District Agricultural Profile -2012

Davanagere- District

Area	5975.97 sq. km
Rural population	12,47,954
Net sown area	492516.2 ha
Soil Type	1. Red Sandy Soil (Harihara, Channagiri, Jagalur, Davanagere Tq.). 2. Deep to Medium Deep Black Soil (Jagalur, Davanagere, Harapanahalli). 3. Mixed Red and Black Soil (Honnali, Jagalur, Harapanahalli). 4. Sandy Loam Soil (Harapanahalli, Davanagere).
Climatic Zone	1. Northern Dry Zone (Zone III) 2. Central Dry Zone (Zone IV) 3. Southern transitional Zone (Zone VII)
Major crops	Ragi, Maize, Sorghum, Minor millets, Red gram, Black gram, Green gram, Bengal gram, Groundnut, Sunflower, Coconut, Mango, Cotton, Onion

LIVESTOCK POPULATION	
	No.
Cattle	395123
Buffalo	223601
Goats	153940
Sheep	333461
Horses & Ponies	63
Mules	-
Donkeys	46
Pigs	6493
Fowls	385203
Ducks	7000
Other Poultries	1661180
Rabbits	170
Total	**3166280**
BREEDABLE CATTLE & BUFFALOES	
Female Cattle Young stock	46021
Adults	187607
Total	**233628**
Female Buffalo Young stock	29493
Adults	162636
Total	**192129**
Male Indigenous	134661
Cross Bred	6173
Total	**140834**
Female Indigenous	111258
Cross Bred	76349
Total	**187607**
Total Indigenous	283752
Cross Bred	111371
Total	**395123**

Major Field crops

Year	Crop	Area (1000 ha)	Production (1000 mts)	Yield (t/ha.)
2001-02	Rice	106.83	526.45	4.92
	Jawar	33.58	48.24	1.43
	Ragi	35.66	50.07	1.4
	Maize	33.58	48.24	1.43
	Bajra	0.51	0.22	0.42
	Foxtail millets	1.48	0.66	0.45
	Redgram	7.87	7.58	0.96
	Horsegram	5.17	2.06	0.39
	Blackgram	0.37	0.13	0.37
	Cowpea	1.83	0.34	0.18
	Avare	2.16	0.68	0.31
	Greengram	1.49	0.29	0.2
	Groundnut	18.58	20.62	1.11
	Seasamum	1.07	0.57	0.53
	Sunflower	10.24	4.77	0.46
	Castor	0.34	0.25	0.73
	Niger	0.68	0.2	0.29
	Mustard	0.08	0.02	0.21
	Cotton	10.15	9.01	0.15
	Sugarcane planted	22.29	2181.56	98
	Tobaco (UFC)	1.82	1.15	0.63
2002-03	Rice	76.94	334.98	4.35
	Jawar	37.98	52.65	1.38
	Ragi	30.03	23.16	0.77
	Maize	129.49	197.93	1.52
	Bajra	0.4	0.14	0.35
	Foxtail millets	0.84	0.39	0.47
	Redgram	6.34	4.82	0.76
	Horsegram	8.97	5.95	0.66
	Blackgram	0.79	0.09	0.12
	Cowpea	4.23	0.73	0.17
	Avare	1.84	0.57	0.31
	Greengram	3.15	0.35	0.11
	Groundnut	19.29	16.12	0.83
	Seasamum	2.25	1.2	0.53
	Sunflower	15.53	6.0	0.39
	Castor	0.24	0.22	0.92
	Niger	0.88	0.26	0.3
	Mustard	0.1	0.02	0.21
	Cotton	4.66	4.32	0.16
	Sugarcane planted	20.0	2146.14	107
	Tobaco (UFC)	1.12	0.4	0.34

2003-04	Rice	58.72	291.67	5.0
	Jawar	46.78	45.9	0.98
	Ragi	45.22	43.0	0.95
	Maize	110.91	156.61	1.41
	Bajra	0.9	0.54	0.6
	Foxtail millets	0.62	0.28	0.45
	Redgram	5.38	2.54	0.45
	Horsegram	8.77	5.49	0.63
	Blackgram	0.57	0.29	0.51
	Cowpea	4.06	0.74	0.18
	Avare	1.65	0.48	0.29
	Greengram	1.75	0.16	0.09
	Groundnut	19.19	16.6	0.87
	Seasamum	0.78	0.17	0.22
	Sunflower	25.2	10.35	0.41
	Castor	0.23	0.2	0.9
	Niger	0.57	0.17	0.29
	Mustard	0.14	0.03	0.21
	Cotton	3.59	2.96	0.14
	Sugarcane planted	8.15	696.83	86
	Tobaco (UFC)	0.98	0.49	0.5
2004-05	Rice	106.55	6075.78	5.7
	Jawar	38.92	62.88	1.62
	Ragi	23.1	34.3	1.49
	Maize	169.51	525.18	3.1
	Bajra	0.6	0.33	0.55
	Foxtail millets	0.39	0.14	0.36
	Redgram	5.84	7.17	1.23
	Horsegram	4.53	1.93	0.43
	Blackgram	0.08	0.02	0.24
	Cowpea	2.53	0.61	0.24
	Avare	1.52	0.48	0.32
	Greengram	5.49	0.36	0.07
	Groundnut	20.75	18.59	0.9
	Seasamum	3.1	4.17	1.34
	Sunflower	14.65	8.15	0.56
	Castor	0.22	0.19	0.87
	Niger	0.54	0.16	0.3
	Mustard	0.22	0.05	0.22
	Cotton	6.87	12.61	0.31
	Sugarcane planted	7.0	126.54	81
	Tobaco (UFC)	1.62	1.2	0.74

2005-06	Rice	104.63	563.40	5.39
	Jawar	28.87	51.60	17.88
	Ragi	23.18	48.7	2.10
	Maize	173.37	619.7	3.58
	Bajra	0.56	0.35	0.62
	Foxtail millets	0.39	0.14	0.36
	Redgram	8.93	7.14	0.8
	Horsegram	5.26	12.82	2.44
	Blackgram	0.22	0.09	0.4
	Cowpea	2.41	0.63	0.26
	Avare	1.94	0.58	0.3
	Greengram	4.86	2.16	0.45
	Groundnut	26.07	31.96	1.23
	Seasamum	2.47	1.07	0.43
	Sunflower	22.15	14.36	0.65
	Castor	0.99	1.33	1.35
	Niger	1.06	0.31	0.3
	Mustard	0.26	0.06	0.22
	Cotton	5.29	6.51	0.21
	Sugarcane planted	12.29	1340.51	109
	Tobaco (UFC)	1.12	0.67	0.59
2006-07	Rice	106.29	598.99	5.64
	Jawar	31.83	27.4	0.86
	Ragi	12.25	14.25	1.16
	Maize	183.77	298.02	1.62
	Bajra	0.12	0.04	0.35
	Foxtail millets	0.51	0.34	0.67
	Redgram	7.34	5.23	0.71
	Horsegram	4.11	1.66	0.4
	Blackgram	0.11	0.05	0.44
	Cowpea	2.57	0.63	0.25
	Avare	1.4	0.43	0.31
	Greengram	2.66	0.67	0.25
	Groundnut	13.19	13.83	1.05
	Seasamum	1.8	0.78	0.43
	Sunflower	20.26	10.05	0.5
	Castor	0.87	0.5	0.58
	Niger	0.47	0.14	0.3
	Mustard	0.2	0.04	0.22
	Cotton	14.94	19.72	0.21
	Sugarcane planted	16.31	1794.32	109
	Tobaco (UFC)	1.0	0.47	0.93

2007-08	Rice	22.86	131.58	5.76
	Jowar	52.98	76.0	1.44
	Ragi	15.51	23.14	1.49
	Maize	199.46	837.27	4.2
	Bajra	1.02	0.71	0.7
	Foxtail millets	0.7	0.35	0.5
	Redgram	8.91	8.91	1.0
	Horsegram	8.63	5.77	0.67
	Blackgram	0.65	0.37	0.48
	Cowpea	3.77	0.73	0.19
	Avare	1.9	0.71	0.37
	Greengram	2.65	1.11	0.42
	Groundnut	19.15	20.88	1.09
	Seasamum	1.81	1.36	0.75
	Sunflower	22.87	14.77	0.65
	Castor	0.79	0.75	0.94
	Niger	0.66	0.2	0.3
	Mustard	0.18	0.04	0.22
	Cotton	4.83	5.37	0.19
	Sugarcane planted	8.0	919.89	115.0
	Tobaco (UFC)	0.23	0.12	0.55
2008-09	Rice	62.83	326.74	5.2
	Jowar	17.19	32.97	1.91
	Ragi	15.91	23.34	1.49
	Maize	175.65	702.97	4.00
	Bajra	0.54	0.38	0.7
	Foxtail millets	0.52	0.26	0.5
	Redgram	8.05	8.07	1.0
	Horsegram	1.12	0.95	0.85
	Blackgram	0.16	0.04	0.5
	Cowpea	1.38	0.59	0.43
	Avare	1.48	0.59	0.39
	Groundnut	16.85	160.63	0.95
	Seasamum	1.45	1.08	0.71
	Sunflower	8.56	8.77	1.02
	Castor	0.66	0.62	0.94
	Niger	0.59	0.15	0.26
	Mustard	0.26	0.05	0.21
	Cotton	11.01	15.89	0.24
	Sugarcane planted	5.83	670.68	115
	Tobaco (UFC)	0.13	0.07	0.55

