Production and use of organic inputs										
Care and maintenance of farm machinery and implements										
Gender mainstreaming through SHGs										
Formation and Management of SHGs										
Women and Child care										
Low cost and nutrient efficient diet designing										
Group Dynamics and farmers organization										
Information networking among farmers										
Capacity building for ICT application										
Management in farm animals										
Livestock feed and fodder production										
Household food security										
Any other (pl.specify)										
Total										

7.G. Sponsored training programmes conducted

S.No.	Area of training	No. of Courses	No. of Participants								
			General			SC/ST			Grand Total		
			Male	Female	Total	Male	Female	Total	Male	Female	Total
1	Crop production and management										
1.a.	Increasing production and productivity of crops										
1.b.	Commercial production of vegetables										
2	Production and value addition										
2.a.	Fruit Plants										
2.b.	Ornamental plants										
2.c.	Spices crops										
3.	Soil health and fertility management – LRI map based on soil test reports, crop suitability, crop based fertilizer management and crop selection	73	1973	90	1883	743	85	828	2536	175	2711
4	Production of Inputs at site										
5	Methods of protective cultivation										
6	Others – Coconut tree climbing and plant protection	1	18	--	18	3	--	3	21	--	21
7	Post harvest technology and value addition										
7.a.	Processing and value addition										
7.b.	Others – 1. Kitchen and terrace garden	3	163	176	339	7	17	24	170	200	370
	Others – 2. Use of AMC	2	35	1	36	2	--	2	37	1	38
	Others – 3. INM in Horticulture crops	1	19	--	19	11	--	11	30	--	30
8	Farm machinery										
8.a.	Farm machinery, tools and implements										
8.b.	Others (pl.specify)										
9.	Livestock and fisheries										
10	Livestock production and management										
10.a.	Animal Nutrition Management										
10.b.	Animal Disease Management										
10.c.	Fisheries Nutrition										
10.d.	Fisheries Management										
10.e.	Others – Dairy management	1	14	3	17	3	--	3	17	3	20
11.	Home Science										
11.a.	Household nutritional security										
11.b.	Economic empowerment of women										
11.c.	Drudgery reduction of women										
11.d.	Others (pl.specify)										
12	Agricultural Extension										
12.a.	CapacityBuilding and Group Dynamics										
12.b.	Others (pl.specify)										
	Total	81	2042	270	2312	769	102	871	2811	372	3183

Details of sponsoring agencies involved

1. Sujala
2. ATARI, Bengaluru
3. Horticulture Department, Davanagere
4. RKVY (ASCI), New Delhi

7.H. Details of Vocational Training Programmes carried out by KVKs for rural youth

S.No.	Area of training	No. of Courses	No. of Participants								
			General			SC/ST			Grand Total		
			Male	Female	Total	Male	Female	Total	Male	Female	Total
1	Crop production and management										
1.a.	Commercial floriculture										
1.b.	Commercial fruit production										
1.c.	Commercial vegetable production										
1.d.	Integrated crop management										
1.e.	Organic farming										
1.f.	Others – Coconut tree climbing and plant protection	1	18	--	18	3	--	3	21	--	21
2	Post harvest technology and value addition										
2.a.	Value addition										
2.b.	Others (pl.specify)										
3.	Livestock and fisheries										
3.a.	Dairy farming										
3.b.	Composite fish culture										
3.c.	Sheep and goat rearing										
3.d.	Piggery										
3.e.	Poultry farming										
3.f.	Others (pl.specify)										
4.	Income generation activities										
4.a.	Vermi-composting										
4.b.	Production of bio-agents, bio-pesticides, bio-fertilizers etc.										
4.c.	Repair and maintenance of farm machinery and implements										
4.d.	Rural Crafts										
4.e.	Seed production										
4.f.	Sericulture										
4.g.	Mushroom cultivation										
4.h.	Nursery, grafting etc.										
4.i.	Tailoring, stitching, embroidery, dying etc.										
4.j.	Agril. para-workers, para-vet training										
4.k.	Others (pl.specify)										
5	Agricultural Extension										
5.a.	Capacity building and group dynamics										
5.b.	Others (pl.specify)										
	Grand Total	1	18	--	18	3	--	3	21	--	21

7.F. Details of Skill Training Programmes carried out by KVKs under ASCI

Sl. No.	Name of Job Role	Date of Start	Date of Close	Total Participants	No. of Participants									Date of Assessment	No of Participants passed assessment
					General			SC/ST			Grand Total				
					Male	Female	Total	Male	Female	Total	Male	Female	Total		
1	FOCT	16-01-2019	05-02-2019	21	18	--	18	3	--	3	21	--	21	15-03-2019	21
2.	Dairy management	21-01-2019	19-02-2019	20	14	3	17	3	--	3	17	3	20	21-03-2019	20

PART VIII – EXTENSION ACTIVITIES (2019)

8.1. Extension Programmes (including extension activities undertaken in FLD programmes)

Nature of Extension Programme	No. of Programmes	No. of Participants (General)			No. of Participants SC / ST			No. of extension personnel		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Field Day	7	195	54	249	34	4	38	32	6	38
Kisan Mela	5	7078	4158	11236	2153	1090	3243	251	111	362
Kisan Ghosthi	8	710	226	936	197	93	290	75	16	91
Exhibition	4	509	413	922	203	175	378	114	26	140
Film Show	0	0	0	0	0	0	0	0	0	0
Method Demonstrations	46	960	246	1206	204	80	284	93	5	98
Farmers Seminar	2	273	20	293	22	8	30	14	0	14
Workshop	0	0	0	0	0	0	0	0	0	0
Group meetings	4	75	2	77	18	0	18	40	1	41
Lectures delivered as resource persons	174	4542	1829	6371	1939	852	2791	3695	948	4643
Newspaper coverage	38	0	0	0	0	0	0	0	0	0
Radio talks	14	0	0	0	0	0	0	0	0	0
TV talks	07	0	0	0	0	0	0	0	0	0
Popular articles	2	0	0	0	0	0	0	0	0	0
Extension Literature	0	0	0	0	0	0	0	0	0	0
Advisory Services	280									
Scientific visit to farmers field	227	1717	135	1852	302	58	360	239	42	281
Farmers visit to KVK	1250									
Diagnostic visits	21	154	12	166	10	3	13	17	2	19
Exposure visits	2	33	3	36	4	0	4	2	0	2
Ex-trainees Sammelan	0	0	0	0	0	0	0	0	0	0
Soil health Camp										
Animal Health Camp	2	109	7	116	10	1	11	11	3	14
Agri mobile clinic										
Soil test campaigns										
Farm Science Club Conveners meet										
Self Help Group Conveners meetings	1	0	50	50	0	22	22	13	4	17

Mahila Mandals Conveners meetings										
Celebration of important days										
National Productivity Day	1	133	2	135	37	8	45	6	3	9
National Science Day	1	10	17	27	3	6	9	2	3	5
International Women Day	1	21	4	25	0	0	0	0	0	0
World Water Day	1	60	0	60	10	0	10	4	2	6
World Tobacco Day	1	0	0	0	0	0	0	13	1	14
World Environment Day	1	48	28	76	67	34	101	6	2	8
International Yoga Day	1	0	1	1	23	0	23	44	6	50
National Fish Farmers Day	1	20	5	25	60	12	72	8	6	14
Parthenium Awareness Week (From 16th to 22nd August)	1	45	12	57	23	11	34	18	16	34
Kisan Mahila Diwas and World Food Day	1	14	86	100	2	14	16	12	2	14
World Food Day	1	100	100	200	0	0	0	0	0	0
Farmers Day	1	30	10	40	9	8	17	7	1	8
Bimonthly Meeting	3	0	0	0	0	0	0	150	45	195
KMAS	7	0	0	0	0	0	0	0	0	0
Total	525	16836	7420	24256	5330	2479	7809	4866	1251	6117

8.2 Special Extension Programmes

Nature of Extension Programme	Date(s) conducted	No. of farmers (General)			No. of farmers SC / ST			No. of extension personnel		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Jal Shakti Abhiyan	03-09-2019 19-09-2019 05-10-2019 20-10-2019	1880	167	2047	142	95	137	47	12	59
Fertilizer Use Awareness Campaign	22-10-2019	181	45	226	25	1	26	7	-	7
National Animal Disease Control Programme	11-09-2019	155	63	218	8	5	13	6	2	8
Tree Plantation Campaign	17-09-2019	2	80	82	-	3	3	19	1	20

PART IX – PRODUCTION OF SEED, PLANT AND LIVESTOCK MATERIAL (2019)

9.A. Production of seeds by the KVKs

Crop category	Name of the crop	Name of the Variety	Name of the Hybrid	Quantity of seed (q)	Value (Rs)	Number of farmers to whom provided
Cereals (crop wise)						
Oilseeds	Castor			4.7	20750	13
Pulses	Blackgram			1.18	9440	2
Commercial crops						
Vegetables	Onion	Bhima Super	--	2.435	269000	4
Flower crops						
Spices						
Fodder crop seeds	Styloxanthus	Styloxanthushemata	--	0.37	2590	10
Fiber crops						
Forest Species						
Green manure	Velvet beans	<i>Mucuna spp.</i>	--	1.5725	17695	16
	Dhanincha			3.58	14749.99	1
Total				13.8375	334225	46

9.B. Production of planting material by the KVKs

Crop category	Name of the crop	Variety	Hybrid	Number	Value (Rs.)	Number of farmers to whom provided
Commercial						
Vegetable seedlings	Drumstick	KDM-1 (Bhagya)		7437	74370	56
Fruits						
Ornamental plants						
Medicinal and Aromatic						
Plantation						
Spices	Curry leaf	Suhasini		25	500	4
Tuber						
Fodder crop saplings						
Forest Species						
Plantation	Arecanut	Channagiri local		5705	187035	29
	Coconut	Arsikere tall		3047	228425	107
	Cashew	Vengrula		1215	64550	14
Green manure	Glyricidia			50	150	1
Total				17479	555030	211

9.C. Production of Bio-Products

Bio Products	Name of the bio-product	Quantity (q)	Value (Rs.)	Number of farmers to whom provided
Bio Fertilizers	Azolla	0.24 q	480	7
	Phosphobacteria (Solid)	0.25 q	2500	1
	Rhizophos	0.17 q	1700	1
	Arka Microbial Consortia	243 l	63180	16
	Compost Prachodak	536 Bag	80280	5
Bio-pesticide	Metarizium	39 l	15600	12
	Neem cake	0.05 q	150	1
Bio-fungicide	Pseudomonas	24 l	8400	8
	<i>Trichodermaharzianum</i> (Solid)	1.15 q	9775	2
	<i>Trichodermaharzianum</i> (Liquid)	129 l	38700	26
Bio Agents	Earthwom	0.4845 q	14535	29
Micronutrient mixture	Banana Special	13.9 q	278000	347
	Vegetable Special	0.02 q	300	1
Organic manure	Vermicompost	134.655 q	134655	312
Others	Yellow sticky traps	40 No.	1400	2
Total				

9.D. Production of livestock

Particulars of Livestock	Name of the breed	Number	Value (Rs.)	Number of farmers to whom provided
Dairy animals				
Cows	HFx	3	309336	3
Buffaloes				
Calves				
Others (Pl. specify)				
Poultry				
Broilers				
Layers				
Duals (broiler and layer)				
Japanese Quail				
Turkey				
Emu				
Ducks				
Others (Pl. specify)				
Piggery				
Piglet				
Others (Pl. specify)				
Fisheries				
Fingerlings	Guppies and moulies	35	130	2
Others (Pl. specify)				
Total		38	309466	5

PART X – PUBLICATIONS, SUCCESS STORY, INNOVATIVE METHODOLOGY, ITK, TECHNOLOGY WEEK

10. A. Literature Developed/Published (with full title, author & reference)

(A) KVK Newsletter: 01

Date of start: October 2007

Periodicity: Quarterly

Copies printed in each issue: 500

(B) Literature developed/published

Item	Number
Research papers- International	--
Research papers- National	--
Technical reports	01
Technical bulletins	--
Popular articles - English	--
Popular articles – Local language	07
Extension literature	--
Others – Abstracts	7
TOTAL	15

Publication List:

Sl. No.	Date	Category	Title	Publication	Author
1	December-2019	Abstracts	Spread of BRG-5 Redgram variety in Davanagere District	Book of Abstracts. ESARD-2019	Sri Raghuraja J. Dr. Devaraja T.N.
			Enabling doubling of farmers income through polyculture of freshwater fishes.		Dr. Devaraja T.N.
			Assessment of performance of bhima super variety of onion in Davanagere District.		Sri. Basavanagowda M.G. Dr. Devaraja T.N.
			Direct dry seeded rice (DSR)-technology to trim down the consumption of water and doubling the income.		Sri Mallikarjuna B.O. Dr. Devaraja T.N.
			Farm pond – a rain water harvesting structure to improve crop productivity.		Sri Mallikarjuna B.O. Dr. Devaraja T.N.
			Impact of demonstrations imparted by ICAR-Taralabalu Krishi Vigyan Kendra on Bt Cotton growers of Davanagere district of Karnataka.		Sri Sannagoudra H.M. Sri Mallikarjuna B.O. Sri Raghuraja J. Dr. Devaraja T.N.
			Nutritious urban agriculture-way towards sustainable health.		Sri. Basavanagowda M.G. Dr. Devaraja T.N.
2	24-01-2019	Popular Articles	Baradu neladalli bangarada bele	Vijaya Karnataka	Sri. Mallikarjuna B.O.
	04-01-2019		Hecchida chali uduruva belagala hoo	Prajavani	Sri. Mallikarjuna B.O.
	30-06-2019		Krishi Gnana bhandara –Dr. M.K. Renukarya	Janatavani	Dr. Devaraja T.N.
	10-06-2019		Vruthiparathe Krishi Kshetrada ondu dodda korathe	Janathavani	Sri. Basavanagowda M.G.
	23-07-2019		Bhadreya odalina samrakshane yaara hone	Janathavani	Sri. Basavanagowda M.G.
	21-10-2019		Adikeyalli samagra bele nirvahane	Vijaya Karnataka	Sri. Basavanagowda M.G.
	21-10-2019		Adike belege hoda manakkenu parihara	Vijaya Karnataka	Sri. Basavanagowda M.G.

