ANNUAL REPORT
2006 – 07

KRISHI VIGYAN KENDRA
BURDWAN

KRISHI VIGYAN KENDRA
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KRISHI VIGYAN KENDRA
BURDWAN

Annual Report (April 2006 to March 2007)

1. Name and address of the KVK (with pin code) : Krishi Vigyan Kendra,
Central Seed Research Station for Jute and Allied Fibres, Bud Bud,
Burdwan - 713 403
West Bengal

Name of Host Institution : Central Research Institute for Jute and Allied Fibres, (Indian Council of Agricultural Research)
Nilganj, Barrackpore
Kolkata – 700 120
West Bengal

Telegraphic Address : Krishi Vigyan Kendra,
Central Seed Research Station for Jute and Allied Fibres, Bud Bud,
Burdwan,
West Bengal 713 403

Telephone with STD Code

	STD Code	Phone No.
Office	0343	251 3651
Residence		

Name of Programme Coordinator, KVK : Dr. F. H. Rahman
(M) 9433586026

2. Staff Position

Name with Designation including Disciplines	Pay scale with present basic pay*	Date of joining*	Category SC/ST/Others
Dr. F. H. Rahman Programme Coordinator	Rs. 12000 – 420 – 18300 Basic – Rs. 12000	10.04.2007	GEN
Shri Dipankar Ghorai, Subject Matter Specialist (Agril.)	Rs. 8000-275-13500 Basic – Rs. 8275	26.04.2006	GEN
Shri Golam Ziauddin, Subject Matter Specialist (Fisheries)	Rs. 8000-275-13500 Basic – Rs. 8275	28.04.2006	GEN
Dr. Chandrakanta Jana, Subject Matter Specialist (AH & VS)	Rs. 8000-275-13500 Basic – Rs. 8275	29.04.2006	GEN
Dr. Subrata Sarkar, Subject Matter Specialist (Horticulture)	Rs. 8000-275-13500 Basic – Rs. 8000	04.05.2006	GEN
Shri Manoj Kumar, Subject Matter Specialist (Ag. Extn.)	Rs. 8000-275-13500 Basic – Rs. 8000	09.05.2006	OBC
Smt. Sujata Sethy, Subject Matter Specialist (Home Sc.)	Rs. 8000-275-13500 Basic – Rs. 8000	12.03.2007	SC
Shri Sandipan Garai, Programme Assistant	Rs. 5500-175-9000 Basic – Rs. 5675	18.04.2006	OBC
Shri Sk. Golam Rasul, Programme Assistant (Computer)	Rs. 5500-175-9000 Basic – Rs. 5675	10.04.2006	GEN
Shri Baidyanath Mukhopadhyay, Office Super-cum-Accountant	Rs. 5500-175-9000 Basic – Rs. 5675	15.03.2006	GEN

Name with Designation including Disciplines	Pay scale with present basic pay*	Date of joining*	Category SC/ST/Others
Shri Soumya Sarathi Kundu, Farm Manager	Rs. 5500-175-9000 Basic – Rs. 5500	06.01.2007	GEN
Shri Sushanta Dey, Stenographer-cum-Computer Operator	Rs. 4000-100-6000 Basic – Rs. 4100	20.03.2006	GEN
Shri Joydeep Pal, Driver-cum-mechannic	Rs. 3050-75-3950-80-4590 Basic Rs. 3050	06.07.2006	GEN
Shri Santi Nath Pal, Driver-cum-mechannic	Rs. 3050-75-3950-80-4590 Basic Rs. 3050	10.07.2006	GEN
Shri Shyamal Bhanja, Peon	Rs. 2550-55-2660-60-3200 Basic Rs. 2605	25.02.2006	GEN
Shri Anup Das, Cook	Rs. 2550-55-2660-60-3200 Basic Rs. 2605	01.03.2006	SC

3. Total land with KVK (ha) - 10 ha

a. Under Building	2 ha
b. Under Demonstration Unit	Nil
c. Under Crops	2 in 2006
d. Orchard/Agro-forestry	0.05 ha
e. Others	To be used in due course of time

4. Infrastructural Development

Sl. No.	Name of Building	Stage		Cost
		Complete	Incomplete	Estimate (for new building)
1	Administrative Building	Under construction		Rs. 43,12,000
2	Farmers Hostel	Under construction		Rs. 23,36,000
3	Staff Quarter (6)	Construction will commence shortly		Rs. 10,00,000 (1st installment)
4	Demonstration Unit	To be constructed		To be estimated

- Give details with plinth area

5. Description of agro-climatic zones and farming situations of the district

As per classification made under NARP, West Bengal has been classified under six zones. District Burdwan having diversified features, falls under three zones, namely old alluvial zone, new alluvial zone and red and laterite soil zone. The KVK farm at Bud Bud, however, falls under old alluvial zone.

Burdwan is the only district in the state of West Bengal that is fortunate both in industry and agriculture. On an average about 58 percent of the total population belongs to the agricultural population while the non-agricultural sector accounts for the remaining 42 percent.

The eastern, northern, southern and central areas of the district are extensively cultivated but the soils of the western portion being extreme lateritic type is unfit for cultivation except in the narrow valleys and depressions having rich soil. Rice is the most important crop of the district. Paddy covers maximum of the gross cropped area. Among commercial crops, jute, sugarcane, potato and oilseeds are major crops. Productivity of the major crops grown in the district is indicated below. Major cropping patterns include paddy-wheat-vegetables, paddy – potato – sesame, paddy – vegetable – mustard and jute – paddy – vegetables.