2009-10	Rice	113.95	625.82	5.49
	Jowar	26.84	42.82	1.59
	Ragi	10.36	15.53	1.49
	Maize	186.82	745.8	3.92
	Bajra	0.64	0.45	0.7
	Foxtail millets	0.38	0.19	0.5
	Redgram	6.87	6.89	1.0
	Horsegram	2.68	1.83	0.68
	Blackgram	0.26	0.06	0.26
	Cowpea	9.46	0.94	0.38
	Avare	1.48	0.57	0.39
	Groundnut	21.43	27.30	1.28
	Seasamum	1.76	1.32	0.75
	Sunflower	11.08	9.06	0.81
	Castor	0.57	0.53	0.94
	Niger	0.45	0.12	0.26
	Mustard	0.16	0.03	0.21
	Cotton	28.76	39.16	0.23
	Sugarcane planted	10.09	1125.93	112
	Tobaco (UFC)			
2010-11	Rice	66.59	225.37	3.38
	Jowar	12.45	26.35	2.11
	Ragi	10.96	14.77	1.34
	Maize	179.19	517.83	2.89
	Bajra	0.45	0.48	0.88
	Foxtail millets	0.16	0.13	0.8
	Redgram	10.29	9.60	0.93
	Horsegram		-	
	Blackgram	0.04	0.02	0.62
	Cowpea	0.43	0.21	0.49
	Avare	0.78	0.48	0.61
	Groundnut	15.29	16.69	1.09
	Seasamum	0.2	0.22	1.13
	Sunflower	0.70	0.47	0.67
	Castor	0.4	0.33	0.84
	Niger	0.36	0.1	0.3
	Mustard	0.13	0.04	0.3
	Cotton	24.19	41.37	0.29
	Sugarcane planted	3.99		
	Tobaco (UFC)	0.32	0.19	0.59

A=Area (‘000 ha), P=Production (‘000 mts), Y=Yield (t/ha)

Horticultural and commercial crops

Year	Crop	Area (1000 ha)	Production (1000 mts)	Yield (t/ha.)
2003-04	Mango	2.27	23.390	10.30
	Banana	1.07	29.33	27.37
	Lemon			
	Sapota			
	Tomato	1.3	38.59	2.96
	Brinjal			
	Beans			
	Onion	5.29	103.63	19.57
	Chilli			
	Bhendi			
	Cucumber			
	Coconut			
	Arecanut			
	Betelvine			
2004-05	Mango	2.59	25.59	9.87
	Banana	2.12	59.05	27.77
	Lemon	0.05	01.25	23.53
	Sapota	0.84	08.81	10.44
	Tomato	1.91	47.27	25.00
	Brinjal	0.54	13.73	25.00
	Beans	-	-	-
	Onion	5.67	66.91	11.78
	Chilli	1.25	13.28	10.59
	Bhendi	0.33	2.58	07.73
	Cucumber			
	Coconut	17.32	1990.14 lakh nuts	-
	Arecanut	25.23	33.2	1.32
	Betelvine	1.06	22318.5 lakh leaves	20.89 lakh leaves/ha
2005-06	Mango	2.32	17.42	7.581
	Banana	0.83	23.24	26.54
	Lemon			
	Sapota			
	Tomato	1.56	38.41	24.581
	Brinjal			
	Beans			
	Onion	3.11	48.83	15.67
	Chilli			
	Bhendi			
	Cucumber			
	Coconut			
	Arecanut			
	Betelvine			

2006-07	Mango	2.24	27.04	9.84
	Banana	2.16	60.07	27.72
	Lemon	0.05	1.25	23.53
	Sapota	0.85	8.89	10.45
	Tomato	1.91	47.27	25.00
	Brinjal	0.54	13.73	25.00
	Beans			
	Onion	3.58	77.02	20.0
	Chilli	1.25	13.28	10.59
	Bhendi	0.33	2.58	7.73
	Cucumber	0.22	3.42	15.35
	Coconut	17.32	1990.14 lakh nuts	-
	Arecanut	25.23	33.20	1.32
	Betelvine	1.06	22318.5 leaves	20.89 lakh leaves
2007-08	Mango	2.94	28.46	9.66
	Banana	3.03	70.00	23.04
	Lemon	0.07	1.96	25.15
	Sapota	0.93	10.39	11.07
	Tomato	2.05	67.92	33.08
	Brinjal	0.58	15.43	26.32
	Beans	0.12	2.01	15.88
	Onion	4.00	75.86	18.94
	Chilli	1.47	15.78	10.68
	Bhendi	0.36	2.82	7.82
	Cucumber	0.21	3.24	15.23
	Coconut	17.53	2004.0 lakh nuts	-
	Arecanut	26.90	35.69	1.33
	Betelvine	1.23	25606 lakh leaves	20.70 lakh leaves /ha
	Oil palm	0.20	1.55	7.76
2008-09	Mango	2.64	26.04	9.84
	Banana	2.24	61.06	27.22
	Lemon	0.05	1.25	23.53
	Sapota	0.85	8.89	10.45
	Tomato	1.39	34.92	25.00
	Brinjal	0.54	13.73	25.00
	Beans	0.12	1.33	10.60
	Onion	4.46	89.29	20.00
	Chilli	1.25	13.28	10.59
	Bhendi	0.33	2.58	
	Cucumber			
	Coconut	17.32	1.9	-
	Arecanut	25.23	33.20	1.32
	Betelvine	1.06	22.31	20.89
	Oil palm			

2009-10	Mango	3.20	30.1	9.40
	Banana	3.05	70.1	22.98
	Lemon			
	Sapota	0.74	7.16	9.68
	Tomato	2.10	74.00	35.23
	Brinjal	0.26	4.69	17.62
	Beans	0.15	1.83	11.8
	Onion	4.05	75.95	18.75
	Chilli	0.98	10.93	11.14
	Bhendi	0.24	1.72	7.01
	Cucumber	0.17	2.58	15.0
	Coconut	12.94	0.88	0.06
	Arecanut	29.60	39.28	1.33
	Betelvine	0.92	4.41	4.79
	Oil palm			
2010-11	Mango	3.28	31.3	9.53
	Banana	3.20	84.73	26.47
	Lemon	0.10	1.33	12.46
	Sapota	0.83	7.87	9.49
	Tomato	2.95	85.43	28.89
	Brinjal	0.24	6.23	25.56
	Beans	0.21	1.782	8.45
	Onion	4.97	68.53	13.78
	Chilli	1.05	18.18	17.29
	Bhendi	0.25	1.77	7.09
	Cucumber	0.17	2.58	15.00
	Coconut	12.94	8.83	0.06
	Arecanut	30.02	66.71	2.22
	Betelvine	0.95	4.45	4.66
	Oil palm	0.77	5.20	6.73

A=Area (‘000 ha), P=Production (‘000 mts), Y=Yield (t/ha)

Livestock, poultry

Year	**Livestock**			**Poultry**			**Fishery**		
	No.	**Prod.**	**PY**	**No.**	**Prod.**	**Y**	**Area (ha)**	**Prod. (tones)**	**Yield (kg/ha)**
2001-02									
2002-03	Cattle	368984					8900	2906.49	326.57
	Buffaloes	188033							
	Sheep	395385							
	Goats	221827							

	Pigs	15399							
	Dogs	69906							
	Rabits	11							
	Other livestock	1052							
	Total live stock	1260597							
				Poultry	2079119				
2003-04							6600	01413	214.10
2004-05							8200	2641.47	322.13
2005-06							8600	5682.32	660.70
2006-07	Cattle	395123					8980	7423.13	826.23
	Buffaloes	223601							
	Sheep	333461							
	Goats	153940							
	Pigs	6493							
	Dogs	48679							
	Rabits	170							
	Other	109							
	Total live	1161576							
				Poultry	2054012				
2007-08							10008	8126.27	811.98
2008-09							10120	8643.86	854.05
2009-10							10100	9840.00	974.26
2010-11							10100	11355.00	1124.26
2011-12							8600	3800.00	441.86