10.B. Details of Electronic Media Produced

S. No.	Type of media	Title	Details
1	CD / DVD	1. Activities of KVK 2. NICRA activities	8 minute duration 12 minute duration
2	Mobile Apps	--	--
3	Social media groups with KVK as Admin	WhatsApp group – 3	ICAR-Taralabalu KVK Hort DVG Forum Davanagere FPO group
4	Facebook account name	Taralabalukvk@gmail.com	--
5	Instagram account name		

10.C. Success Stories / Case studies, if any (two or three pages write-up on each case with suitable action photographs. The Success Stories / Case Studies need not be restricted to the reporting period).

I. Direct Dry seeded Rice (DSR) –Technology to trim down the consumption of water and leads to doubling the Income

Introduction

Rice (*Oryza sativa L.*) is one of the most important food crops in the world, and staple food for more than 50% of global population. The main source of food after wheat, 43% of calorie requirement is met by Rice. Direct seeded rice (DSR) is becoming popular as it is cost reduction method alternative to transplanting. Weeds management is the major problem in rice since the beginning of settled agriculture. weed causes an estimated 10-15 % (Asia) reduction in rice yield equivalent to about 50 mt of rice annually. Also, reduction in grain yield to the tune of 20-95% is visualized as a result of sever crop-weed competition (Gogoi 1998). The total labour requirement is 34 % and save nearly 30% of cost of production in Direct seeded rice as against the transplanted crop (Ho and Romill2000).

Interventions

Frontline Demonstration conducted on Direct dry seeded rice technologies with two different taluks of Channagiri and Harihara. During the year 2017 we had conducted the farmer Field School on the DSR technology at Thyavangi. Demonstration conducted with 20 farmers with package of practices followed for DSR. Seeds were treated with Azosprillium @ 500g/ha of seeds, integrated weed management, integrated pest management and water management were practiced for all the farmers and control was the transplanted Rice. Method demonstration on sowing of seeds and fertilizers with seed cum fertilizer drill and Weed management through cycle weeder in DSR. Randomly selected the ten plants from the each demonstration and controlled plots. Recorded the observation on the plant height(cm), No of tillers/plant, Test Weight (g), and Yield (t/ha). The Benefit cost ratio was obtained by recording all the cost of production and returns.

Result and Discussion

The results obtained from the demonstrations on the Integrated Crop Management in DSR on growth and yield traits in Davanagere district during *kharif* season of 2017-18 and 2018-19 are discussed and presented in table.

Effect on weeds

Integrated weed management is the best option for weed control in DSR. The plots where pre-emergent herbicide of pendimethalin at 1 kg a.i. ha⁻¹ dissolved in 500-600 L of water followed by post emergence application of metsulfuron methyl 10% + chlorimuron ethyl 10% WP herbicide at a very low dosage of 20 gm ha⁻¹, followed with one hand weeding, Cycle weeder and Inter cultivation with bullocks is effective for broad leaved and sedge weed management in rice. (R.K Tiwari e.tal) .

Effect on yield attributes and yield

Among the yield attributing characters the average plant height recoded in DSR was 105.2 cm as against the check 104.6 cm. The average number of tillers per hill was higher 53.38 in DSR as compared to check (52.79). The number of productive tillers were more in the DSR compared to Transplanted rice. From the observation on we find that there was no much difference in the test weight (23.12 and 23.10) (table 3)

The average yield recoded in the DSR was 63.10 q/ha was lower compared to check (63.45 q/ha)

Economics

The Frontline demonstration were conducted for the 2 years (2017 and 2018). The direct dry seeded (DSR) recorded the **Rs.45,000, Rs.1,29,000 and Rs.84,500** cost of production, gross cost and net return per ha respectively. The Manual Transplanted Rice (MTR) recorded the Rs.70,000, Rs.1,30,000 and Rs.60,000 cost of production, gross cost and net return per ha respectively during the year 2017-18. (Table 1.) Similar results were observed during the year 2018-19 in DSR recorded Rs.45,600, Rs.1,10,610 and Rs.65,010 cost of production, gross cost and net return per ha respectively. The Manual Transplanted Rice (MTR) recorded the Rs.67,900, Rs.1,11,420 and Rs.43,520 cost of production, gross cost and net return per ha respectively (Table 2). The Benefit cost ratio in DSR recorded was higher 2.89 and 2.43 during the years 2017-18 and 2018-19 respectively.

DSR recorded the average cost of production **Rs. 45,300/ha** and yield was **63.10 q/ha**. In manual transplanted Rice (MTR), the average cost of production of Rs. 68,950/ha and yield of 63.45 q/ha. In demonstration plot recorded the average net profit of **Rs. 74,755/ha with B:C ratio of 2.66** when compared to Rs. 51,760/ha with Benefit cost ratio of 1.74 in MTR. (Table 3)

Inference

The net returns of DSR was higher than MTR due to lower cost of cultivation and it is due to substantial reduction in machineries (41.34%), irrigation (22.45%) and human labour (6.62%). It is very clear that DSR technology is eco friendly and reduction in the critical inputs like seeds, Fertilizers and pesticides will improve the soil health and human health.

The extension methods like training, Creating awareness on the technology, Frontline demonstration, Field visit and Exposure visits will create impact on the farming community. Department of Agriculture is providing subsidy for the farmers who are following this technology (Rs.10,000/ha). The area of DSR is increasing in the Davangere district (1300 ha).

Table 1 : Growth, Yield parameters and Economics of DSR during 2017-18.

Sl. No	Technology	Plant Height (cm)	No. tillers/hill	Test weight (g)	Total Yield q/ha	Gross Cost (Rs.)	Gross Return (Rs.)	Net Return (Rs.)	B:C Ratio	% increase in Net returns	Lodging (%)
01	MTR	105.7	57.83	24.18	65.00	70,000	1,30,000	60,000	1.86		80-90
02	DSR	105.9	57.49	23.12	64.75	45,000	1,29,500	84,500	2.89	40.83	00

Table 2: Growth, Yield Parameters and Economics of DSR during 2018-19.

Sl. No	Technology	Plant Height (cm)	No. tillers/hill	Test weight (g)	Total Yield q/ha	Gross Cost (Rs.)	Gross Return (Rs.)	Net Return (Rs.)	B:C Ratio	% increase in Net returns
01	MTR	103.9	48.93	22.06	61.90	67,900	111420	43520	1.64	49.37
02	DSR	104.5	48.31	22.08	61.45	45600	110610	65010	2.43	

Table 3: Average of Growth, Yield parameters and Economics of DSR for 2 years

Sl. No	Technology	Plant Height (cm)	No. tillers/hill	Test weight (g)	Total Yield q/ha	Gross Cost (Rs.)	Gross Return (Rs.)	Net Return (Rs.)	B:C Ratio	% increase in Net returns
01	MTR	104.6	53.38	23.12	63.45	68,950	1,20,000	51,760	1.74	44.42
02	DSR	105.2	52.79	23.10	63.10	50,300	1,19,805	74,755	2.38	

II. Spread of BRG-5 red gram variety in Davanagere district

Introduction

Frontline demonstrations on integrated crop management of red gram were conducted by ICAR-Taralabalu Krishi Vigyan, Davanagere under National Food Security Mission on cluster demonstration concept. The demonstrations were conducted in Santebennuru and Devarahalli clusters during 2017-18 and 2018-19, covering 50 farmers per year. The BRG-5 variety (Source: University of Agricultural Sciences, Bengaluru) has been introduced for the first time in the district. The new variety with medium duration, red coloured seeds, tolerance to wilt and bold seeds are preference in the market.

Maize occupies 189436 ha in Davanagere district mainly grown as mono crop and red gram in 8143 ha (2017-18) (Anonymous 2017-18). The cluster demonstrations aimed at introducing suitable intercrop in maize as well as red gram as sole crop.

Intervention

The frontline demonstrations on integrated crop management of red gram were conducted in 2 clusters namely; Santebennuru and Devarahalli during 2017-18 and 2018-19 covering 100 farmers. The ICM practices like land preparation, seed treatment, spacing, intercultivation, nipping, integrated nutrient management, integrated pest and disease management, harvesting and marketing technologies were demonstrated to the farmers. Post demonstrated survey was conducted during August 2019 to know the adoption of BRG-5 variety by the demonstrated farmers and spread of the variety among other farmers.

Results and Discussion

The results of cluster Frontline Demonstrations under National Food Security Mission has been resented in Table-1. Through demonstrations BRG-5 red gram variety has been introduced in Santebennuru and Devarahalli clusters during 2017-18 and 2018-19, respectively. The results reveals that there was 27.13 % and 27.8 % increase in yield in demonstrations were recorded over the check plots. This clearly indicates efforts of scientists in disseminating agricultural information to the demonstrated farmers resulted in significant increase in yield. In the demonstration, land preparation, seed treatment, spacing, weed management, integrated pest and disease management, integrated nutrient management, intercultivation, nipping, harvesting were explained to the farmers.

The other results of cluster frontline demonstration of BRG-5 variety compared to check variety (Table 2) reveals that 10.59 and 03.69 percent increase in yield over check plot during 2017-18 and 2018-19, respectively. Further, it was observed that 40.26 and 22.21 percent increase in number of pods per plant, 98.41 and 74.05 percent reduction in incidence of wilt and 197.62 and 87.20 percent reduction in incidence of pod borer was recorded during 2017-18 and 2018-19 respectively. The newly introduced BRG-5 red gram variety is tall growing with more branches there by increased branches and pods per plant which contributes to increased yield. The distinctive character of BRG-5 variety is tolerant to wilt and pod borer incidence and results of the demonstration confirms the same when compared to check varieties. Less incidence of pest and diseases directly contribute to the increase in yield.

Table 1: Results of frontline demonstrations on BRG-5 red gram variety

Year	Particulars	Gross Cost (Rs/ha.)	Gross Returns (Rs/ha.)	Net Return (Rs/ha)	Yield (q/ha)	% increase	B:C ratio
2017-18	Demonstration	12063	40480	28417	11.9	27.13	3.34
	Check	11816	29958	18142	09.36		2.53
2018-19	Demonstration	21322	47456	26134	11.86	27.80	2.24
	Check	20338	37128	16790	9.28		1.83

Table 2: Other results of frontline demonstrations on BRG-5 red gram variety.

Parameters	2017-18		Percent change	2018-19		Percent change
	Demonstration	Check		Demonstration	Check	
Plant height (cm)	190.75	172.48	10.59	176.06	169.35	03.96
No. of pods/Plant	98.99	77.31	40.26	93.1	76.18	22.21
Wilt incidence (%)	3.15	6.25	98.41	4.24	7.38	74.05
Pod borer incidence (%)	4.20	12.50	197.62	6.72	12.58	87.20

Since BRG-5 Red gram variety is newly introduced in Davanagere district, there exists demand for this red coloured seeds as it is preferred in market. During 2018-19, 42 % FLD farmers sold 31.4 q of seeds to 280 fellow farmers and 20.6 q to private seed procurement agency and in 2019-20, 52 % of FLD farmers sold 26.8 q seeds to 169 farmers and 74.5 q to seed procurement agency. Considering demand for BRG-5 seeds ICAR-Taralabalu Krishi Vigyan Kendra organized special seminar for FLD farmers in collaboration with seed procurement agency and Rashtriya Chemicals and Fertilizers Limited (RCF) to motivate FLD farmers to sell BRG-5 variety as seeds. The seed procurement agency offered price of Rs. 50/kg immediately after harvest as against Rs. 35/kg in open market. Direct selling to the farmers as seed fetched Rs. 100/kg. The list of FLD farmers along with their contact details was given publicity through KVK WhatsApp groups and Raitha Samparka Kendras.

Table 3: Spread of BRG-5 red gram variety

Year	No. of FLD farmers	No. of FLD farmers sold seeds	Percent	Quantity (q)	No. of farmers	Sold to seed procurement agency (q)
2018-19	50	21	42	31.4 (238)*	280	20.6
2019-20	50	26	52	26.8 (237.2)*	169	74.5

* Figures in parenthesis indicates total production of BRG-5 red gram variety under FLDs

The data on vertical spread of BRG-5 red gram variety reveals that 68% and 52 % adopted this variety during 2018-19 and 2019-20, respectively. The major reasons for non-adoption of BRG-5 variety were red gram is not profitable as maize (79.1 %) followed by lack of rainfall during June-July (45.85%), difficulty in use of weedicide in maize (33.33%) and incidence of wilt (20.83%). The prices of red gram in open market ranged from Rs. 3000-3500/q which might influenced these farmers not to go for red gram in the following year. The district received 60 mm rainfall against 76 mm (-56% deficit) in June-2019 and 76 mm against normal rainfall of 97 mm (-21 % deficit) in July-2019. This played vital role in not taking up red gram and sown maize instead. In addition the cluster received continuous rains during October and November in the previous resulting in incidence of wilt might have discourage farmers to continue with red gram. Similar findings of 40% partial and 16.7% non-adoption of demonstrated red gram varieties were reported by Venkateshwara Rao *et, al.*(2017).

Table 4: Vertical spread of BRG-5 red gram variety

Year	No. of FLD farmers	No. of FLD farmers adopted	Percent
2018-19	50	34	68
2019-20	50	26	52

Table 5: Reasons for non-adoption of BRG-5 red gram variety among the FLD farmers (2019-20)

Sl. No.	Reasons	No.	Percent
1	Red gram is not profitable as maize	19	79.1
2	Lack of rainfall during June-July	11	45.83
3	Difficulty in use of weedicide in maize	08	33.33
4	Incidence of wilt	05	20.83

Inference

The efforts of Krishi Vigyan Kendra bringing changes in marketing behaviours of farmers are resulted in partial changes. The spread of BRG-5 variety in the district is encouraging as it reached Raitha Samparka Kenras (RSK) and has the good potential to replace Maize up to some extent in the district in the coming years.

III. Impact of Frontline Demonstrations on Bt Cotton Growers of Davangere District of Karnataka

Cotton is the most important commercial crop, which plays a vital role in the national economy. It is one of the most important fibre crop cultivating in Davanagere district of Karnataka in about 29000 ha with the production of 65723 bales and average productivity of 3.82 q/ha.

The conventional farming has been successful in meeting the increased food and other needs of growing population of the country for sure. But, the problems associated with conventional farming like, the high cost of inorganic chemical fertilizers and plant protection chemicals and increasing health and environmental hazards have forced many farmers and scientists to focus attention on eco-friendly, practical and sustainable farming. Indiscriminate and unscientific use of agro-chemicals and pesticides cause adverse effect on ecological balance. In order to reduce these health hazards and bring out natural balance and protection of ecosystem, integrated approach of crop management strategies are required to be followed in production of many crops.

Farmers' adoption of integrated crop management (ICM) package depends on many factors, such as their technical skill and socioeconomic conditions as well as psychological and cultural factors.

Farmers and researchers in the field of agriculture have identified several integrated crop management practices to enhance yield and maintain ecological balance. The integrated crop management practices utilizes most efficiently the traditional practices of crop rotations, tillage practices to improve soil texture, application of adequate amount of organic manures to sustain, retain and release soil moisture, inorganic fertilizers to match crop needs and correction factors of deficit nutrients in soil, pheromone and sticky traps, growing trap crops, need based pesticides to mitigate insect pests and diseases, etc.

Since farmers are the final decision-makers for adoption of any technology, it is important for the technology developers/providers to identify how farmers' react to the provided technologies and what about the adoption process of certain innovations. However, not much attention has been paid to assessing of farmers' perception and knowledge about integrated crop management practices, quantifying levels of adoption of different ICM components and their determinants.

Keeping these facts in view, the present study was designed to find out the extent of adoption of different integrated crop management practices in cotton which were demonstrated by ICAR- Taralabalu Krishi Vigyan Kendra through frontline demonstrations (FLD) in Davanagere district.

Interventions

The study was conducted at the villages of demonstrations conducted by ICAR- Taralabalu Krishi Vigyan Kendra on integrated crop management in cotton in Davanagere district of Karnataka. Name of the villages, talukas and year of demonstrations conducted are listed in table below (Table 1). A list of cotton growers in these villages was obtained by conducting group discussions and participatory rural appraisals (PRA). Later farmers were selected based on their willingness to adopt demonstrations to be conducted by ICAR- Taralabalu KVK.

The data on adoption of different integrated crop management practices were collected from farmers involved in ICM demonstrations by personal interview method with the help of questionnaire developed for this purpose.

The data were tabulated, analyzed and expressed in terms of percentage to draw the varied inference.

Table 1. Year, Village and Taluk of demonstrations conducted on ICM in cotton by ICAR-TaralabaluKVK, Davanagere.

Year of Demonstration	Village	Taluk
2009-10	Anajigere	Davanagere
2010-11	Anajigere	Davanagere
2011-12	Taraganahalli	Honnali
2012-13	Hedne	Davanagere
2013-14	Kuremaganahalli	Harapanahalli
2014-15	Balamuri	Honnali
2015-16	Kuremaganahalli	Harapanahalli
2016-17	Kadabagere	Harapanahalli
2017-18	Katenahalli	Jagaluru

RESULTS AND DISCUSSION

Yield and Economics of Demonstrations conducted by ICAR- Taralabalu KVK

The average yield of nine years of cotton was 14.24 q/ha as against 10.81 q/ha in check plot which is 24.24 per cent higher (Table 2.). The higher yield of cotton in demonstration plot was mainly attributed to the adoption of improved technologies like improved hybrid, maintenance of proper spacing balanced nutrient application including secondary and micronutrients, integrated pest and disease management, proper method of irrigation. The similar observations were obtained by Shyamrao Kulkarni *et al.*(2018).

Net profit of Rs. 30,431/- per hectare and cost benefit ratio of 2.34 was found in demonstrations compared to Rs. 16,946/- and 1.66 in check plots, respectively. This is attributed to higher yields obtained under improved technologies compared to farmers plot as local check.

Adoption level of integrated crop management technologies in cotton by farmers involved in ICM demonstrations conducted by ICAR- Taralabalu KVK

The data depicted in Table 3 revealed the extent of adoption of integrated crop management practices by cotton growers after the demonstration.

Table 2. Yield, Net profit and B:C ratio of demonstration plots and check plots. (n=295)

Year of Demonstration	Area (ha)	No. of Demo	Demonstration Plots			Check Plots		
			Yield (q/ha)	Net Return (Rs/ha)	B:C Ratio	Yield (q/ha)	Net Return (Rs/ha)	B:C Ratio
2009-10	50	50	15.33	21387	2.26	9.71	3430	1.16
2010-11	24	60	12.80	40543	2.86	10.10	26780	2.20
2011-12	20	55	9.50	15350	1.65	7.90	8390	1.35
2012-13	14	35	13.75	25813	1.83	10.25	9538	1.29
2013-14	4	10	14.25	36150	2.12	10.75	17100	1.50
2014-15	8	20	18.60	56040	3.17	16.18	44692	2.69
2015-16	8	20	17.93	40765	2.59	16.67	35405	2.35
2016-17	8	20	15.40	46848	2.64	13.97	39163	2.34
2017-18	10	25	15.02	43830	2.55	13.19	33606	2.14
Cumulative Average/ Total	146	295	14.24	30431	2.34	10.81	16946	1.66

In case of cultural practices, cent per cent of the farmers adopted deep ploughing in summer which is an important method of exposing the early stages of pest and weed seeds to sun for natural destruction and making the soil to a fine tilth for increasing the soil fertility and for good germination of seeds. Invariably farmers are using pest tolerant varieties available in market.

87.5% of farmers started adopting crop rotation which is helpful to reduce insect pest and diseases and manage nutrients deficiency. About 66.4% of farmers were following crop rotation before demonstrations.

The reasons that could be attributed for such adoption behaviour by the farmers might be that these cultural practices form the part and parcel of crop cultivation practices incurring zero cost (Shashidhara, 2012).

Table 3. Adoption level of integrated crop management practices before and after demonstrations conducted. (n=295)

Integrated Crop management practices demonstrated/taught	Farmer's Practice Before Demonstration		After Demonstration			
	No	%	Adopted		Not Adopted	
			No.	%	No.	%
Cultural practices						
Deep ploughing in summer	295	100.0	295	100.0	0	0.0
Use of pest and disease resistant varieties	238	80.7	295	100.0	0	0.0
Proper Spacing (120X60 cm)	122	41.4	215	72.9	80	27.1
Crop rotation	196	66.4	258	87.5	37	12.5
Inter cropping	91	30.8	104	35.3	191	64.7
Integrated Nutrient Management						
Application of Organic Manure	237	80.3	254	86.1	41	13.9
Soil testing	5	1.7	31	10.5	264	89.5
Application of recommended dose of inorganic fertilizers	5	1.7	43	14.6	252	85.4
Spraying of Magnesium Sulphate to prevent leaf reddening	18	6.1	139	47.1	156	52.9
Spraying of Potassium Nitrate to increase boll size	6	2.0	105	35.6	190	64.4
Growth Regulator (NAA) to prevent flower dropping	15	5.1	82	27.8	213	72.2
Integrated Pest Management						
Classification of pesticides based on mode of action	8	2.7	56	19.0	239	81.0
Trap cropping	8	2.7	25	8.5	270	91.5
Installation of bird perches for predatory birds	21	7.1	36	12.2	259	87.8
Installation of Sticky traps to monitor Sucking pests	0	0.0	13	4.4	282	95.6
Installation of Pheromone traps to monitor pink boll worm	0	0.0	7	2.4	288	97.6

With respect to integrated nutrient management practices, majority of farmers were applying organic manures even before (80.3%) and after (86.7%) demonstrations. It was surprising to notice that majority (85.4%) of the farmers had not applied recommended dose of fertilizers, timely application and split application of fertilizers on the cotton crops. Lack of knowledge, high cost of fertilizers might have resulted in such a situation.

Majority of the farmers (47.1%) started applying magnesium sulphate to prevent leaf reddening and spraying of NAA (27.8 %) and potassium nitrate (35.6 %) to prevent flower drop and to increase boll size, respectively. Quick results obtained by spraying of these water soluble fertilizers could be the probable reason for drastic increase in adoption level after demonstration.

In case of integrated pest management practices, about 19% increase in knowledge on selection of systemic insecticides was observed.

None of the farmer was using sticky traps and pheromone traps before demonstrations. About 4.4 and 2.4 % of farmers started using these traps to attract and monitor insect pests after demonstrations were conducted. Majority (95.6 % and 97.6 respectively) of the farmers did not adopt these technologies to attract and monitor insect pests. This might be because, the use and maintenance of sticky and pheromone traps required good care on the part of the farmers, required periodical replacement of the lure and also their non availability.

Inference

Hence, it may be concluded from the study that, there is an imperative need to raise the level of adoption of these ICM practices in order to obtain sustainable yield and to maintain ecological balance by reducing the use agriculture chemicals and to increase farmers income in the long run and also to provide the required facilities by the State Department of Agriculture, besides providing more technical guidance through conducting demonstration in each village and follow-up approach.

IV. Assessment of performance of Bhima Super Variety of Onion in Davanagere District

Introduction

Onion (*Allium cepa* L.) is one of the important commercial vegetable crops cultivated extensively in India and it belongs to family Alliaceae. Onion is an indispensable item in every kitchen as vegetable salad and condiment, therefore commands, an extensive internal market. Onion is liked for its flavour and pungency which is due to the presence of organic compound rich in sulphur (Allyl propyl disulphide). Onion bulb is a rich source of minerals like phosphorus, calcium and carbohydrates. It also contains protein and vitamin C. It is being used in several ways as a fresh, frozen and dehydrated bulb. India ranks second in the world in area and production after China and third in export after Netherland and Spain. India is producing 23,610.10 thousand million tonnes of onion from an area of 1,293 thousand ha with an average productivity 16.10 t/ha. In Karnataka, it is grown about 195.28 thousand million ha with an average production of 2,986.59 thousand million tonnes and productivity 15.29 t/ha (Horticulture statistics at a Glance-2018).

Onion cultivar shows wide variation in their yielding ability when grown over varied agro-climatic conditions. Different cultivars perform variations in the productivity in different soil and climatic conditions. Davanagere District being one of the major vegetable producing area, onion crop attain a good area in honnali and Jagalur Taluks. The performance of the existing local varieties in the district is below the average productivity of the District. Also the keeping qualities of the local variety was very poor which is leading to the early disposal of the produce for the lowest price by the farmers. Therefore, keeping this in view, the different constraints cited above and realizing the need of comprehensive study to select the most suitable high yielding variety with better growth, yield and quality by screening existing cultivar of onion for Davanagere District.

Interventions

Frontline demonstration on Performance of Bhima Super variety was carried out in two different locations of Jagalur and Honnali Taluk in the year 2016-17 and 2017-18 respectively. In Jagalur Taluk the control variety was Bellary red where as in case of Nyamathi its Nyamathi local variety. Ten Farmers for each demonstration was selected and soil test for the each plot was done before sowing of the crop. Seeds were treated with *Trichoderma harzianum* @ 4g per kg of seed. Each farmer was given seeds for about one acre and the relevant package of practices from time to time was provided. Randomly ten plants from each plot were selected to recorded the observations on Germination (%), Plant Height (cm), Number of Leaves, Collar Thickness (cm), Ten Weight of Bulb (g) , Total Bulb Yield (q/ha) . The Benefit cost ratio was obtained by recording all the cost of production and returns.