Crop Planning

Kharif, Normal Condition

Sectors	Varieties breed species	Nutrient Management N:P:K:S: Zn (STV based)	Tillage operation	Water management	Soil water conservation	Tool/Farm Implements
Cereals						
Rice	BPT Sona IR-64	N: 100 kg P: 50 kg K: 50 kg Zn: 20 kg	• Summer fill ploughing • Sowing of the Green manure crops • Puddling	5 cm water will be there throught the crop period.	• Land levelling will be done in order to free flow of water	Cultivator Puddler Harrower Transplantor
Maize (Rainfed)	NAH-2049 NAH-1137 & private hybrids	N: 150 kg P: 75 kg K: 40 kg Zn: 10 kg	• Deep ploughing • Harrowing • Sowing • Intercultiv ation • Earthing up	Critical stages will be irrigated (germinati on, vegetative stage, flowering, seed filling)	• Sowing across the slope • Trench cum bunds to harvest rain water • Contour bunds all along the slope	Cultivator Puddler Harrower Seed cum fertilizer drill
Ragi (Rainfed)	GPU-28	N: 50 kg P: 40 kg K: 25 kg $ZnSO_4$: 12.5 kg Borax: 100 kg	• Cultivating the land using cultivator • Harrowing • Sowing • Intercultva tion • Earthing up	Critical stages will be irrigated if the water is available (vegetative , flowering and seed filling stage).	• Sowing across the slope • Trench cum bunds to harvest rain water • Countur bunds all along the slope	Cultivator Harrower Hoe

Pulses						
Redgram (Rainfed)	BRG-1	N: 25 kg P: 50 kg K: 25 kg S: 20 kg Zn: 15 kg	• Deep ploughing • Harrowing • Sowing • Intercultivation	Critical stages will be irrigated (vegetative flowering, pod formation)	• Opening of dead furrow • Earthing up	Seed drill M.B. plough
Oil seeds						
Groundnut	GPBD-4	N: 25 kg P: 50 kg K: 25 kg Gypsum: 500 kg	• Summer ploughing • Harrowing • Sowing • Intercultivation	Irrigation at critical stages. Vegetative stage, peg initation stage and pod formation stage.	• Opening of dead furrow • Earthing up • Bund formation	Seed drill M.B. plough
Horticulture						
Mango	Alphanso Mallika	75 : 20 : 70 g. NPK / plant	Land levelling	Drip irrigation	Cresent bunds mulching	Iron plough post hole digger
Arecanut	Channagiri Local	100:40:140 g. NPK / plant	Harrowing	Drip irrigation	Mulching	Disc harrow
Coconut	Arasikere tq. Choughat Dwarf orange (4 year onwards)	170:120:400 g. NPK / plant- Kharif 330:200:800 g. NPK / plant- Rabi	Cleaning of weeds	Basin irrigation	Mulching	Disc harrow
Banana	G-9 Yelakki	180:108:225 g. NPK / plant	Cleaning of weeds	Foold irrigation/ drip irriation	Mulching	Weed cutter machine

Vegetables						
Sectors	**Varieties breed species**	**Nutrient Management N:P:K:S: Zn (STV based)**	**Tillage operation**	**Water management**	**Soil water conservation**	**Tool/Farm Implements**
Tomato	US Agri 618	250:250:250 g. NPK / plant	Cleaning of weeds. Maintain sanitation	Flood irrigation	-	-
Onion	Arka Kalyan	125: 50:125 kg. NPK / ha	Weeding needs to be done	Flood irrigation	-	-
Spice						
Fodder						
Napier	DHN-6 & Co-3	Farm yard manure +NPK (50:30:30)	Plough	Fort nightly irrigation	Soil levelling	Plough (Wooden)

Live Stock

Species	**Varieties breed species**	**Feeding management**	**Housing management**	**Health Management**	**Vaccination**	**Others**
Cattle Local	• Hallikar / Killari • Amruthamahal	Feed on dry roughages especially paddy straw and jowar straw	Thatched / Asbesties roof. Close spacing	Not done on a regular basis	Vaccinate against Foot and mouth disease, BQ, HS	-
Exotic	• Holstein fresian X • Jersey X	Feed on dry roughages and napier (green fodder)	Asbestes roof / thatched roof. Floor – concrete	Deworm and vaccinate regularly	Vaccinate against Foot and mouth disease, BQ, HS	-
Buffalo	• Murrah X • Surthi X • Jafrabadhi X • Dharwad • Nagpuri etc	Dry fodder and allowed for grazing	Sheds constructed from asbertoes roof / Thatched roof. Flooring unscientific	Deworm and vaccinate regulary	Vaccinate against Foot and mouth disease and HS	-
Sheep & Goat	• Bellary X • Deceari X • Malbari X • Neelagiri X	Grazing in semi free range condition	Thatched roof Floor – Soil	Deworming not being done on a regular basis	Vaccinate against Foot and mouth disease, PPR, ET regularly.	-

Fishery

	Feeding Management	Pond Management
Summer	**In growout ponds** • Feed intake will be high. • Higher feed frequency.	• Water evaporation loss must be compensated. • Frequent water exchange is required to replenish dissolved oxygen. • Regular manuring of pond is necessary. • Harvesting may be planned
Winter	• Feed intake will be low. • Avoid wastage of supplementary feeds.	• Observe fishes for normal swimming and feeding. • Body weight sampling can be carred out.
Rainy	• Feeding rate will be normal in young ones. • Good quality and adequate quality of seed supply are crucial	• Matured fishes might breed, common carp. Keep an eye on it. • Avoid entry of unwanted organism and weeds into pond through rain water. • If harvesting is over, proper stocking of fishes can be planned.

Crop Planning

Kharif, Delayed Monsoon

Sectors	Varieties Hybrids	Nutrient Management N:P:K:S: Zn (STV based)	Tillage operation	Water management	Soil water conservation	Tool/Farm Implements
Cereals						
Maize	NAH-2049 NAH-1137 Private hybrid	N: 112 kg P: 56 kg K: 30 kg	• Deep ploughing • Harrowing • Sowing • Intercultiv ation • Earthing up	Critical stages will be irrigated (Germisati on, vegetative stage, flowering, seed filling).	• Sowing across the slope • Trench cum bunds to harvest rain water • Countour bunds all along the slope	Cultivator Puddler Harrower Seed cum fertilizer drill
Ragi (Rainfed)	GPU-28 Indaf-5 PR-202, GPU-48	N: 37 kg P: 30 kg K: 20 kg	• Cultivating the land using cultivator • Harrowing • Sowing • Intercultva tion • Earthing up	Critical stages will be irrigated the water is available (vegetative , flowering and seed filling stage).	• Sowing across the slope • Trench cum bunds to harvest rain water • Countour bunds all along the slope	Cultivator Harrower Hoe

Pulses						
Redgram	BRG-2	N: 20 kg P: 37 kg K: 20 kg S: 15 kg Zn: 12 kg	• Deep ploughing • Harrowing	• Irrigate at critical stage: vegetative stage, harrowing pod formation stage.	• Opening of dead furrows	• MB plough • Seed cum fertilizer drill • Harrower
Oil seeds						
Groundut	J.L- 24	N: 20 kg P: 37 kg K: 20 kg Gypsum: 375 kg	• Land preparation • Harrowing • Earthing up	Higher seed rate, irrigate at critical stages and sprinkler irrigation	• Higher seed rate • Opening of dead furrows.	Cultivation Harrower Hoe

Horticulture

Sectors	Varieties breed species	Nutrient Management N:P:K:S: Zn (STV based)	Tillage operation	Water management	Soil water conservation	Tool/Farm Implements
Mango	Alphanso Mallika	75:20:70 g. NPK / plant	Will be done after receiving good rain	Tanker irrigation	Mulching	Water tanker
Arecanut	Channagiri Local	100:40:140 g. NPK / plant	-	Bore well irrigation	Growing cover crops	-
Coconut	Dwarf orange (4 year onwards)	330:200:800 g. NPK / plant- Rabi	No tillage	Drip irrigation	Cover crops can be grown	-
Banana	G-9 Yelakki	180:108:225 g. NPK / plant	Cleaning of weeds	Drip irrigation	Spary of anti coagulants	Power sprayer.