Results and Discussion

The results obtained from the present demonstrations on the Performance of onion (*Allium cepa* L.) varieties for growth and yield traits in Davanagere district during *kharif* season of 2016-17 and 2017-18 are discussed and presented in table.

Growth Parameters

Data pertaining to Germination (%), Plant Height (cm), Number of Leaves, Collar Thickness (cm) varied significantly during *kharif* season of 2016-17 in Davanagere District presented in Table 1.

It is revealed that after 30 days of sowing, highest germination percentage (93.00) was noticed in Bhima Super variety as compared to Bellary red(84.20). Meanwhile the parameters like Plant height (58.41 cm), Number of leaves (9.29), Collar Thickness (1.39 cm) were also better compared to the presently grown local variety Bellary red with 55.34 cm, 8.72, 1.28 cm respectively.

In the year 2017-18 data pertaining to Germination (%), Plant Height (cm), Number of Leaves, Collar Thickness (cm) varied significantly during *kharif* season of 2017-18 in Davanagere District presented in the Table 2.

After 30 days of sowing the data pertaining to the Germination (90.4 %) was superior in Bhima Super variety compare to Nyamathi local variety (84 %). Other growth parameters like Plant height at 60 days of sowing was Better in Bhima Super (62.83 cm) as compared to Nyamathi local (58.98 cm). Even Bhima super variety performed Better in parameters like Number of leaves (10.32), Collar Thickness (1.49 cm) as compare to Nyamathi local which is having 9.02 and 1.37 cm respectively.

Among these two varieties, Bhima Super performed better in all the growth parameters compared to local varieties. Thus the increased germination and number of leaves helped in better synthesis of carbohydrates and their utilization for build up of new cells apart from better absorption of nutrients resulting in increased dry matter production on such variations in the growth among the cultivars were reported by Ram RB *et al.* (2011) and Singh RK *et al.* (2011).

Yield Parameters

Data pertaining to Average Bulb weight (g), Total Yield (q/ha) and Total Marketable yield (q/ha) varied significantly during *kharif* season of 2016-17 in Davanagere District presented Table 1.

From the data it was found that all three parameters were found better in Bhima Super variety with 70.65 g, 194.6 q/ ha and 179.9 q/ha respectively when compared to 67.23 g, 160.4 q/ha and 148.4 q/ ha in local variety Bellary red.

Data pertaining to Average Bulb weight (g), Total Yield (q/ha) and Total Marketable yield (q/ha) differed significantly during *kharif* season of 2017-18 in Davanagere District presented in the Table 2.

Bhima super variety was recorded Maximum Average Bulb Weight (72.72 g), Total Yield (212.4 q/ha) and Total Marketable yield (201.37 t/ha) compare to Nyamathi local variety which was recorded 69.24 g, 152.6 q/ha and 141.23 q/ha respectively.

Bulb weight is ultimately governed by the accumulation of carbohydrates and other metabolites which depend ultimately on the synthesis and supply of photosynthesates by leaves or subsequent translocation vertically downward to bulb and root. Similar findings have been reported by Lawande et al. 2011 and Tripathy et al, 2013.

The highest yield of bulbs from Bhima Super variety can be attributed to maximum Germination, plant height, number of leaves which are important components of growth which resulted in accumulation of more food material in the bulb. The variation in the yields of different cultivars grown under similar conditions has been obtained from several reporters such as, Anil Khar *et al.* (2007) and Yadav SS *et al.* (2009).

Income generation

Bhima super variety was provided the best Benefit cost ration when compare to the local varieties. During the demonstrations of both years In the year 2016-17 Bhima super with 2.42 and local Bellary red with 1.82 in BC ratio. Where as in the year 2017-18, 2.99 in Bhima super and 1.90 in case of Nyamathi local variety.

The highest income is directly proportional to the maximum marketable yield and price. Similarly the cost of inputs and the weeding also contribute to some extent on total cost of production.

Based on the above results in the demonstration it was found that Bhima Super variety performed better in both the Onion growing taluks when compared to the existing local varieties. Therefore, it can be recommended to farmers for large scale adoption.

Table 1: Growth and yield characters of Onion Varieties during 2016-17.

Sl. No	Variety	Germination (%)	Plant Height (cm)	Number of Leaves	Collar Thickness (cm)	Average bulb Weight (g)	Marketable Yield (q/ha)	Total Yield q/ha	Gross Cost (Rs.)	Gross Return (Rs.)	Net Return (Rs.)	B:C Ratio
01	Bellary Red	84.20	55.34	8.72	1.28	67.23	148.4	160.4	105280.6	192480	87199.4	1.82
02	Bhima Super	93.00	58.41	9.29	1.39	70.65	179.9	194.6	96457.8	233524	137066	2.42

Table 2: Growth and yield characters of Onion Varieties during 2017-18.

Sl. No	Variety	Germination (%)	Plant Height (cm)	Number of Leaves	Collar Thickness (cm)	Average bulb Weight (g)	Marketable Yield (q/ha)	Total Yield q/ha	Gross Cost (Rs.)	Gross Return (Rs.)	Net Return (Rs.)	B:C Ratio
01	Nyamathi Local	84.00	58.98	9.02	1.37	69.24	141.23	152.6	120764.8	228900	108135.2	1.90
02	Bhima Super	90.4	62.83	10.32	1.49	72.72	201.37	212.4	106688	318600	211912	2.99

V. Nutritious urban Agriculture- way towards sustainable health

Introduction

Organic terrace gardening provides an opportunity for all citizens to cultivate quality vegetables, fruits, flowers at home. This practice not only reduces the use of chemicals in the gardening but also encourages in consumption of safe food. Green terrace tops with plants and flowers provide green and cool spaces, energy conservation, best quality air for breathe, healthy life, good biodiversity . Terrace gardens give pleasure to city residents and provide an opportunity for improving creativity as well psychological benefits. As an added advantage, balcony gardens are creation of aesthetic look and pleasant environment in living areas.

Although the world's food supply is claimed to be sufficient to meet the present needs, an estimated 842 million people or one in eight people in the world are suffering from chronic hunger and regularly not getting enough food for an active life. Like wise, India is self-sufficient in food production but 231 million people of its total population of approximately 1.2 billion are undernourished (Paneerselvam 2014) Home gardening activities are simple and most efficient technology which may result in better use of household resources and improved practices of waste converted into healthy and nutritious manure which is used for growing the vegetable plants.

Organic gardening practices will sustain soils, plants and nourishes our family both physically and aesthetically. Terrace gardening can act as solution to climate change and for reducing carbon and energy foot print. Due to population explosion and pressure, there is hardly any space available in houses or multi-storey buildings to grow vegetable. In such situation the technology of terrace gardening using locally available resources provides some compensation of recreating agricultural land lost for building houses for growing immediate household needs.

One can easily build the terrace garden with reasonably priced materials like metal and plastic drums, plastic sacks, grow bags, plastic and earthen pots, basins, bricks, etc. By nature, most of these building materials have adequate pores for the aeration and free flow of water during irrigation. Bricks can be placed one above the

another to desired height and later filled with soil and biomass. A tarpaulin sheet may be used at the base of the drum or bed to avoid the problem of algae. Rao, (2016) provides a case study, which highlights the benefits of terrace garden and its significant role in sustainalise and environment.

Interventions

ICAR Taralabalu Krishi Vigyan Kendra, Davanagere in collaboration with Department of Horticulture conducted series of Training programmes during 2013-2019. Around 2000 families in the cities were covered in the training programme. Both On campus and Off campus trainings were conducted.

Pre test was conducted before start of the training programme in each training. All the participants were compulsorily to fill the pre test format of simple 10 questions. The knowledge level on the prescribed training was assessed by using the pre test format. Scoring level of 1-10 points were given for each component in the format.

Both Theory and Practical demonstration were done during the training programme. Method demonstration on Preparation of potting mixture, selection of different types of pots, planting, watering, use of organic manures and repotting procedures were explained during the course. Follow up visits by the experts and officers was conducted to record the observations.

The data pertaining to consumption of raw vegetables in the diet, quantity of vegetables produced , cost incurred for the establishment of garden, amount saved for the vegetable purchase and extent of adoption were studied.

METHODS OF CULTIVATION

Benches

In the open roof top, based on the bearing load, iron stands both in Horizontal and vertical shapes was installed . The soil mixture (2 parts of red soil + 1 part of sand + 1 part of compost) filled up and utilizedfor growing the fruit or vegetable crops (Hodgson, 2006).Leave one inch space at the rim, to facilitate irrigation.

Pots and Containers

Pots and containers viz., paint buckets, damaged bowls / water tanks/ buckets, plastic jars, tin boxes, boxes, crates, paws, unused water cans, plastic barrels, wooden barrels, earthen pots, drums and different sizes, plastic covers, cement / fertilizer bags, damaged sink / wash basin can be used for growing of fruits and vegetables on the roof gardening.

Plastic pots

Plastic pots of round and square types can be used for raising indoor plants. The multidimensional uses of plastic pots are reusable, light weight, non-porous and they require only little storage space.

Seed pan and seed boxes

Seed pans are shallow earthen pots about 10cm height and 35cm in diameter with a drainage hole at the bottom. Seed boxes are made of wood, porcelain and earthen pots of 40cm wide and 60cm long and 10cm deep can also be used as seed pans. Over this, required soil mixture was added and kept in open sunlight for raising the vegetables.

Polythene bags

Small polythene bags with punched holes at the bottom for drainage and filled with a porous rooting medium were used for propagation of cuttings like jasmine, duranta, crotons etc. The soil mixture was filled in polythene covers and used for the cultivation of vegetables like tomato, brinjal, chilli, turmeric, coriander, amaranthus etc.

CULTURAL PRACTICES

Fertilizer application

Vermicompost @100 g/plant was applied at monthly intervals. Neem powder was mixed at the time of potting. Each pot was provided with organic supplements.

Application of decomposed kitchen waste will be suitable (Hall, 1995).

Watering

Container growing plants required water judiciously, Plants in pots and containers need water judiciously. Plants need extra water during summer season and hence the plants should preferably be irrigated twice a day (Chandy, Michelle, 2005). The thumb rule for irrigation is that the top soil should be scratch about one inch and seen, if the lower soil is damp, there is no need of immediate irrigation. In general, watering can be done as and when required. Drip irrigation system was made compulsory in all the gardens.

Staking

Staking was required based on the growth stage of plant. Plants like lab lab, ribbed gourd, bottle gourd and snake gourd need staking or it has to be trained in pandal system for proper support. Plants like tomato, brinjal and chilli also need staking on 60th day of planting.

Weed control

Hand hoeing and weeding helps in aeration in the root zone there by increases healthy plant growth. Weeds should be removed gently in leafy vegetable crops like amaranthus, fenugreek, spinach, coriander etc.

Harvesting

Fruits and vegetables are harvested at the peak of maturity and used promptly, are always superior in nutritional content, freshness, flavor and appearance. Leafy vegetables are picked up frequently when tender. Root vegetables should be pulled out while tender otherwise they become pithy. Tomato was picked at ripe stage, brinjal and okra are picked after they attain full size but still tender.

Refilling of containers

After 15 days, add organic manures and mix the soil thoroughly and refill the pots or polythene covers. For perennial vegetables repotting was done for every year at 10 months intervals.

Results and Discussion

The systematic analysis of the findings of the research are described below.

Table 1. Vegetables preferred for Terrace garden

SI No	Preferred Vegetables	Urban Families (N-100)	Percentage(%)
1	Tomato	84	84
2	Chilli	82	82
3	Brinjal	64	64
4	Okra	79	79
5	Leafy Vegetables	93	93
6	Cucurbits	81	81
7	Root crops	58	58
8	Bulb Crops	62	62

From the Table 1 it is revealed that majority of the respondents want to cultivate native vegetables like Tomato, Chilli, leafy vegetables. However few respondents are very choosy in selection of root and bulb crops.

Table 2. Source of Information on Terrace gardening

Sl. No	Sources	Urban Families (N-100)
1	What's App message from experts	78
2	News Paper	92
3	Neighbours	25
4	Personnel visit	48

Table 2 reflects that news paper and use of social media like what's App has played vital role in spreading the awareness on Terrace garden training and its activities. New group on Terrace garden in what's App was created and participants were actively involved in the discussion.

Table 3. Results recorded in Terrace gardening Demonstration

Sl.No	Particulars	Check	Demonstration
1	Number of vegetables consumed /week	07	15
2	Average consumption of Leafy vegetables / week (No.)	03	06
3	Shelf life (Days)	04	07(Always Fresh)
4	Cost of vegetable purchased/week from market (Rs.)	350-00	100-00
5	Physical Activity/ week(hr)	04	10
6	Gross cost (Rs., 3 months)	3600-00	6000-00
7	Gross Income(Rs., 3 Months) (@Rs. 1000 per week) Revenue generated if sold	3600-00	12000-00
8	Net Income (Rs.)	--	6000-00
9	BC ratio	1.00	2.00

The results of the demonstrated conducted shows that the average consumption of vegetables was increased considerably in the diet after the training programme and due to harvest of fresh vegetables the shelf life of vegetables was also extended . Due to involvement of the family members in the gardening process the physical activity is increased and the time spent on wasting the time was reduced.

Table 4 . Observations during Sustainable Vegetable Production in Terrace

Social	Economic	Environmental
<ul style="list-style-type: none"> • Active community participation • Education • Aesthetic value • Nutritional security 	<ul style="list-style-type: none"> • Local Food production • Exchange • Fresh availability 	<ul style="list-style-type: none"> • Zero food miles • No Package • Home composting • Clean environment

Inference

As the world is heading towards the depletion of natural resources and the loss of forest/garden area due to urbanization, there is a dire need for terrace gardens. Due to the population explosion with a house for every citizen in the country, all the open areas are taken away by concrete buildings. This has created the ecological imbalance, which can cause tremendous harm to our future generations. When we cannot avoid utilizing open spaces on the ground for the construction of buildings and other utilities, then at least the open spaces available above these buildings can be utilized for plantations and gardens to minimize the ecological imbalance, if not eliminate it altogether. There are many benefits of these terrace gardens, such as waste recycling, ecological benefits, energy conservation, water conservation, decorative enhancement of buildings, occupant’s health benefits and attracting birds and insects. Manthra for Sustainable life would be ‘ a vegetable, a home’.

VI. NRM works leads to doubling of the farmers Income

Introduction

ICAR- Taralabalu KVK, Davanagere is working in Agasanakte village from past two years under NICRA project. In addition to Siddanuru village. Agasanakte village located 18 kms away from KVK. The average annual rainfall of this village is 500mm, but the annual rainfall and number of rainy days is increasing from last 3 years. The major crops grown in village are Maize, Redgram, Cotton, Vegetables, Pomegranate, Sugarcane and Arecanut.

The main crop of the village is maize, which is grown as a sole crop in an area about 300 ha. Due vagaries in the climate during the last two to three years farmers are faced reduction in the yield when they grown as a sole crop.

Additional Village Agasanakatte : 2017-18 (2km away from Siddanuru)

Name of the village and district	Agasanakatte, Davangere District
No. of households	203
Total cultivated area (ha)	269.2
Area under rainfed cultivation (ha)	203.6
Major soil type	Red, Redgravel and black soil

Problems of the farmers: Due to the drought from the last three years , the bore wells were drying and water table had drastically gone down. The farmers had invested more than 50 lakhs for the bore well digging in the village.

Intervention through Natural Resource management: ICAR-TKVK conducted the Participatory Rural Appraisal in the village and collected the information on the water harvesting structures in the village and studied the structures layout and water quantity that flow into the structures.

Deepening and Widening of the Check dam : Under NRM intervention after finalizing with the farmers we took up the works at Check dam (Badaparra Nangappa). More than 25 farmers will be benefitted and used for the drinking purpose for animals. The work was completed during 2017 -18, its impact is clearly showing 2018-19.

Table 1: Rainfall received during Cropping season2018 at Simple weather station

March	3.3	41.8	1
April	38.1	23.2	4
May	88.1	140.1	6
June	75.00	57.2	5
July	88.20	76.4	11
August	74.20	125.5	13
September	112.10	07	1
October	117.30	27.7	3
November	38.30	09.1	1
December	8.60	02.1	1
	811.3	510.6	46

After the completion of the work there was good rains in the moth of May 140.1 mm and check dam was completely filled and farmers were very happy and informed us in the phone. The water will be remained in the check dam for nearly 35-45 days. The water holding capacity of the check dam increased from 32,40,000 L to 1,05,30,000 L.

Table 2: Showing the NRM structure Check dam at Agasanakatte

NRM Structures	Area		Storage Capacity	
	Before	After	Before	After
Badappara katte check dam (Desilting and deepening)	180 m X 9 m X 2 m 3240 m ³	180 m X 9 m X 6.5 m 10,530 m ³	3240000	10530000

Impact of the check dam deepening and widening :

Activity	Bore wells depth from water lifted		Crops grown
	Before	After	
Deepening and widening of check dams	185 feet	100 feet	During the dry spells of maize crops during the month of August and September , protective irrigation were given from the bore wells which yielded the 30 q/acre when compared to check yielding 18 q/acre

Impact: Farmers around the check dam were happy because nearly 100 acres of maize crop was irrigated by the bore wells during the dry spells had doubled the Maize yield.

Bumper yield of Maize crop

Treatment	Name of crop	Area (ha)	Crop yield (q/ha)	Cost of cultivation (Rs/ha)	Gross income (Rs/ha)	Net return (Rs/ha)	B:C ratio
With irrigation	Maize	40	64.5	45,800	1,16,100	70,300	2.53
Without irrigation	Maize	40	53.75	44,000	96,750	52,750	2.19

Due to availability of water in the bore well around 100 feet during the February, farmers are going for the additional vegetable crops like Arecanut, tomato, Brinjal, and Finger millet. The Net income of the farmers is likely to be increased during this year and they can save their arecanut gardens.

When we compare with the farmers on the other side of the village, the bore wells depth is 450 ft, but water available at 280 ft when compared with the farmers near check dam. Mr, Vasantha kumar who had dig bore well in the month of September end , he could a get water from 100 ft and dig upto 280 ft when compared with other farmers dig about 300 feet and water may be available at 220 feet on wards.

Farmers Feed Back:

- Water Storage capacity had increased , leads to increase in the water table
- Last two years due to erratic rainfall, bore wells were dried
- During the November, I dig the bore well and could get the water around 100 feet (Farmer near the check dam)
- The temperature had raised to 37degree, but still the bore wells are running.
- The farmers on the other side of the village, the bore wells are drying
- Due to increase in water table, the bore wells may give water upto April
- Due to improvement in Bore wells now we had taken additional crop like vegetables which in turn increases the cropping intensity.

VII. Enabling doubling of farmer income through polyculture of freshwater fishes in Davanagere district, Karnataka

Introduction:

Freshwater aquaculture is crucial to support valuable food production for continuously increasing population in India as well as the world. Fish production in India is 12.3 mmt (3.56 aquaculture + 8.76 capture, Fisheries Statistics, GoI, 2017-18.). We stand 2nd in aquaculture and 3rd in total fish production. Karnataka produces a total of 0.72 mmt of fish with 0.3 mmt from aquaculture and 0.42 mmt from capture. Right now, world is producing 170.94 mmt of fish in which 90.73 mmt is from capture and 80.01 mmt is from aquaculture. 14 million people are employed in the industry, i.e., 8 % of employed people in the world. Currently, 33,534 crore rupees annual global turnover is seen in fisheries sector. WHO recommends a consumption of 18 kg fish per person per year. However, India can only boast of 11.5 kg and Karnataka to 6.5 kg per person per year which is far below the recommendation. Therefore, there is an immediate need to increase the production and supply of complete food like fish especially in the rural region of India.

Global population has increased from 2.5 billion in 1950 to 7.2 billion now and to >9 billion by the year 2050. At the same time, India's population of 370 million in 1950 increased to 1.2 billion now and to 1.6 billion by 2050. Projected trajectory to 2050 indicates a need to build a city of 1 million every 5 days in developing countries (FAO, www.fao.org.in).

Global food production need to increase by 70%, while developing countries need to double the production by 2050, to meet the demand of additional 2.3 billion people and increasing affluent middle class. It would be necessary to have a land area of about South American Continent to produce this additional food.

Estimates suggest that cereal production must increase to 3 billion t from 2.1 billion t. Meat should increase from 200 million t to 470 million t. Fish production must enhance by at least 60 million metric tons in another 10 years and India's fish production must see a rise of 5-6 mmt in another 2 years.

Demand for food will go on increasing due to population growth, urbanization and affluent middle class and not to forget, the impact of climate change on all spheres of life. These are all global concerns which require local response for any kind of mitigation.

Aquaculture, particularly from freshwater sector, food production can see a big ray of hope, although above said limiting factors will impact it as well. Aquaculture sector is being challenged by climate change, declining resources (land, water, nutrients), lack of adequate number of species, lack of good quality and quantity of fish seeds, increasing cost and decreasing quantity of feed ingredients and health management.

India has vast potential aquatic resources in the form of ocean (2.02 million sq.km.), rivers (29,060 km.), reservoirs, ponds, tanks, lakes (4 million ha.) and blessed with nearly 46 inches of rainfall annually.

ICAR-Taralabalu KVK has making its sincere efforts in addressing this issue of producing food to meet the national and international demand. KVK has taken series of demonstrations on freshwater aquaculture practices and trying to inculcate the habit of fish culture wherever water and other resources are available (KVK Annual Reports, 2011-2017).

Interventions:

Frontline demonstrations on polyculture of freshwater fishes were conducted from 2011 to 2016 with 35 farmers in 20 villages of Davanagere district. Good aquaculture practices were taught to farmers through on and off campus trainings. Pond preparation, selection of fish fingerlings, feeding rate and frequency, water quality management were discussed with scientific rationale.

Farmers were supplied with fingerlings of carps (Catla catla, Labeo rohita, Cyprinus carpio, from BRP Lakkavalli, Hathikatte and FRIC, Bengaluru) and Pangasius sutchi (procured from Andhra Pradesh) and stocked with 15,000 number per ha. All fish seedlings were of 3-4 inches in size at the time of stocking. Cost of seedling was Rs.1 per fingerling.

Ponds were manured with cow dung 15 days prior to stocking and allowed plankton to establish in adequate density. Feeding of fishes with rice bran and groundnut (1:1) mixed with vitamin mineral mixture at the rate of 3% body weight.

Frontline demonstration (2010-11): Pangasius sutchi along with Catla and Rohu at 4:3:3 were stocked in 7 farmers' ponds of varying areas (from 550 m² to 1100 m²) (MM Rahman, 2006). Pangasius was brought into the district for the first time (8-10 cm length and 2-3 fingerlings per m²) in collaboration with ZARS, Navile, Shivamogga. There were not many farmers to take up pond fish culture as they had not seen successful ventures in aquaculture yet. Pangasius and carps were given farm made feed initially for 4 months and then, factory made extruded floating feed for the rest of culture period of 8 months at the rate of 3-5% of body weight.

Frontline demonstration (2012-13): First attempt to introduce culture Pangasius in ponds was encouraging which prompted 17 farmers to come forward and take up fish culture in their own lands. Farmers with farm ponds (100 m²) to big earthen ponds (1 ha) were trained to stock Pangasius, Catla, Rohu and Common carp with 3-4 fingerlings per m². Feeding was better standardised upon previous year's experience as Pangasius being a voracious feeder.

Frontline demonstration (2013-14): Successful demonstration of Pangasius culture along with carps had encouraged farmers to take up fish culture in larger ponds. Six farmers with varying pond size (0.25 acre to 4 acres) were part of this demonstration who could repeat the previous year's success in production. The cost of feeding was noted to increase as the industry observed a steep increase in the cost of feed ingredients.

Frontline demonstration (2016-17): Experiences of senior fish farmers had helped beginners to operate with ease especially in stocking bigger sized fingerlings. Few farmers were trained to rear fingerlings in smaller ponds for a period of 3 months with higher stocking density (15-30 fingerlings per m²). Stunting of fingerlings was

practiced by giving feed ad libitum (Kamaruddin, R. and Baharuddin, A., 2015). This practice gave potentially stronger advanced fingerlings for stocking in bigger ponds. Such special fingerlings would grow faster than normal ones. Five farmers with varying pond sizes (0.4 ha to 2 ha) were selected to demonstrate the power of fish culture in doubling the farmers income without a doubt.

Extension activities:

On and off campus trainings relevant to the demonstrated technologies were conducted periodically for all the selected farmers. National Farmers Day and World Aquaculture Day were celebrated every year on July 10th and November 21st respectively to boost the morale of farmers in collaboration with Department of Fisheries. Four NFDB sponsored training programmes were conducted by KVK to introduce latest technologies in freshwater aquaculture. Regular field visits and method demonstrations were carried out to monitor the practices in farmers’ field level. Two trainings sponsored by Department of Fisheries were conducted every year to allow farmers to utilise the scheme benefits. A special training on feeding was organised in collaboration with CIFA, RC, Hesaraghatta, Bengaluru. Farmers were given practical understanding of fish culture practices with practicing farmers in neighbouring districts viz., Shivamogga and Bellary. They were also taken to Government seed production centre BRP, Lakkavalli and Seed Rearing villages Hathikatte and Pillangeri of Bhadravathi taluk.

Results:

Fish culture in own ponds had started to gain momentum with farmers making good profits during the previous years.

Results of FLD 2010-11: The yield from demonstration was 79% more than the check (village tank culture). The culture was carried out for 10 months and feeding with floating feed from the beginning would have helped in increasing the yield further. The average selling price at farm gate was Rs.40 per kg of fresh fish. The yield obtained in the demonstration was far below the potential of the involved species and it could be attributed to the smaller stocking size (8-9 cm) besides lower feeding rate and frequency.

Table 1: Yield and economics of FLD 2010-11

Cost of production (Rs./ha)		Yield (t/ha)		Gross Return (Rs./ha)		C:B	
D	C	D	C	D	C	D	C
75,863	30,000	5.4	1.1	2,08,312	44,000	2.75	1.4

Note: D = Demonstration & C= Check

Results of Demonstration 2012-13: The yield increase over check in the demonstration was 75% and CB ratio was 5.33 as against 3.0 which clearly indicate the benefits of scientific management in pond culture. Stocking of bigger sized fingerlings (12-15 cm) and extended culture period to 12 -14 months helped in realising good production (8 t/ha) and increased market price (Rs.100 /kg) with average weight of fish 1.25 kg. Farmers were encouraged to interact with Pangasius seed production centres in Andhra Pradesh for better rapport among industrial players.