Vegetables

Sectors	Varieties breed species	Nutrient Management N:P:K:S: Zn (STV based)	Tillage operation	Water management	Soil water conservation	Tool/Farm Implements
Tomato	US Agri 618	250:250:250 g. NPK / ha	-	Bore well irrigation	Cost of mulching sheet	Mulching sheet
Onion	Arka Kalyan	125: 50:125 kg. NPK / ha	Weeding needs to be done	Flood irrigation	-	-

KVK profile

(a) Taralabalu KVK, Davanagere

Location	Taralabalu Krishi Vigyan Kendra, Kadalivana, LIC Colony Layout, BIET Road, Davanagere-577004
Year of Establishment	2005
Host Organization	Taralabalu Rural Development Foundation, Sirigere
Farm (ha)	15.00
Area of work	1. Integrated crop management in Rice, Maize, Ragi, Fox tail, Millet, Redgram, Bengalgram, Cotton and Tomato. 2. Integrated nutrient management in Arecanut, Coconut, Banana and Vegetables. 3. Integratred pest and disease management in Arecanut, Coconut, Bengalgram, Mango, Sunflower, Redgram, Sugarcane. 4. Integrated farming system. 5. Animal nutrition, Clean milk production, Vaccination and Deworming. 6. Integrated Fish farming, Aquaculture production in seasonal water bodies.
Facilities available	SWTL, Basic Plant Helath Clinic, Portable carp hatchery, Banana special production unit, Automatic weather station (AWS).

(b) Staff position

No post is vacant

(c) Detail of funds allocated to KVKs during XI Plan

Rs. in Lakh

	2007-08	**2008-09**	**2009-10**	**2010-11**	**2011-12**	**TOTAL**
	70.76	36.65	48.70	142.53	85.00	**383.64**

(d) Details of Operational area / Villages :

Sl. No.	**Taluk**	**Name of the village**	**Major crops & enterprises**	**Major problem identified**	**Identified Thrust areas**
1.	Davanagere	Siddanuru Kurki Malenahalli	Rice	• Poor fertilizer management with respect potash. • No micronutrient application. • Weed mansce • Stembore and downey mildew	• INM • ICM • Resistant hybried

2.	Davanagere	Siddanuru Iguru Chikkanahalli Kempanahalli	Cross bred cattle Sheep Goat and poultry birds rearing	• Lower milk production • Fertility problem	• Nutrition
3.	Davanagere	Belavanur Halebislari Kandagal Kukkawada	Paddy	• Excelsive fertilizer application leading to diseases. • No micro nutrient application. • Manual transplanting	• INM • Mechanization
4.	Davanagere	Kodaganur Nerlagi	Tomato	• Early and late blight	• IDM
5.	Davanagere	Kodaganur Kurki Siddanuru Nerligi	Vegetables	• No micro nutrient application	• INM
6.	Davanagere	Uchingidurga U. Kallahalli Obalapura Aluru Alekallu	Navane Groundnut Sunflower	• Poor quality local seeds • Low yield	• ICM
7.	Davanagere	Kurki Siddanuru	Redgram	• Use of local variety • Uneven crop stand • Less plant population	• ICM
8.	Davanagere	Bullapura	Fisheries	• Low body weight • Less production of fishes	• Integrated fish farming • Aquaculture production in seasonal water bodies
9.	Channagiri	Bommenahalli Bheemaneri Garaga	Ragi	• Low yield • Use of local variety • No. intercropping • No seed treatment	• ICM
10.	Channagiri	Basapatna Harosagara Daginakatte Kotehalu	Arecanut	• Hidimundige • Snails	• IDN
11.	Harihar	Malebennur Anagawadi Shamshipura	Arecanut	• Inflorescence drying and inflovescence caterpiller	• IPDM

12.	Harihara	Yalavatti Kenchanahalli Holesirigere	Fisheries	• Low body weight • Less production of fishes	• Integrated fish farming • Aquaculture production in seasonal water bodies
13.	Jagaluru	Kalledevapura Rangapura	Bengalgram	• Pod borer • Wilt	• IPDM
	Harapanahalli	Mydur Budhihal Anjigere Sokke	Cotton	• Improper spacing and higher seed rate. • Leaf reddining and square drying. • No micro and macro nutrients sprays. • No INM	• IDM
14.	Harapanahalli	Anjigere Bhudihal	Sunflwoer	• Incidence of powdery mildew, basal color rot	• IDM
15.	Harapanahalli	Kallahalli	Fisheries	• Low body weight • Less production of fishes	• Integrated fish farming • Aquaculture production in seasonal water bodies

(e) Impact and Salient Achievements:

1. Maize

Maize is the important field crops of the district grown in 1.75 lakh ha. Growing of maize for nearly two decades (private hybrids) resulted in more pests and diseases. Taralabalu Krishi Vigyan Kendra introduced high yielding and disease tolerant (dowoney mildew) maize hybrid NAH-2049 (UAS B) during 2007-08 and 2008-09. The results shows considerable reduction in pest and disease incidence and increase in productivity to the extent of 1.5 to 2.00 quintals per ha.

Maize is grown as a sole crop in the district but KVK has popularised intercropping in maize with pulse crops (redgram, cowpea, field bean and horse gram) which is generating additional income to the farmers (30-40% farmers practicing intercrop).

2. Cotton

Two decades ago Davanagere district considered as the hub of cotton crop with number of cotton mills dependent on cotton. Due to increased pest and diseases and decline in the yield, area under cotton reduced to great extent and almost all the area replaced by maize. With the introduction of Bt-Cotton MRC-6918 by Krishi Vigyan Kendra during 2006-07, 2007-08,

2008-09 and 2009-10 through Front Line Demonstrations (ICM in Cotton), cotton area increased from 500 ha. to 25,000 ha. The yield levels also increased from 15.4 quintals per ha. to 19.58 quintals per ha. Now, farmers are happy growing cotton than maize.

3. Coconut

Coconut is an important horticultural crop of the district along with areca nut. In recent past, farmers are cutting coconut trees due to incidence of black headed caterpillar and mites. These problems persisted for nearly a decade now. Krishi Vigyan Kendra has taken up Front Line Demonstration of Integrated Nutrient Management through which root feeding of coconut tonic (TNAU technology) introduced during 2007-08, 2008-09 and 2009-10. Major outcome of this technology observed in reduced incidence of black headed caterpillar and mites there by increased yield on an average 46 nuts per palm to 110 nuts per palm.

4. Paddy

Considering the area under different crops, paddy is the second largest crop (next to maize) occupying 0.70 lakh ha. The yields of paddy are low due to higher incidence of pests and diseases, no seedling treatment and improper nutrient management. KVK intervened by conducting Front Line Demonstration on Integrated Crop Management in Paddy during 2005-06 and 2009-10 and also conducted Farmers Field School during 2009-10. As a result of these interventions practices like Integrated Nutrient Management especially the use of *Azospirillum*, application of $ZnSO_4$ and seedlings treatment are made popular among farmers. The yield levels have increased from 47.5 quintals per ha. to 58.00 quintals per ha and fertilizers application has been reduced from 4 quintals to 2.5 q / acre.

5. Tomato

Tomato is the most important vegetable crop of the district and remunerative to the farmers especially under rainfed situation. Crop is prone to pests and diseases and also splitting of fruits resulted in reduced price in the market. Krishi Vigyan Kendra conducted Front Line Demonstration on Integrated Crop Management in Tomato through which 'Vegetable Special' (IIHR technology) spray was taken up during 2008-09 and 2009-10. 'Vegetable Special' sprayed plots observed lesser incidence of wilt, fruit borer and fruit splitting and 8-10 tons per ha. increase in yield levels was observed (30.5 tons per ha. to 38.55 tons per ha.) and fetching good price in market.

(f) Outreach

Year	No. of village in Distt.	No. of villages covered		Village coverage (through)			
		Extensive	Intensive	literature	Training	Ext acti.	KMA
2007-08	810	55	10	-	√	√	-
2008-09	810	56	12	-	√	√	-
2009-10	810	50	10	√	√	√	-
2010-11	810	62	12	√	√	√	√
2011-12	810	70	13	√	√	√	√

(g) Activities

Areas	Activities performed		Results	Additional activity	Add. Employment (man days)	Additional income (Rs.)	Cons-traints
	Type of activities aacaactivity	No. of activity					
Secondary Agriculture	Vermicelli production unit	01	Produced 20 qtl till the present day.	1. Training 2.Recepee for preparation of vermicelli 3.Provided vermicelli production unit	1 Monday	76,000-00	Marketing. Branding.
Vegetable nursery production	Vegetable seedlings production (Chilli, Toamto, Brinjal, Capsicum, Arecanut)	01	Chilli	Trainings	1 Monday	135000-00	
Vermicompost production	Vermicompost production unit	10	Sustained prodction of vermicompost	Trainings	-	Produced vermicompost used for their own lands.	