Table 2: Yield and economics of FLD 2012-13

Cost of production (Rs./ha)		Yield (t/ha)		Gross Return (Rs./ha)		C:B	
D	C	D	C	D	C	D	C
1,50,000	50,000	8	2	8,00,000	1,50,000	5.3	3.0

Note: D = Demonstration & C= Check

Results of demonstration 2013-14: The market price was better for bigger sized fishes and this persuaded the farmers to go in for longer culture periods, although cost of production would increase. Nearly, 18-20 months of culture period had helped farmers to achieve record yield up to 25 t/ha (94% increase over check).

Table 3: Yield and economics of FLD 2013-14

Cost of production (Rs./ha)		Yield (t/ha)		Gross Return (Rs./ha)		C:B	
D	C	D	C	D	C	D	C
4,00,000	50,000	25	1.5	12,50,000	75,000	3.12	1.5

Note: D = Demonstration & C= Check

The selling price was unfortunately fallen to Rs.50 /kg perhaps due to reduced acceptance of Pangasius in local market. This fish was more suitable for oil fry preparation where as local population relishes curry preparation. They had increased the stocking ratio of Pangasius to nearly 60%. Hence, farmers were forced to find far off market places like Bhadravathi wherein price negotiation was settled to the above said average price irrespective of the size of fish. However, this arrangement was still beneficial for bigger farmers who could follow periodical harvest and stocking method.

Results of Demonstration 2016-17: Care was taken to stock bigger sized fingerlings which helped in increasing the yield to 92.5 % over the check. The average yield in demonstration was 8.5 t/ha in 12 months. There was no periodical harvesting and stocking practiced here. Hence, the total yield was lower compared to earlier years. Selling price was at an average of Rs.75/kg.

Table 4: Yield and economics of FLD 2016-17

Cost of production (Rs./ha)		Yield (t/ha)		Gross Return (Rs./ha)		C:B	
D	C	D	C	D	C	D	C
1,90,500	30,000	8.52	0.6	6,37,500	48,000	3.2	1.6

Note: D = Demonstration & C= Check

Discussion:

The above frontline demonstrations have helped in drawing the attention of farmers towards freshwater aquaculture. It is clearly observed that doubling the farmers income through fish culture is more than possible. They are convinced that the fish culture could help in enhancing their income. The area under fish culture had increased from 5 acres to 80 ha during the past 10 years in the district.

Farmers involved in paddy cultivation can certainly take a serious look at fish culture as an additional venture since water is easily available. Our KVK is continuously making efforts to motivate paddy farmers to take up fish culture however, the resistance to change still persists.

These demonstrations per se have made the farmers gain first hand knowledge on fish culture practices. Producing stunted fingerlings, interim harvest and stocking, trying lesser used feed items like dried azolla, tender grass, lucerne leaves, beaten and puffed rice, food wastes from hotels, hostels, schools, temples, wedding centres, flour mills etc are some managerial strategies innovated by our farmers. These have helped them in cutting the cost to an extent of 20%. Prolonged culture period has helped some farmers to manage the marketing situation.

Extension approaches have made number of farmers to take a look at fish culture as a career option including some young farmers. Average foot fall of farmers for enquiring fisheries related issues is around 5 per day in our KVK. The fish production through aquaculture has increased from 5000 t to 16,000 t in the district (Fisheries Statistics, Department of Fisheries, Davanagere, 2017-18).

Dwindling market price, varying market acceptance, ever increasing input costs especially the feed ingredients and water availability are crucial in determining the success of inland fish culture. Availability of right species with proper size in adequate number is essential in promoting the freshwater aquaculture. Karnataka state has inland fish seed demand approximately up to 51 crore and 30 crore get produced within the state wherein the rest comes from neighbouring states (Blue Revolution Guidelines, NFDB, 2018). Seed production and seed rearing areas do still require proper attention by all the concerned.

Farmers need constant encouragement from all angles viz., Governments, consumers, industries, bureaucrats to sustain interest in aquaculture. They also need to get updated about latest technologies in the sector so as to cope with the changing trends. KVKs, Universities, Institutes related to fisheries have to take this task of preparing farmers for changing demands. Therefore, in turn these institutes need to get updated and supported by the governments.

Species like Amur common carp, Pacu, Jayanthi Rohu, GIFT tilapia, pearl culture, freshwater prawn *Macrobrachium* are some of the recent additions to inland aquaculture in interior districts like ours. We have tried to demonstrate all of this except pearl culture with few farmers and success has been varying without consistency. *Pangasius* seed production is not there in Karnataka. Pacu seed production is not yet legalised. Culturing shrimp (*Penaeus japonicas*, *P. vennamei*) in changed salinity is still not commercially successful. Floating feed supply to interior places is not easy yet.

Information and hands on experience about aquaponics is minimal. Bioflocs and Recirculatory Aquaculture System are highly power and capital intensive and we are not ready yet to establish such advanced approaches. We have tried to work with semi biofloc and semi RAS technologies in modular surface tanks and waiting for the results.

Fresh fish sales are order of the day. Value added products especially in marine fishes are available in plenty. Value addition in the form of icing them immediately after harvest and enhancing the shelf life is perhaps the first step. Although many technologies are available for value addition for inland fishes, currently the supply for direct consumption is still below the demand. Apart from the fish produced in Davanagere district, additional requirement of 25-35 % of inland fishes is supplied from Chitradurga and Shivamogga districts. Catla, Rohu, Common carp, *Pangasius* and Roopchand (*Piaractus brachyomus*, Pacu, in small quantities) are the major

fishes transported and marketed in the district. Marine fishes from Karwar, Malpe and Goa are being sold in Davanagere city. Rural areas are predominantly depend on fresh catches of freshwater fishes from domestic producers. This trend shows that local market in the district gives good opportunity for fresh fish sales. Davanagere city alone consumes 2 tons of fish per day. Hence, production enhancement and selling fresh fish in the district is still having a lot of scope as there is a significant gap between demand and supply.

Inference

Philosophically, FISH has a great place in Indian epics and people worship it as an incarnation of Lord Vishnu Bhagavan. Biologically, fish goes back to ancient times and evolved through eras and continue to do so in the present times. Such a wonderful creature on this planet is providing a greater support to the mankind in several capacities, mainly as nutritious food. During this current crisis of human population explosion, fish turns out to be the best alternative food source to meet the ever increasing demand for food. Aquaculture is one effective technology that hold promise to provide food demand at the desired speed and level. Learning by China's experience, growing and eating fish would certainly give us some hope of sustainability of human race. Unique land of diversity, India must exhibit a special picture to the whole world that we are truly special and provide food to the needy regions in other parts of the world. This background of religion, spirituality and education must ensure realization of the goals set by NFDB (www.nfdb.gov.in).

Current proposals are making a new beginning in the district where the potential exists for greater expansion of aquaculture. We believe in success breeding success and it should infect the neighbour for higher success!! Once we are successful in demonstrating the positive effects of aquaculture, then many will be attracted towards this profession automatically. We wish to improve fish production and productivity in tanks, reservoirs and mainly in field ponds and contribute our bit to the national goal of 5 tonnes/ha/annum production level through the participation of farming community. Integrating various farming practices with fisheries would certainly widen the horizon of life and brighten our day with greater hope for better tomorrow.

Inland aquaculture of fishes has already shown the immense potential to improve the income of farmers. Integrating the fish culture practice in their regular farming system has proven to benefit them substantially.

District has thousands of farm ponds and each of them can be brought under extensive fish culture practice allowing the farmers to generate nutritious food and income simultaneously.

Here, challenges are opportunities for the prepared minds. Future is hopeful with inland aquaculture for farmers.

10.D. Give details of Innovative Methodology or Innovative Approach of Transfer of Technology developed and used during the year

- a) **WhatsApp group:** Started whatsApp group by name 'ICAR-Taralabalu Krishi Vigyan Kendra' which included Krishi Vigyan Kendra and AHRS scientists, Development Department personnel, farmers, NGO activities, company manufacturers among others. Innovative technologies are discussed and farmers problems are addressed immediately.
- b) Initiated bi-monthly meeting of 7 active **Farmers Producer Company Ltd.** in the district. The process facilitated exchange of ideas in business. Addressing the problems collectively etc.
- c) **Saturday Organic Bazaar:** Weekly Sandy held at Krishi Vigyan Kendra premises every Saturday helped organic farmers and consumers of organic produce as it is made available next door.
- d) **Kasa Rasa Abhiyana:** Campaign and Demonstration started for urban bio-waste degradation using microbial culture and use of compost in kitchen garden.

10.E. Give details of Indigenous Technical Knowledge practiced by the farmers in the KVK operational area which can be considered for technology development (in detail with suitable photographs) – Nil

S. No.	Crop / Enterprise	ITK Practiced	Purpose of ITK	Scientific Rationale

10 F. Technology Week celebration during 2019:

Period of observing Technology Week: From 27-11-2019 to 05-12-2019

Total number of farmers visited : 543

Total number of agencies involved : 08 (Agriculture Department, Horticulture Department, AH & VS, Sujala-III, ATMA Project, District Krishika Samaja, IAT, Vijayakarnataka)

Number of demonstrations visited by the farmers within KVK campus: 10

Other Details

Types of Activities	No. of Activities	Number of Farmers	Related crop/livestock technology
Gosthies	1	543	
Lectures organized	6		Kitchen Garden, Terrace garden, Bio-degradation of city waste, NICRA technologies, Soil and Water conservation, Integrated Dairy Farming, Medicinal plants and home made medicines
Exhibition	2		Krishi Vigyan Kendra technologies and bio-degradation of city waste.
Film show	--		
Fair	--		
Farm Visit	4		Krishi Vigyan Kendra instructional farm
Diagnostic Practicals	--		
Supply of Literature (No.)	5		Kitchen garden, Soil health cards, Dairy technologies
Supply of Seed (q)	--		
Supply of Planting materials (No.)	--		
Bio Product supply (Kg)	--		
Bio Fertilizers (q)	--		
Supply of fingerlings	--		
Supply of Livestock specimen (No.)	--		
Total number of farmers visited the technology week	543		

10 G. Recognition and Awards:

- **Best NICRA KVK Award:**

Our KVK received **Best NICR KVK Award 2019** during annual review meeting held at ICAR-CRIDA, Hyderabad during 4-6th June, 2019.

- **Best KVK Award:**

Our KVK received '**Pandit Deendayal Upadaya Rashtriya Krishi Vigyan Protsahan Puraskar-2018**' (Zone XI). Honourable Central Agriculture Minister Sri Narendra Singh Tomarji presented the award on 16-07-2019 at New Delhi.

PART XI – SOIL AND WATER TEST

11.1 Soil and Water Testing Laboratory

A. Status of establishment of Lab : Established

1. Year of establishment : 2011 (April)
2. List of equipments purchased with amount :

Sl. No	Name of the Equipment	Qty.	Cost	Status
1	Digital conductivity meter	01	12,860-00	Good
2	Digital pH meter	01	11,033-00	Good
3	Flame photometer	01	48,375-00	Good
4.	Spectrophotometer	01	42,570-00	Good
5.	Macro Block digestion system: KIL 08 L	01	96,212-00	Good
6.	Distillation system KJELO DIST EAS VA	01	1,77,268-00	Good
7.	Digital Burette Titration system	01	53,212-00	Good
8.	Quartz single distillation model with 4 l/h capacity	01	31,482-00	Good
9.	Quartz double distillation unit with 1.5 l/h capacity	01	64,130-00	Good
10.	Hot air oven	01	29,786-00	Good
11.	Hot plate Rectangular	01	6,784-00	Good
12.	Water bath	01	5,724-00	Good
13.	Digital Analytical balance capacity 210 g	01	69,960-00	Good
14.	Table top balance capacity 10 kg	01	6,890-00	Good
15.	Heating mantle capacity 250 ml	01	1,908-00	Good
16.	Kent water purifier	01	16,500-00	Good
	Total	15	6,74,694-00	

B. Details of samples analyzed since establishment of SWTL:

Details	No. of Samples analyzed	No. of Farmers benefited	No. of Villages
Soil Samples	9306	7437	5175
Water Samples	7267	5568	4776
Plant samples	--	--	--
Manure samples	--	--	--
Others (specify)	--	--	--
Total	16573	13005	9951

C. Details of samples analyzed during the 2019:

Details	No. of Samples analyzed	No. of Farmers benefited	No. of Villages
Soil Samples	907	723	654
Water Samples	765	645	571
Plant samples	--	--	--
Manure samples	--	--	--
Others (specify)	--	--	--
Total	1672	1368	1225

11.2 Mobile Soil Testing Kit - Nil

A. Date of purchase and current status

Mobile Kits	Date of purchase	Current status
1.		
2.		

B. Details of soil samples analyzed during 2019 and since establishment with Mobile Soil Testing Kit: Nil

	Progress during 2019	Cumulative progress
Samples analyzed (No.)		
Farmers benefited (No.)		
Villages covered (No.)		