(h) Seed Production Programme: Nil

(i) Seed & Planting material production at KVK Farm (Year-wise) during XI Plan

Year	Seed produced (q)	Type of seed	Planting materials (no.)	Type of planting materials	No. of farmers benefitted	Revenue generated (Rs.) Seed + PM
2007-08			21.0 qtl 32749 no.s	Sugarcane Fodder Fishes Ornamental fishes	44	38940-00
2008-09	0.02	Fodder	21398 no.	Vegetables Fodder Green manur Fishes	37	10935-00
2009-10			107600 no.s	Fodder Fish fingerlings	35	14500-00
2010-11	0.25	Fodder	10 qtl. 68169 no.s	Sugarcane setts Fruits Ornamental palm Arecanut Fodder	167	77780-00
2011-12	8.14	Vegetables Green manur crops Fodder	140002 no.s	Vegetables Plantation crops Ornamental	707	177034-00
Total	**8.41**		**369918**		**990**	**319189-00**

(j) Extension Activities conducted (during XI Plan)

Activity	No.
Field Day	34
Kisan Mela	4
Kisan Ghosthi	2
Exhibition	9
Film Show	251
Method Demonstrations	178
Farmers Seminar	2
Workshop	12
Group meetings	34
Lectures delivered as resource persons	178

Newspaper coverage	320
Radio talks	75
TV talks	71
Popular articles	17
Extension Literature	137
Advisory Services	-
Scientific visit to farmers field	407
Farmers visit to KVK	1679
Diagnostic visits	85
Exposure visits	17
Ex-trainees Sammelan	-
Soil health Camp	-
Animal Health Camp	05
Farm Science Club Conveners meet	-
Self Help Group Conveners meetings	08
Mahila Mandals Conveners meetings	02

(k) Skill Identified and its Development through HRD

S No.	Name of Skill	No. of persons trained	No. of persons self-employed
1	Vegetable Nursery management	15	01
2	Vermicompost production	98	10
3	Vermicelli production	16	01
4	Poultry management	29	02
5	Stall feeding of sheep	26	03
6	Azolla production	15	06

(l) Training programs conducted for farmers, farm women, rural youth & extension personnel

S. No.	Aspect	Trainee Category	No.	Beneficiaries
1.	Crop production	Farmers and Farm women	133	3366
2.	Horticulture	Farmers and Farm women	76	2553
3.	Soil Science	Farmers and Farm women	51	1104

4.	Plant protection	Farmers and Farm women	69	1604
5.	Capacity building and group discussion	Farmers and Farm women	26	537
6.	Live stock	Farmers and Farm women	39	556
7.	Home sicence	Farmers and Farm women	48	965
8.	Fisheries	Farmers and Farm women	34	1230
9.	Clean milk production	Farmers and Farm women	114	4539
10.	Improved integrated dairy farming	Farmers and Farm women	43	2298
11.	Crop production	Extension functionaries	03	88
12.	Live stock	Extension functionaries	03	30
13.	Fisheries	Extension functionaries	03	78
14.	Home science	Extension functionaries	07	217
15.	Soil science	Extension functionaries	01	21
16.	Plant protection	Extension functionaries	08	128
17.	Crop production	Rural youth	07	253
18.	Horticulture	Rural youth	03	107
19.	Live stock	Rural youth	15	86
20.	Fishereis	Rural youth	03	80
21.	Home science	Rural youth	04	69
22.	Soil science	Rural youth	02	159

23.	Plant protection	Rural youth	01	34
24.	Environment management plan	Farmers and Farm women	08	223
25.	Organic farming in agricultural crops	Extension functionaries	10	230
	Total		**702**	**18555**

(m) Women empowerment (Income Generation)

Sl.No.	Thematic Area	Year	Activities	Result	Constraints
1.	Secondary Agriculture	2009	Vermicelli production	Produced and sold 20 qt of vermicelli.	Marketing problems: (Packing, labelling, transportation, branding)
2.	Secondary Agriculture	2009	Candle preparation	-	Marketing problems: (Packing, labelling, transportation, branding) and finding it difficult to match the sales

(n) Custom hiring service given by KVK

1 Custom hiring centre under NICRA project is running in Siddanuru village of Davanagere taluk with important agricultural equipments like seed cum fertilizer drill, power sprayer, power weeder, post hole digger and others.

(p) Success stories (two)

1. Production of Vermicelli for Self Employment

(a) Name of the enterprise : Vermicelli Production Unit, Halebisleri, Davanagere (tq & dist.)

(b) Name and complete address of entrepreneur: Smt. Mangalamma
Halebislari
Mudhahadadi –post
Davanagere – tq & dist.

(c) Interventions of KVK with quantitative data support

- **Training and Demonstrations**: Krishi Vigyan Kendra conducted training on 28-10-2009 on 'Empowerment of women through agro based enterprises' to the entrepreneur. In this training, raw materials required for vermicelli production, ingredients and method demonstration on preparation of vermicelli were shown. Subsequently specialists from KVK visited the enterprise site for regular monitoring and guidance.

- **Publicity and marketing:** Specialist of KVK have used every opportunity to promote marketing of vermicelli produced by Smt. Mangalamma of Halebislari village in the group meetings, trainings in and around the village. Opportunity has been provided in KVK

organized exhibitions for the sale of vermicelli like during Agriculture Technology Week, Krishi Utsava, Organic Krishi Mela. Efforts have been made to link students hostels, hotels, small retail shops in Davanagere city. Presently vermicelli has been sold in Halebislari and nearby village for house hold consumption.

(d) Time line of entrepreneurship development of entrepreneur

During 2009, with financial assistance by department of Bio technology, Government of India, Vermicelli production instrument was installed with a cost of Rs. 34,000/- (Thirty Four Thousand Rupees only). Production started immediately in small scale and sold to neighbours. In 2010, as the information reached the entire village, many house holds in the village started purchasing vermicelli from Smt. Mangalamma. Towards end of 2010 and in 2011 all the villagers and also neighbouring village started purchasing vermicelli owing to the efforts of KVK specialists in spreading the information.

(e) Technical components in the enterprise

- **Raw materials :** Raw material for production of vermicelli is Rava, which is readily available in Davanagere city.
- **Process (methodology):** For production of vermicelli, process involved in simply mixing rava with water in appropriate proportion and the mixture is put into machine and so produced vermicelli is dried and packed in carton boxes for sale.
- **Manpower involvement:** Smt. Mangalamma along with her brother and mother takes up production of vermicelli on a regular basis. It is observed that no outside labour is involved in this process.
- **Package and handling:** Presently 1 kg cartoon boxes are used to pack the vermicelli. This package is used because majority of purchasers are households people and it is easy to carry. Since the production is continuous and available in the village itself, people like to buy in small quantities.
- **Cost benefit ratio:** The cost of raw material for preparation of vermicelli, packaging, transportation, electricity and labour cost comes to Rs. 25 / kg while the selling rate is Rs. 38 / kg for small quantities and Rs. 35 / kg for bulk purchases.

(f) Status of entrepreneur before and after the enterprise

Smt. Mangalamma, a widow from Halebislari village of Davanager district settled in this village with brothers after the death of her husband. She inherited 1 acre land from her husband's family. The women is straggling to earn basic livelihood security with almost no resources with her. KVK with the financial assistance of Department of Biotechnology, GoI provided her the vermicelli production machine. This is because great opportunity for this women to engage in work which has given the status of self employed women in the village. Her brother and mother also help her in this works. Now the villagers are of the opinion that Smt. Mangalamma in employed women with an improved social status and a motivational spirit for other women in the village.

(g) Present working condition of enterprise in terms of raw material availability, labour availability, consumers preference, marketing of the produce etc. parameters (i.e economic viability of the enterprise)

This small unit of vermicelli production started towards end of 2009 in continuously running till today except for stoppage of few days in rainy season for drying problem of vermicelli. Raw materials for production of vermicelli are readily available in Davanagere city which is 12 KM

away from the village. For the process of production Smt. Mangalamma along with her mother and on few occasion her brother join hands. Transportation in local and neighbour villages were made by her brother. Vermicelli produced by Smt. Mangalamma of Halebilsari village has been used by villagers for nearly two year now and quality of the produced is well accepted by the neighbourhood people. Presently almost all the villagers are used the vermicelli and few from neighbouring villagers. Now the KVK do some efforts to sell the produced to retail shops in Davanagere city and to get sale licence for the produce. Till date 2000 kg of vermicelli has been produced and gained gross income of Rs.76,000/- and net income of Rs. 20,000/- in two years.

(h) Horizontal spread of enterprise

The unit of vermicelli production started by Smt. Mangalamma with the help of KVK slowly started spreading throughout the village and also neighbouring villages. KVK has provided opportunity to sell vermicelli in Krishi mela's, exhibitions with special stall naming 'KVK sponsored SHG's. The enterprise of less than 2 years old and has got all the opportunity to grow bigger.

(i) License, advertisements etc on product

KVK specialists are taking every opportunity to spread the message on the availability of vermicelli through extension methods, provided opportunity to participate in exhibitions.

Taking sale licence for the enterprises in our priority in coming days.

(j) Recognitions/awards received by the entrepreneur

Nil

2. Case study: Revival of coconut garden affected by coconut black headed caterpillar (*Opisina arenosella)* through the use of larval parasitoid *Goniozus nephantidis*

Coconut is one of the important plantation crops of the district next to areca nut. The district has 12949.8 ha of coconut with production of 883.71 lakh nuts. The average productivity of 120 nuts / palm. Because of heavy in incidence of coconut black headed caterpillar (CBHC) and mites nuts productivity has reduced drastically.

Coconut black headed caterpillar (BTC) *Opisina arenosella* is one of the major pests of coconut palms causing considerable damage to coconut industry and according to a recent survey, about 1.6 million palms are affected in Karnataka alone. Available control measures include mechanical, chemical and biological to control it. The chemical method has been shown to leave persistent Residues. Consumption of tender coconuts from trees applied with synthetic pesticides may pose health hazards Insecticide of several concerted efforts made for the past two decades to control the pest by synthetic application, the anticipated results have never been achieved in this communication, we report the effectiveness and superiority of biological control over other methods for management of this notorious pest by parasites.

KV K Intervention

Mr. Prakash.M S/o G.Mallappa, Kotehal village of Channagiri Taluk, Davanagere district cultivates 8 acres of coconut from past two decades around 600 plants are accommodated in the 8 acres of area. The productivity of

the palms was 40. He has taken all the measures like mechanical (cutting and burning of affected palms) and chemical (Roof feeding of monocrotophas 10 ml /palm) methods. By during all these efforts he is unable to control the pest and decided to uproot the palms as they have less productive.

They expressed the problem with officials of Taralabalu Krishi Vigyan Kendra. Scientists from KVK initially surveyed the plot for the occurrences of pest incidence. It was noticed that 65-70% of the palms were affected with this. Scientists contacted the Tamilnadu Agriculture University scientists for obtaining larval parasite *Goniozus nephantidis* . Initial arrangement was made by KVK to procure the parasites. A method demonstration was also did on release of parasites to the palm. Later on the farmer released the parasites 4 times by himself. Slowly the incidence was reduced months after month. Again in the next year they have practiced the same technology in consulting with KVK scientists.

Particulars'	**Before**	**After**
Incidence of CBHG in plot	65-70 %	5-10%
Number of nuts / palms	40	140-150
District average	120	
Gross Income (600 Palms)	72000/-	252000/-

Suitability in the existing farming / cropping system

As the incidence of CBHC is prevailing in the other coconut gardens of the region. So this technology suits to whole area of affected palms.

Acceptance of the technology by the farmer

Farmers accepted and convinced about the technology as it drastically reduced the pest incidence. It also acts as best alternative to other methods of control.

Horizontal spread

More than 50 farmers are advised in this technology by the KVK. We are diverting the farmers to department of Horticulture for obtaining the *Goniozus nephantidis.*

Linkage with developmental organizations

In collaboration with department of horticulture, Davanagere we have conducted several training programmes on production technology of coconut under coconut development board scheme. Farmers who adviced about the technology are diverted to department for getting the *Goniozus nephantidis* parasities in the early years Tamilnadu Agriculture University has supplied the culture.

CD Developed / Media

A story on management of CBHC in coconut by our SMS (Horticulture) Mr.Basavanagowda.M.G was telecasted on Anna data programmed of E-TV Kannada.

Places and Address of the Farmer who could be contacted

Mr.Prakash.G S/o Mallappa.G
Kotehal, Marabanahalli (at post)
Channagiri Taluk
Davanagere district-577551, Phone No: 09448628010

Publications Printed

1) The study was presented as poster presentation on "Integrated Management of black headed caterpillar in coconut by Mr.Basavanagowda.M.G SMS (Horticulture), Prasannakumara.N SMS (Plant Protection), Dr.Devaraja.T.N (Programme Coordinator) at international conference on a coconut Biodiversity for prosperity at Central Plantation Crops Research Institute, Kasargod (Enclosure-1).

2) Folder on management of CBHC in coconut was brought out by Taralabalu KVK (Exclosure-2)

It was clear that, a coconut garden which is going to uproot by the farmer is saved by the KVK effort. *Goniozus nephantidis* is the most effective larval parasitoid in controlling the CBHC. The parasitoid should be released @3000/ha under the coconut trees when the pest is in the 2^{nd} &3^{rd} instars larval stage. The optimum level of release is 1:8 of parasitoid ratio. Parasitoid should not be released in the crown region since they will be killed by predators like spiders bugs.

This technology helped to reduce the incidence level from 65-70 percent to 5-10 percent. This inturn helps to increase the productivity of the palms contributing to the higher gross income.

Evidence

The success of the technology was measured by post assessment of the farming situation. Initial survey was made on the percent existence of the pest later after the study post survey was made on the percent damage. Increase in number of nuts per palm itself indicates the success of technology in decreasing the incidence.

(q) List of Innovators in various thematic areas

S. No	Name of Farmer	Address for communication	Specialization	Remarks
01.	Shivayogi B.M	Sneha Jevi Nilaya # 426 / 30 Acharya layout Harapanahalli Davanagere-Dist. 583131 Ph - 08398- 282288 M no - 09008279337	• Multistoried cropping system • 90 crops in 2.0 acre • Organic farming in all the crops • Jeevamrutha, Panchagavya and bio dynamics	• Kannada Rajyothsava Award 2008-09 • Best Organic Farmers Award by ZP-2009-10 • Chandrashekar Award TME Education Society 2009-10 • District Resource Person for Organic Farming

02	Renukarya M.K.	Durgadarshini farm Kallahalli village Chattanahalli-Post Davanagere-Dist. 583131 Ph M no - 09900110947	• Krishi bramhanda in 1.0 ha area • Fish culture in ponds • Vermiculture • Dairy	• Best Farmer Award by UAS (Bangalore)
03	Raghava	Aikanihika # 2815 / 392 G-3rd Main 1st cross, SS Layout 'B' Bock Davanagere 577004 Ph M no - 09448923773	• Natural farming in horticulture crops	• Member, OFAI • Member, Sahaja Samrudha Bangalore
04.	Prabhudev K.S.	Kathalgere-Post Channagiri-Tq Davanagere-Dist. M no - 09480767064	• Organic farming • Natural farming • Conservation of indigenous brinjal varieties	• Secretary, Davanagere Zilla Savayava Krishikara Sangha
05	Anjaneya J.	Kumbalore Harihara-Tq Davanagere-Dist. M no - 09972088929	• Conservation of indigenous paddy varieties in organic farming	• Member of Zilla Savayava Krishikara Sangha • Member, Sahaja Samrudhi, Bangalore
06	Saroja Patil	Nittur Harihar –Tq Davanagere-Dist. Ph M no - 0990076971	• Conservation of 20 indigenous paddy varieties in organic farming • Farmers field school	• Best Women Farmer Award by UAS, Dharwad
07	Raju S/o Giriyappa	Hosa Chikkanahalli Davanagere-Dist. 577003 Ph - 08192-206769	• Dairying	-
08	Maheswarappa B.	Taraganahalli-Post Honnali-Tq Davanagere-Dist. 577217 Ph - 08188-290462	• Dairying and Agriculture	-
09	Channaveeraswamy U.M. S/o Veerupakshaiah	Nitchapura-Post. Harapanahlli-Tq. Davanagere-Dist. Ph M no - 09980721052	• Dairying and Agriculture	-

10	Basavaraja S.G. S/o Sharanappa S.G.	Avaragere-Post Davanagere-Tq. 577003 M no - 0948191104	• Dairying and Agriculture	-
11	K. Meheswarapp S/o Doddabasappa	Halebisleri Mudhahadadi-Post Davanagere Tq. & Dist. 577525 Ph – 08192 294447	• Dairying and Agriculture	-
12	Kallerudreshappa K.B. S/o Balappa N.	Medikerenahalli Jagalur-Tq Davanagere-Dist. M no - 09448487421	• Lime, Sapota, Guava, Tamarind, Fig, Jamun, Mango, Curryleaf integrated farming	
13	Prakash G.	Kotehal Channagiri-Tq Davanagere-Dist. 577551 M no - 09448628010	• Arecanut, Coconut, Paddy Integrated farming	
14	Itagi Shivappa S/o Itagi Maheshwarappa	Nitturu-Post Harihara-Tq Davanagere-Dist. Ph M no - 09448966068	• Arecanut, Paddy, Coconut • Organic farming	
15	Prabhakara K.M.	Kurki, Kurki post Davangere-577514 Ph 08192-294976 M no - 09481688376	• Vermicomposting, organic farming in paddy and organic rice sale counter	-
16	B.G Erranna	Halebiselri, Mudahadadi (p) Davangere-577525 Ph M no - 09916114466	• Areacanut, paddy and vermicompost. Active member in the farmer field school in paddy.	-
17	B. Basavaraju	Hosabelavnur Davangere-Tq.& Dist. 577002 Ph M no - 09972274622	• Paddy, vermicomposting and arecanut Active member and leader in SHG . Transplanting of the paddy through mechanization	-
18	Rajeshwari W/O Eshwarappa	Kandagal-Post Davangere- Tq. & Dist. 577504 Ph M no - 09663246243	• Organic farming, ITK methods in controlling pest and diseases.	-