11.3 Details of soil health cards issued based on SWTL & Mobile Soil Testing Kit during 2019: Nil

Particulars	Date (s)	Villages (No.)	Farmers (No.)	Samples analyzed (No.)	Soil health cards issued (No.)
SWTL					
Mobile Soil Testing Kit					

11.4 World Soil Health Day celebration

Sl. No.	Farmers participated (No.)	Soil health cards issued (No.)	VIPs (MP/ Minister/MLA attended (No.)	Other Public Representatives participated	Officials participated (No.)	Media coverage (No.)
1	60	30	--	3	15	1

PART XII. IMPACT

12.A. Impact of KVK activities (Not restricted for reporting period).

Name of specific technology/skill transferred	No. of participants	% of adoption	Change in income (Rs.)	
			Before (Rs./Unit)	After (Rs./Unit)

NB: Should be based on actual study, questionnaire/group discussion etc. with ex-participants.

12.B. Cases of large scale adoption (Please furnish detailed information for each case with suitable photographs)

12.C. Details of impact analysis of KVK activities carried out during the reporting period

PART XIII - LINKAGES

13A. Functional linkage with different organizations

Name of organization	Nature of linkage
UAHS, Shivamogga	Technologies, Trainings, Farm trials
IIHR, Bengaluru	Technologies
UAS (Bengaluru), UAS-(Dharwad), UAS (Raichur), KUAFSU (Bengaluru), UHS (Bagalkot)	Technologies
Department of Agriculture, Horticulture, AH & VS	Trainings, Field visits
Dept. of Animal Husbandry and Veterinary Science, Davanagere	Conducting Animal Health Camps and Extension Functionaries Training Programme.
Techno Serve, Davanagere	Conducting animal health Camps, Training programmes and Method Demonstration.

KWDP-II Sujala III, Department of Horticulture	Diagnostic field visits, Trainings.
Farmers Producer Company Ltd	Interactive meetings, Trainings.
RCF Ltd	Collaborative Programmes like trainings/ seminars.
MANAGE, Hyderabad	Trainings, DAESI
IAT and Krishika Samaja	Collaborative Programmes like trainings, Workshops
Tota Uthpanna Marata Co-Operative Society, Channagiri	Training related to horticultural technologies
ATMA	Field visits, Trainings, Krishi Abiyana
Karnataka State Biofuel Development Board	Sponsored project in ongoing since 2011
CRIDA, Hyderabad	Climate resilient technologies for NICRA project.
ASCI, New Delhi	Skill development training
PKVY	Project on organic farming

NB The nature of linkage should be indicated in terms of joint diagnostic survey, joint implementation, participation in meeting, contribution received for infrastructural development, conducting training programmes and demonstration or any other

13B. List of special programmes undertaken by the KVK and operational now, which have been financed by State Govt./Other Agencies

Name of the scheme	Date/ Month of initiation	Funding agency	Amount (Rs.)
NICRA	17-01-2011	ICAR	7,80,000/-
Bio-energy Information and Demonstration Centre	22-3-2011	Karnataka State Bio-energy Development Board, GoK	--
Sujala-III,	February 2019	Department of Agriculture	5,40,000/-
PKVY	August 2019	ATARI, Bengaluru	3,30,000/-
ASCI	August 2018	RKVY	4,05,800/-

13C. Details of linkage with ATMA

Coordination activities between KVK and ATMA

S. No.	Programme	Particulars	No. of programmes attended by KVK staff	No. of programmes Organized by KVK	Other remarks (if any)
01	Meetings	Taluk level programme implementation meetings	02		
02	Research projects				
03	Training programmes				
04	Demonstrations				
05	Extension Programmes				
	Kisan Mela	Organic and millet mela	01		
	Technology Week	Technology week		01	
	Exposure visit				
	Exhibition				
	Soil health camps				
	Animal Health Campaigns				
	Others	Rabi mela		01	
06	Publications				
	Video Films				
	Books				
	Extension Literature				
	Pamphlets				
	Others (Pl. specify)				
07	Other Activities (Pl. specify)				
	Watershed approach				
	Integrated Farm Development				
	Agri-preneurs development				

13D. Give details of programmes implemented under National Horticultural Mission - NIL

S. No.	Programme	Nature of linkage	Funds received if any Rs.	Expenditure during the reporting period in Rs.	Constraints if any

13E. Nature of linkage with National Fisheries Development Board - NIL

S. No.	Programme	Nature of linkage	Funds received if any Rs.	Expenditure during the reporting period in Rs.	Remarks

13F. Details of linkage with RKVY

S. No.	Programme	Nature of linkage	Funds received if any Rs.	Expenditure during the reporting period in Rs.	Remarks
1	Skill development trainings (2 Nos.)	Sponsorship	405800/-	--	Trainings – on going

13G. Kisan Mobile Advisory Services

Month	Message type (Text/Voice)	SMS/voice calls sent (No.)						Total SMS/Voice calls sent (No.)	Farmers benefitted (No.)
		Crop	Livestock	Weather	Marketing	Awareness	Other enterprises		
January	--	--	--	--	--	--	--	--	
February	--	--	--	--	--	2	--	11508	
March	--	--	--	--	--	--	--	--	
April	--	--	--	--	--	--	--	--	
May	--	--	--	--	--	--	--	--	
June	--	--	--	--	--	2	--	11515	
July	--	--	--	--	--	--	--	--	
August	--	--	--	--	--	1	--	11522	
September	--	--	--	--	--	2	--	11525	
October	--	--	--	--	--	--	--	--	
November	--	--	--	--	--	--	--	--	
December	--	--	--	--	--	--	--	--	
Total	--	--	--	--	--	7	--	11525	

PART XIV- PERFORMANCE OF INFRASTRUCTURE IN KVK

14A. Performance of demonstration units (other than instructional farm)

Sl. No.	Demo Unit	Year of establishment	Area (ha)	Details of production			Amount (Rs.)		Remarks
				Variety	Produce	Qty.	Cost of inputs	Gross income	

14B. Performance of instructional farm (Crops) including seed production

Name of the crop	Date of sowing	Date of harvest	Area (ha)	Details of production			Amount (Rs.)		Remarks
				Variety	Type of Produce	Qty.	Cost of inputs	Gross income	
Cereals									
Pulses									
Red gram	12-07-2019	-	1	BRG-5	Seeds	-			Yet to harvest
Oilseeds									
Fibers									
Spices & Plantation crops									
Floriculture									
Fruits									
Vegetables									
Others (specify)									
Green Manure Crop (Velvet Beans)	07-06-2019	04-12-2019	1	-	Seeds	9 q 84 kg	20,000-00	1,18,080-00	Sold at Rs. 120/kg
Mixed fruit orchard	2019		0.5	-	-		13,832-00	-	Vegetative growth
Mango varietal plot	2018		0.5				5,812-00		Vegetative growth
Lime plants plot	2018		0.25	-	-	-	2,147-00		Vegetative growth
Jamun plant plot	2018		0.25	-	-	-	3,000-00		Vegetative growth
Arecanut multi spacing plot	2017		0.25	-	-	-	4,920-00		Vegetative growth

Ultra High Density Mango plot	2018		0.5	-	-	-	14,920-00		Vegetative growth
Jack fruit varietal plot	2018		0.25	-	-	-	5,511-00		Vegetative growth

14C. Performance of production Units (bio-agents / bio pesticides/ bio fertilizers etc.,)

Sl. No.	Name of the Product	Qty	Amount (Rs.)		Remarks
			Cost of inputs	Gross income	
1	Azolla	0.24 q		480	
2	Phosphobacteria (Solid)	0.25 q		2500	
3	Rhizophos	0.17 q		1700	
4	Arka Microbial Consortia	243 l		63180	
5	Compost Prachodak	536 Bag		80280	
6	Metarizium	39 l		15600	
7	Neem cake	0.05 q		150	
8	Pseudomonas	24 l		8400	
9	<i>Trichoderma harzianum</i> (Solid)	1.15 q		9775	
10	<i>Trichoderma harzianum</i> (Liquid)	129 l		38700	
11	Earthwom	0.4845 q		14535	
12	Banana Special	13.9 q		278000	
13	Vegetable Special	0.02 q		300	
14	Vermicompost	134.655 q		134655	
15	Yellow sticky traps	40 No.		1400	

14D. Performance of instructional farm (livestock and fisheries production)

Sl. No	Name of the animal / bird / aquatics	Details of production			Amount (Rs.)		Remarks
		Breed	Type of Produce	Qty.	Cost of inputs	Gross income	

14E. Utilization of hostel facilities

Accommodation available (No. of beds) - 36

Months	No. of trainees stayed	Trainee days (days stayed)	Reason for short fall (if any)
January			
February	33	5	--
March			
April			
May			
June			
July	34	2	--
August	22	6	--
September			
October			
November			
December	03	3	

14F. Database management

S.No	Database target	Database created
1	Data base on soil test, water test, radio talk, guest lecture and other extension activities including FLD and OFTs.	Updating has continued with this data base

14G. Details on Rain Water Harvesting Structure and micro-irrigation system: NIL

Amount sanction (Rs.)	Expenditure (Rs.)	Details of infrastructure created / micro irrigation system etc.	Activities conducted				Quantity of water harvested in '000 litres	Area irrigated / utilization pattern
			No. of Training programmes	No. of Demonstration s	No. of plant materials produced	Visit by farmers (No.)		

PART XV – SPECIAL PROGRAMMES

15.1 Paramparagath Krishi Vikas Yojana (PKVY)

Sl No.	Name of cluster village	Initial soil fertility status (Average of cluster village)				Facilities created for organic source of manure	Name of Crops cultivated	Variety	Organic inputs applied including bio- agents and botanicals treatment	Yield (q/ha)	Economics	
		Aval. N	Aval. P	Aval. K	OC %						Cost of cultivation (Rs/ha)	Net returns (Rs/ha)
1	Rameshwara	248	34.5	189	0.35	<ul style="list-style-type: none"> • Vermicompost pits (on going) • Azolla Pits(On going) 	Selected farmers and initiated the treatment					

15.2 District Agriculture Meteorological Unit (DAMU): Nil

Sl No.	Agro advisories			Farmers awareness programmes	
	No of Agro advisories generated	No of farmers registered for agro advisories	No of farmers benefitted	No of programmes	No of farmers benefitted
1					
2					
3					
4					

15.3 Fertilizer awareness programme 2019

State	Name of KVK	Details of Activities/programme Organised	Number of Chief Guests	No. of Farmers attended program	Total participants
Karnataka	ICAR-Taralabalu Krishi Vigyan Kendra	Lecture on efficient utilization on fertilizers. Exhibition stall by KVK and RCF Ltd.,	07	252	259

15.4 Seed Hub: Nil

Crops	Variety	Year of release	Production				Remarks
			Target (q)	Area (ha.)	Actual Production (q)	Category (FS/CS)	

15.5 CFLD on Oilseed :: Nil

15.6 CFLD on Pulses :

Sl. No	Crop	Season	Variety		Varietal Characteristics (Demo)	Technology Demonstrated	CFLD's Allocated/Targeted		CFLD's Achievements		Clusters
			Demo	Check			Area (ha)	Demos (No.)	Area (ha)	Demos (No.)	
1	Redgram (2018-19)	Kharif	BRG-5			Integrated Crop Management in Redgram	20	50	20	50	Santhebennur
2	Bengalgram (2018-19)	Rabi	JAKI-9218			Integrated Crop Management in Bengalgram	16	40	16	40	Rangapura
3	Redgram (2019-20)	Kharif	BRG-5			Integrated Crop Management in Redgram	30	75	41.8	107	Ramathirtha & Rameshwara
4	Bengalgram (2019-20)	Rabi	JAKI-9218			Integrated Crop Management in Bengalgram	20	50	40	20	Rameshwara

Sl. No	Crop	Yield (q/ha)		% Increase	Yield gap (q/ha) over check	Gross cost Rs/ha		Gross Returns Rs/ha		Net>Returns (Rs/ha)			B:C Ratio	Net-Return increase (%)	Remarks (if any)	District Average Yield (q/ha)	State Average Yield (q/ha)
		Demo	Check			Demo	Check	Demo	Check	Demo	Check	Demo					
1	Redgram (2018-19)	11.86	9.28	20.78	2.58	21322	20338	47456	37128	26134	16790	2.24	1.83	55.65	-	12.14	10.51
2	Bengalgram (2018-19)	9.71	7.93	22.44	1.78	23926	23969	53405	43628.8	29479	19660	2.23	1.82	49.94	-	10.00	9.33
3	Redgram (2019-20)														Ongoing		
4	Bengalgram (2019-20)														Ongoing		

15.7 Krishi Kalyan Abhiyan: Nil

Type of Activity	Date(s) conducted	No. of farmers (General)			No. of farmers SC / ST			No.of extension personnel		
		Male	Female	Total	Male	Female	Total	Male	Female	Total

15.8 Micro-Irrigation: Nil

Type of Activity	Date(s) conducted	No. of farmers (General)			No. of farmers SC / ST			No.of extension personnel		
		Male	Female	Total	Male	Female	Total	Male	Female	Total

PART XVI - FINANCIAL PERFORMANCE

16A. Details of KVK Bank accounts

Bank account	Name of the bank	Location	Branch code	Account Name	Account Number	MICR Number	IFSC Number
With Host Institute							
With KVK	State Bank of India	Davanagere	05624	ICAR-Taralabalu Krishi Vigyan Kendra	30166599498	577002002	SBIN0005624