19	H.D Maheswarappa	Halvarthy Hebbal - Post Angodu Hobli Davangere-Dist. M no - 09886036057	• Maize, Cotton , Arecanut, Banana • Vegetables	-
20	Basavangowdru S.G	Taraganahalli-Post Honali-Tq Davanagere-Dist.	• Cotton, Maize, Redgram Ragi and Coconut.	-
21	Kenchappa	Anjigere-Post Harapanhalli-Tq. Davanagere-Dist. 583125 M no - 09844551757	• Cotton, Tomato, Maize, Chilli and seed production	-
22	Devendrappa K M	Kengalahalli-Post Honnali-Tq Davanagere-Dist. Ph M no - 09901117874	• Maize, Arecanut, Paddy , Ragi, Coconut,Banana	'District best farmer -2007-08and 2008-09. UAS(B) Best farmer award-2007-08,AIR Bhadravathi Krishi pandith award 2008-09,GOK.
23	Maheswarappa	Halebiselri, Mudahadadi -Post Davangere-577525 Ph M no - 09035108716	• Paddy Arecanut	-
24	BasavangowdaS.G.	Siddanur Angodu-Post. Davangere-Tq. & Dist. Ph M no - 09739338995	• Maize, Vegetables, Arecanut, Banana	-
25	Ravikumar M.B	Siddanur Angodu- Post Davangere-Tq. & Dist. Ph M no - 09448961653	• Maize, Vegetables, Arecanut, Banana • Running the nursery to supply the seedling for the farmers.	-
26	Basavaraju	Siddanur Angodu- Post Davangere-Tq. &Dist. Ph M no - 09845010623	• Maize, Vegetables, Arecanut, Banana Pomegranate	-
27	Manjunath S.M.	Kukkuvada (P) Davanagere-577525 Ph M no - 09900339902	• Arecanut garden mulched with ferruri • Organic paddy, coconut	-

28	Shankar D.B.	Kukkawada Davanagere-Tq. & Dist Ph - 08192-201658 M no - 09980171074	• Paddy organic, Banana, Tale, Sugarcane, Coconut, Selling of organic Paddy	-
29	Latha Umesh	Kukkawada Davanagere-Tq. & Dist Ph M no – 09902718325	• Papaya, Arecanut, Paddy, Integrated farming	

I Case study:

1. Case Study: Role of Banana Special in improving productivity of Banana in Siddanur village of Davanagere district

Background:

Banana is one of the important fruit crops of the district. Substantial number of farmers are growing banana crop. The district has 2,167.2 ha. area under banana with total production of 60075 t. and average productivity of the district is 27.72 t/ha. Farmers are spending more than required money on fertilizers. It is of great concern that each farmer is spending 60-70 % of cost of production only on fertilizers. KVK has conducted a survey on banana area and cost of production of crop in the Siddanur cluster of Davanagere taluk. Survey revealed that farmers are applying fertilizers indiscriminately. No farmer is aware of recommended dosage of fertilizers for banana. The role of micronutrients was known to very few farmers. Indian Institute of Horticultural Research, Hesaragatta, Bengalooru is producing micronutrient spray mixture "Banana special" for banana and made it available for our KVK to conduct FLD on the said technology

KVK intervention:

Spray schedule details:

Taralabalu Krishi Vigyan Kendra selected Siddanur cluster for FLD on use of banana special and Mr. Basavanagowda M.G., SMS (Horticulture) was deputed for the same during 2008-09. As a part of FLD, group meetings, trainings, field visits and field day were conducted. An exposure visit was organized for the group to precision farming area at Dharmapuri district to know the precision farming activities and direct interaction with practicing farmers.

In Siddanur and Kandanakovi villages of Davanagere (tq) twelve farmers were selected for the demonstration on use of banana special, six farmers under grandnaine and six

farmers under yelakki bale variety. Foliar application of Banana special was undertaken as per schedule and observations were recorded. Foliar spray schedule includes six sprays at 5, 6, 7 and 8th

month of planting. Fifth spray on emerged bunch and sixth spray was given one month after bunch emergence. The spray concentration should be 5 grams per liter water. For the better results of spray, one shampoo and one lemon liquid should be mixed in 20 liters of spray solution.

Effect of the technology among demonstrated farmers:

	G9	**Yelakki**
Demo Production (Average)	533.9 q/ha	225.9 q/ha
District Productivity (Average)	277.2 q/ha	-
Local check	400.1 q/ha	162.2 q/ha
Per unit expenditure	Rs. 1,40,510-00	1,26,549-00
Gross income	Rs. 3,73,730-00	3,38,850-00
Net income	Rs. 2,33,220-00	2,12,301-00
BC ratio	2.65	2.67

- **Suitability in the existing farming / cropping systems:**

  There is micronutrient deficiency observed among all the plots selected for demonstration. So, the technology is suitable to the area under study.

- **Acceptance of the technology by the farmers:**

  Farmers have accepted the technology, as it increases the productivity of the crop. It also provides the benefit of reducing the cost of production particularly of fertilizers.

- **Horizontal spread** :

  12 families directly and 50 families indirectly have realized the importance of banana special application. More than 550 kg of banana special has been sold through our KVK.

- **Substitution or replacement of commodities**:

  The technology substituted the excess use of fertilizers for the crop.

- **Social impact:**

  Formation of Siddanuru Bale Belegarara Sangha (Siddanuru Banana Growers Association) after the successful demonstration of Banana special technology

- **Marketing channels:**

  The Banana Growers Association has been linked with **SAFAL** market, Bengalooru. Farmers were taken to **SAFAL** market during the exposure visit arranged by KVK. They are selling the produce to wholesale merchants as well as **SAFAL** market.

- **Establishment of units:**

  The success of banana special technology led to the formation of Siddanuru Bale Belegarara Sangha and Sri Done Siddeshwara Vegetable Growers Association. These two Common Interest Groups (CIGs) are supported by NABARD for many agricultural activities. The Vegetable Growers Association has established **vegetable nursery unit** at Siddanuru and selling vegetable seedlings. There is a plan to multiply tissue culture banana seedlings in future.

  To encourage organic farming vermicompost units were established and produced compost is being used for the crops. Demonstrations on **Vegetable special,** another product from IIHR, Bengalooru for vegetables were taken up in Siddanuru cluster during past two years.

- **Linkage with development organizations:**

  In collaboration with IIHR, Bengalooru, we had conducted farmers scientist interaction for our banana growers. FLD Farmers shared their experiences of using this technology with the gathered scientists and other farmers.

- **CD developed, if any:**

  A documentary study on use of banana special by our SMS (Horituclture) was telecasted in Annadata programme of E-TV Kannada.

Publications printed:

1. The case study was presented as poster presentation on **use of banana special to increase bunch weight in banana** by Mr. M.G.Basavanagowda, SMS (Horticulture), Dr. Pradeep H.M. (Soil Science) and Dr. Devaraja T.N. (Programme Coordinator) at National conference on horticulture biodiversity in eve of Swadesh Prem Jagruthi Sanghosti 2010, Bangalore.

2. The Yashogathe of technology was published in Janathavani, Davanagere local news paper.

It is clear that there was a 33.44% increase in productivity of G9 variety and 39.27% incase of yelakki bale. Demonstrated technology helped in increasing the bunch weight and shelf life, there by fetching good market price and increased income to farmers. This resulted in purchase of more than 200 kg of Banana special by other than demonstrated farmers in Siddanur cluster.

Frontline demonstration on use of Banana special in Banana helped farmers in micro nutrient management in Banana. These farmers farmed “Siddanur Bale Belegarara Sangha” to help

themselves in production and marketing of Banana. 12 farm families directly and 50 farm families indirectly had understood the importance of application of micro nutrients in Banana production. This inturn will help all of them to produce better quality and quantity of banana in a given area. Therefore, our intervention has resulted in increased farm income per unit area with good agriculture practices.