16 B1. Utilization of KVK funds during the year 2018-19(Rs. in lakh)

S. No.	Particulars	Sanctioned	Released	Expenditure
A. Recurring Contingencies				
1	Pay & Allowances	128.00	127.89	125.79
2	Traveling allowances	0.75	0.49	0.39
3	Contingencies			
<i>A</i>	Stationery, telephone, postage and other expenditure on office running, publication of Newsletter and library maintenance (Purchase of News Paper & Magazines)	2.31	2.31	2.31
<i>B</i>	POL, repair of vehicles, tractor and equipments	1.80	1.80	1.80
<i>C</i>	Meals/refreshment for trainees (ceiling upto Rs.40/day/trainee be maintained)	1.00	1.00	1.00
<i>D</i>	Training material (posters, charts, demonstration material including chemicals etc. required for conducting the training)	0.25	0.25	0.25
<i>E</i>	Frontline demonstration except oilseeds and pulses (minimum of 30 demonstration in a year)	3.20	3.10	3.10
<i>F</i>	On farm testing (on need based, location specific and newly generated information in the major production systems of the area)	0.40	0.30	0.30
<i>G</i>	Training of extension functionaries	0.14	0.14	0.14
<i>H</i>	Extension Activities	0.50	0.50	0.50
<i>I</i>	Farmers Field School (FFS)	0.30	0.28	0.28
<i>J</i>	Mtc of Soil, Plant & Water Testing Laboratory	0.30	0.25	0.25
<i>K</i>	Maintenance of Buildings	0.50	0.50	0.50
<i>L</i>	Library	0.05	0.05	0.05
TOTAL (A)		139.50	138.86	136.66

B. Non-Recurring Contingencies			
1	Works		
2	Equipment including SWTL & Furniture		
3	Vehicle (Four wheeler/Two wheeler, please specify)		
4	Library (Purchase of assets like books & journals)		
TOTAL (B)		0.00	0.00
C. REVOLVING FUND		0.00	0.00
GRAND TOTAL (A+B+C)		139.50	138.86

16 B2. Utilization of KVK funds during the year 2019-20 [Up to Dec 2019] (Rs. in lakh)

S. No.	Particulars	Sanctioned	Released	Expenditure
A. Recurring Contingencies				
1	Pay & Allowances	147.20	120.46	98.84
2	Traveling allowances	0.75	0.50	0.48
3	Contingencies			
<i>A</i>	Stationery, telephone, postage and other expenditure on office running, publication of Newsletter and library maintenance (Purchase of News Paper & Magazines)	2.25	1.60	2.37
<i>B</i>	POL, repair of vehicles, tractor and equipments	1.50	1.05	1.33
<i>C</i>	Meals/refreshment for trainees (ceiling upto Rs.40/day/trainee be maintained)	1.00	0.70	0.33
<i>D</i>	Training material (posters, charts, demonstration material including chemicals etc. required for conducting the training)	0.25	0.19	0.25
<i>E</i>	Frontline demonstration except oilseeds and pulses (minimum of 30 demonstration in a year)	2.65	2.00	1.77
<i>F</i>	On farm testing (on need based, location specific and newly generated information in the major production systems of the area)	0.52	0.35	0.23
<i>G</i>	Training of extension functionaries	0.25	0.15	0.04
<i>H</i>	Extension Activities	0.25	0.15	0.25
<i>I</i>	Farmers Field School (FFS)	0.25	0.15	0.15
<i>J</i>	Nutrigardens	0.25	0.15	0.08
<i>K</i>	Maintenance of Buildings			
<i>L</i>	Library	0.05	0.04	0.04
TOTAL (A)		157.17	127.49	106.15
B. Non-Recurring Contingencies				
1	Works			
2	Equipment including SWTL & Furniture			

3	Vehicle (Four wheeler/Two wheeler, please specify)			
4	Library (Purchase of assets like books & journals)			
TOTAL (B)		0.00	0.00	0.00
C. REVOLVING FUND		0.00	0.00	0.00
GRAND TOTAL (A+B+C)		157.17	127.49	106.15

16C. Status of revolving fund (Rs. in lakh) for the last three years

Year	Opening balance as on 1 st April	Income during the year	Expenditure during the year	Net balance in hand as on 1 st April of each year
April 2016 to March 2017	7.905	42.129	41.585	8.449
April 2017 to March 2018	8.449	36.047	41.837	2.659
April 2018 to March 2019	2.659	67.723	54.639	15.743

17. Details of HRD activities attended by KVK staff

Name of the staff	Designation	Title of the training programme	Institute where attended	Dates
Mr H.M. Sannagoudra	SMS (Soil Science)	Refreshment training programme for LRI master trainers	ICAR-NBSSLUP, Bengaluru	20-04-2019
Mr. B.O. Mallikarjuna	SMS (Agronomy)	Advances in Integrated Watershed Management for Rural Livelyhood	ICAR-IISWCRC, Udagamandalam	02-12-2019 to 13-12-2019

18. Please include any other important and relevant information which has not been reflected above.

18 A. Farmers Field School

CROP	Groundnut (G2 52) - 2018-19
Technology	Integrated Pest Management in Groundnut
Area	1 acre
Collaborator	Mrs Savithramma
Participants	25
Facilitator	SMS (Agronomy, Soil Science, SS &H)
Village	Musturu, Jagaluru tq.

Sl. No.	DATE	Activities
1	17-7-2018	Seed treatment with biofertilizers and sowing
2	6-8-2018	Integrated weed and nutrient management
3	31-8-2018	Importance of pest and disease management
4	26-9-2018	Post harvest management and yield losses

Name of the technology demonstrated	Variety	Farming situation	Yield (q/ha)		% Increase	Economics of demonstration (Rs./ha)				Economics of check (Rs./ha)			
			Demo	Check		Gross Cost	Gross Return	Net Return	BCR	Gross Cost	Gross Return	Net Return	BCR
Integrated Pest Management in Groundnut	G2 52	Rainfed	17.8	8.3	17.09	28750	43912	15162	1.52	28000	40587	12587	1.44

CROP	RICE - 2019-20
Technology	Integrated Pest Management in Rice
Area	1 acre
Collaborator	Sri. Guddappa
Participants	25
Facilitator	SMS (Agronomy, Soil Science, SS &H)
Village	Kadaranahalli, Channagiri taluk

Sl. No.	DATE	Activities
1	29-05-2019	Soil health camp
2	16-09-2019	Seed treatment with bio-fertilizers and transplanting
3	15-10-2019	Integrated Nutrient Management
4	05-11-2019	Integrated Pest Management (Pheromone trap installation)
5	29-11-2019	Integrated Disease Management
6	20-12-2019	Field day

Name of the technology demonstrated	Variety	Farming situation	Yield (q/ha)		% Increase	Economics of demonstration (Rs./ha)				Economics of check (Rs./ha)			
			Demo	Check		Gross Cost	Gross Return	Net Return	BCR	Gross Cost	Gross Return	Net Return	BCR
Integrated Pest Management in Rice	RNR	Irrigated	56.25	53.25	5.633	64625	98437.5	33812	1.52	65950	93187.5	27237	1.41

Late season: Paddy transplanted during the month of September.

Crop harvested during the December.

18.B. Others:

- **Flower Show:** Participated in the 10 days 'Flower Show' organized by Department of Horticulture, Davanagere from 26-1-2019 to 4-2-2019.
- **Organic and Millet Mela:** Participated in the 2 days 'Organic and Millet Mela' organized by Department of Agriculture, Davanagere from 12-1-2019 to 13-1-2019:
- **Skill Development Training:** Two Skill Development Trainings Sponsored by Agriculture Skill Council of India, New Delhi were organized on 'Coconut Tree Climbing and Plant Protection Management' (21 days, 21 youth, 16-1-2019 to 5-2-2019) and 'Dairy Enterprise Training' (30 days, 20 youth, 21-1-2019 to 19-2-2019)
- **Rabi Mela:** Rabi Mela was organized at Narasapura village, Davanagere tq. in collaboration with Department of Agriculture, ATMA project, Davanagere on 12-2-2019.
- Live Telecast of 'Pradhan Mantri Kisan Samman Nidhi' programme inauguration by Honorable Prime Minister Sri Narendra Modi was organized on 24-2-2019. Sri G.M. Siddeshwara, Member of Parliament and Sri S.A. Ravindranath, MLA participated on the occasion.
- **Special Days Celebration:**
 - National Productive Week: National Productivity Week was celebrated in collaboration with 'National Productivity Council of India; New Delhi on the theme 'Sustainable Productivity and circular economy' from 12-02-2019 to 18-02-2019 by organizing awareness programme.
 - National Science Day was celebrated at DATC, Kadajji on 28-02-2019.
 - International Women Day was celebrated on 08-02-2019.
 - World Water Day on 21-03-2019.
 - World Water Day was celebrated at Naraganahalli, Davanagere tq. in collaboration with farmers organizations on 22-03-2019.
 - World No Tobacco Day on 31-05-2019
 - World Environment Day on 05-06-2019.
 - International Yoga Day was celebrated on 21-06-2019.
 - Parthenium eradication week was celebrated during 16-22 August 2019.
 - World Food Day and National Kisan Mahila Diwas on 16-10-2019.
 - Women in Agriculture Day on 04-12-2019.
 - World Soil Health Day on 05-12-2019.
 - Kisan Samman Diwas on 23-12-2019.

- Annual progress review meeting was held at ICAR-KVK, Mudigere during 14-16th May, 2019. Dr. Devaraja T.N., Senior Scientist and Head, presented Annual Progress report of 2018-19.
- Sale of safely ripened mango directly from producer to consumer was organised during 11th and 12th May, 2019. IN all 1960 kg mango sold (Alphanso, Kesar, Banishan, Raspuri, Malgoa)
- Bi-monthly meeting for active FPOs in the district was organised to Co-ordinate among FPOs input and out business, business plans were discussed in the meeting (22-01-2019, 18-03-2019, 11-05-2019, 08-07-2019).
- Orientation programmes for 2nd PUC students was organised on May 6th and 8th 2019 to get admissions into agricultural universities (300 students participated).
- Shraddhanjali programme for Dr. M.K. Renukarya, Member, TRDF was organised on 21-06-2019 who passed away on 16-06-2019.

- **Best NICRA KVK Award:**

Our KVK received **Best NICR KVK Award 2019** during annual review meeting held at ICAR-CRIDA, Hyderabad during 4-6th June, 2019. Mr. Mallikarjuna B.O., SMS (Agronomy) and Dr. Devaraja T.N. (Senior Scientist Cum Head) received best poster presentation award on the occasion.

- Soil health campaigns were organised at Kadarahalli, Channagiri taluk on 29-05-2019 at Ramatheertha, Harihara taluk on 08-06-2019.
- Animal Health campaigns were organised in collaboration with AH & VS, Davanagere at Ramatheertha, Harihara taluk on 08-06-2019.
- **Best KVK Award:**
Our KVK received '**Pandit Deendayal Upadhyaya Rashtriya Krishi Vigyan Protsahan Puraskar-2018 (Zone-XI)**'. Central Agriculture Minister Sri Narendra Singh Tomar present the award on 16-07-2019 at New Delhi.
- Awareness programme on **Management of Fall Army Worm** was organised in collaboration with South Asia Bio-technology centre, New Delhi and UAHS, Shivamogga on 26-06-2019.
- Awareness programme on **Management of Fall Army Worm** was organised in collaboration with ICAR-NBAIR, Bangalore on 22-08-2019. The programme was inaugurated by Dr. M.J. Chandregowda, Director, ICAR-ATARI, Bengaluru.
- Live telecast of inauguration of 'National Animal Disease Control Programme' by Honourable Prime Minister Sri Narendra Modi was organised on 12-09-2019 in collaboration with AH & VS, Davanagere.
- **Jal Shakti Mela:** Jal Shakti Melas were organised in collaboration with all the development departments at KVK on 03-09-2019, at Jagalur on 19-09-2019), at Devarahalli, Channagiri taluk on 05-10-2019 and at Channagiri on 21-10-2019.
- **Swachha Bharath Abhiyan** was celebrated 12-09-2019 to 27-10-2019 on the theme '**No use of single use plastic**'.

- Two day **Krishi Mela** was organised on the occasion of Shradhanjali Programme of Late Taralabalu Jagadguru Sri Sri Shiva Kumara Shivacharya Mahaswamiji on 23-24, September 2019 in collaboration with development Department.
- '**Mass planting of tree species**' was organised on 17-09-2019 in collaboration with IFFCO Ltd.
- Nutrigarden programme was organised during 16th-20th September 2019 (90 Urban women households).
- Fertilizer awareness programme was organised on 22-10-2019 in collaboration with Department of Agriculture Davanagere.
- Training on Nutrition garden for 50 teachers sponsored by education department was organised on 24-10-2019.
- Attended and presented 7 scientific papers in the International Conference on Extension for strengthening Agricultural Research and Development at ICAR-JSS, KVK, Mysore and Dr. Devaraja T.N. received best oral paper presentation award; Basavanagowda M.G., SMS (Horticulture) and Mallikarjuna B.O., SMS (Agronomy) received best poster presentation award.