Evidence:

The success of this intervention was measured through pre and post assessments (12 No.s) While selecting the farmers for this programme, their family survey was conducted. The data was collected on a prescribed format and the post intervention data was collected on the same format to assess the difference of improvement.

2. Case study : "Impact of Front Line Demonstration on High Yielding variety GPU-28 of Ragi" in Kurki village

Introduction:

Ragi, the staple food of poor men growing in the country since time immemorial. Increased are under maize has resulted in decreased area under minor millets, oil seeds and pulses in the last decade or so. The trend is same in ragi also. In davanagere District ragi is grown in 10362 ha, (15912 ha, 2008-09) with total production 15537 tones (23845.5 tons. 2008-09) and productivity 1499 kg/ha. (Source: Department of Agriculture, Davanagere 2009-10) Ragi, which is predominantly grown by poor and marginal farmers uses locally available varieties. These local varieties are poor yielders and less fodder production, resulting in little income to the farmers.

KVK interventions:

Taralabalu Krishi Vigyan Kendra conducted Frontline Demonstration on "Popularization of High Yielding Variety GPU-28 of Ragi" during kharif – 2007. Subject Matter Specialist Agronomy was incharge of this FLD. Twenty four farmers selected for this FLD in the following villages-1. Mellakatte (8 farmers) 2. Tholahunse (5 farmers) and 3. Kurki (11 farmers) in davanagere taluk.

On-campus training on "Production Technology in (GPU-28) ragi" was conducted on 25-6-2007. In the training important topics like seed treatment, application of fertilizer based on soil test results, spacing, seed rate, intercultivation and weed management were explained. Field visits (18-7-07 and 16-9-07) for regular monitoring and field day was conducted on 12-10-2007. Demonstrated variety i.e. GPU-28 of ragi produced yield of 22.00 q/ha when compared to 14.00 q/ha yield of local check.

Results and Discussion:

Village survey conducted during February 2011 to know the spread of GPU-28 ragi variety among farmers in Kurki village.

Table-1 Number of farmers growing GPU-28 variety among ragi growing farmers in Kurki village.

(N=320)

GPU-28		Other varieties	
Number	Percent	Number	Percent
256	80	64	20

It is clear from table-1 that among 320 ragi growing farmers, 256 farmers (80%) are growing GPU-28 variety and only 20% growing other varieties performance of GPU-28 variety in terms of yield, size of fingers, quality of grains and quantity and quality of fodder produced played major role in opting for the same. Demonstrated farmers had provided seeds (GPU-28) for neighboring farmers.

During the survey, farmers revealed that average yield of GPU-28 variety is 19.00-20.50 q/ha, in comparison to other varieties 14.00 to 15.95 q/ha. Correspondingly, income generated was Rs. 19000/- /ha., and Rs. 14000/ha incase of GPU-28 and other ragi variety respectively.

Since ragi is grown in rainfed and less fertile land, normally minimum efforts are devoted for crop management practices and in put application when compared to paddy or maize. Considering prevailing prices in the market, farmers cannot afford to spend more on inputs and management practices for production of ragi. In this situation GPU-28 variety introduced by KVK became best sought after ragi variety for ragi growing farmers in kurki village.

Front Line Demonstration conducted by Taralabalu Krishi Vigyan Kendra, Davanagere on 'Popularization of High Yielding Variety GPU-28 of Ragi" in Kurki village of Davanagere district almost replaced old local varieties of ragi. Yield levels and fodder quantity and quality used for rearing animals was found compatible with conditions prevailing in the village.

(s) Feedback

Crop/Enterprise	Farmers to KVK	KVK to Research
Rice	Integrated nutrient management reduces the cost of cultivation	Presence of black grains in particular varieties
Maize	Hybrids (NAH-2049, NAH-1137) performed well and seed should be easily available Raitha Sampark Kendra and in markets.	Filling of seeds in cob should be cmplet to get maximum yiled.
Redgram	High yielding variety BRG-2 performed well and can be used as both vegetables and dal purpose.	Even with integrated crop management practices incidence of pod borer noticed.
Bengalgram	Seed treatment with trichoderma and also soil application and timely follow up of integrated pest management practices reduces wilt and pod borer.	Need effective popularization of integrated pest and disease management practices.

French bean	Increased productivity better price in market, stringless nature of the variety helps in easing cooking qualities.	Need to provide more seeds for demosntation purpose before seed distribution it should be treated with bio-fertilizer.
Tomato	Incidence of fruit splitting reduced due to application of vegetable special.	Vegetable special should be made available at Raitha Samparka Kendra level.
Arecanut	Incidence of hidimundige can be effectively manged by proper drainage, loosening the hard soil, green manuring and trichoderma application.	Need to effectively popularize integrated disease management practices.
Mango	Foliar application of 'Mango Special' increases fruit size there by increases yield, fruit fly trap effectively controls fruit fly in mango	Need to make available mango special and fruit fly trap at Raitha Samparka Kendra.
Dairy cattle	Use of rubber mats helps in the production of quality milk and less incidence of mastitis	Need to popularize use of rubber mats andclean milk production practices.
Fisheries	Fish seed supply must be made economical through local production.	Fish fingerling size must be good (8-10 cm) for better production. Timely management of manuring, watering and adequate supplement any feed supply are critical to good production.

(t) SWOT analysis of the KVK
(In all aspects like Administrative, Technical, and Financial)

Strength	Weakness	Opportunities	Threats
• Young, energetic and dedicated team • Availability of all SMS to farmers. • Good support from host institution. • Good instructional farm. • Strategic location of KVK with easy access to farmers	• Big district with more than 3 lakh farm families to address. • Too many cotrolling/questioning authorities/agencies. • Varying focus as far as goals are concerned. • Incompetitive university technologies compared to private agencies. • Lack of funds for creative works such as rainwater harvesting, watershed	• Dynamic and diverse farming situation in the district. • Advanced science and technology options like ICT enables better coverage. • Increased collaborative activities with line departments and NGOs.	• Staff turnover • Untimely release of funds. • Lack of incentives to NGO employees • Excessive work load.

Strength	Weakness	Opportunities	Threats
	development, solar heating and light in instructional farm. • No soil and water testing laboratory. • To keep high morality of the staff, promotional benefits and other service benefits to staff of NGO KVK on par with ICAR employees should be made applicable by uniform policy at council level.	• Changing significance of KVK in improving the agricultural situation of the district. • As KVK is district level Transfer Of Technology project it is proud to say that KVK has been playing pivotal role in enhancing the agricultural production by transferring latest agricultural technologies to the farmers of the district.	

(w) Priorities recommended in the XII plan:

Following activities proposed in XII plan:

a. Raising quality cross breed heifers from calves for improved milk production in Davanagere disteict.

b. Awarness and production of bio fertilizers for improved and sustained agriculture production and productivity in Davanagere district.

c. Establishment of model hi-tech nursery with progeny block orchard to supply quality planting material material in Davanagere district.

e. Integrated crop management in cotton to improve the production and productivity in Davanagere district.

f. Seed production programme (including fisheries) for food security and to improve the socio-economic status of the farming community of Davanagere district.

(X) Problems / Issues related to agriculture and allied fields and their solutions:

Crop / Enterprises	Problem / Issues	Solutions
Rice	Excessive use of fertilizers (especially nitrogen) leading to diseases like Nematode, Blast, Sheath blight and bacterial leaf blight.	Application of recommended dose of fertilizers, application of micronutrients, growing insitu green manur a crops.

Maize	Weed menace stem borer and absence of intercrop.	Weedicides applications. Use of stem borer resistant hybrid (NAH 2049, NAH-1136), Redgram (BRG-2) as intercrop.
Groundnut	Groundnut leaf spot.	Use of leaf spot resistant variety GPBD-4.
Cotton	Closer spacing, leaf reddening, square and boll drying, sucking pest.	Wider spacing (4' x 3') micro nutrient application (Kno_3, $MgSO_4$), Use of yellow sticky traps. Spray with imidachlopride.
Betelvine	Wilt, Gall midge incidence in Erithrina standards (Supporting palnt) plant.	Integrated disease management practices, use of gall midge resistant erithrina standards.
Banana	Wilt and leaf spot, micro nutrient difficiency.	Integrated disease management practices. Use of banana special.
Coconut	Coconut balck headed hairy caterpillar mites.	Integrated pest management. Use of TNAU coconut tonic to strengthen the palms.
Arecanut	Premature dropping of nuts, hidimundige	Growing of cover crops (velvet benas), Drainage, Loosening of hard soil, avoid excess use of tank soil
Fisheries	Lower body weight gain in tank fisheries.	Proper stocking number and size, choose suitable species.
Dairy	Lower milk production. Infertility problem.	Balanced feeding. Hight yielding nutritious fodder (Co-3, DHN-6)