Major crops and productivity in Burdwan district - 2002-03

Sl. No.	Crop	Area (Thousand hectares)	Productivity (q/ha)
1.	Rice	647.484	29.82
	i) Autumn	26.341	28.92
	ii) Winter	404.986	29.75
	iii) Summer	216.157	30.08
2.	Wheat	4.915	22.60
	Total cereals	652.531	29.77
3.	Chickpea	0.743	8.11
4.	Lentil	0.904	10.66
	Total pulses	2.671	8.99
	Total foodgrains	655.202	29.69
5.	Rapeseed & mustard	42.206	8.58
8.	Sesame	4.501	8.57
	Total oil seeds	48.501	8.86
10.	Jute	17.786	33.01
11.	Mesta	0.033	22.42
12.	Sugarcane	0.705	662.88
13.	Potato	51.290	277.45

Sources: The Fertilizer Association of India, Eastern Region 2005. Fertilizer and Agriculture Statistics – Eastern Region (2004-05)

6. Thrust areas identified through PRA, survey or any other method

Major thrust areas identified through agro-ecosystem analysis of village Keten following PRA, and in meeting of Scientific Advisory Committee are listed below.

1. Popularization of improved agronomic practices for cultivation of field and vegetable crops for vertical agricultural growth
2. Production of quality seeds for major agricultural crops like rice, jute, mustard and vegetable crops
3. Production of quality planting materials for fruit and vegetable crops
4. Diversification of land use through introduction of floriculture in resource rich areas, and medicinal and aromatic plants on degraded lands
5. Breed upgradation of animal resources and improving its productivity through health care and feed management
6. Efficient utilization of water bodies through composite fish culture and improved management practices
7. Entrepreneurship development for family income generation through end-to-end approach, for lateral economic support
8. Development of sustainable agricultural practices with focus on organic farming

7. Training Achievement

A. Abstract of training programme (On-Campus, Off-Campus, sponsored training and FLD training)

Discipline	No. of training courses	SC			ST			Others			Grand Total		
		M	F	Total	M	F	Total	M	F	Total	M	F	**Total**
Practicing Farmers													
1. Crop Production	13	85	27	112	-	-	-	135	11	146	220	38	258
2. Horticulture	14	56	-	56	-	-	-	146	-	146	202	-	222
3. Live stock Production and Management	12	60 -	32 -	92 -	-	-	-	45	28	73	105	60	165
4. Home Science	1	-	-	-	-	-	-	-	12	12	-	12	12
5. Agril. Extn.	-	-	-	-	-	-	-	-	-	-	-	-	-
6. Plant Protection	-	-	-	-	-	-	-	-	-	-	-	-	-
7. Fisheries	11	81	0	81	-	-	-	38	0	38	119	0	119
8. Others													
Total	**51**	**282**	**59**	**341**				**364**	**51**	**415**	**646**	**110**	**776**
Rural Youth													
1. Vegetative propagation of fruit plants	3	6	2	8	-	-	-	10	7	17	16	9	25
2. Mushroom cultivation	2	4	4	8	-	-	-	20	22	42	24	26	50
3. Fisheries	2	17	0	17				9	0	9	26	0	26
Total	**7**	**27**	**6**	**33**				**39**	**29**	**68**	**66**	**35**	**101**
Extension Functionaries	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	-	-	-	-	-	-	-
Grand total	**58**	**309**	**65**	**374**				**403**	**80**	**483**	**712**	**145**	**877**

B. Details of training achievement (On-Campus)

Discipline	Title of training courses	SC			ST			Others			Grand Total		
		M	F	Total	M	F	Total	M	F	Total	M	F	**Total**
Practicing Farmers 1. Crop Production 2. Horticulture 3. Live stock Production and Management 4. Home Science 5. Agril. Extn. 6. Plant Protection 7. Fisheries 8. Others													
Total				NIL			NIL			NIL			NIL
Rural Youth 1. 2.													
Total													
Extension Functionaries													
Total				NIL			NIL			NIL			NIL

C. Details of training achievement (Off-Campus)

Practicing farmers

Discipline	Title of training courses	SC			ST			Others			Grand Total		
		M	F	Total	M	F	Total	M	F	Total	M	F	**Total**
Crop Production	**a. For practicing farmers**												
	Improved cultivation techniques of jute and jute-based cropping systems	-	-	-	-	-	-	8	0	8	8	0	8
	Post harvest operations in jute	10	-	10	-	-	-	15	-	15	25	-	25
	Seed treatment & nursery management of paddy	-	-	-	-	-	-	5	-	5	5	-	5
	Integrated nutrient management of paddy	-	-	-	-	-	-	5	-	5	5	-	5
	STCR based fertilizer application for paddy	8	-	8	-	-	-	12	-	12	20	-	20
	Pest and disease control of paddy	20	-	20	-	-	-	36	-	36	56	-	56
	Hand on training on utilization of biofertiliser in kharif rice	1	-	1	-	-	-	9	-	9	10	-	10
	Soil sampling and soil preparation for testing	4	-	4	-	-	-	8	-	8	12	-	12
	Improved production technology of mustard	10	-	10	-	-	-	17	-	17	27	-	27
	Improved production technology of lentil	10	-	10	-	-	-	5	-	5	15	-	15
	Improved production technology of sesame	12	-	12	-	-	-	9	-	9	21	-	21
	b. For rural youth												
	Mushroom cultivation techniques for entrepreneurship development	10	5	15	-	-	-	6	3	9	16	8	24
	c. For farm women												
	Mushroom cultivation for food supplementation	-	22	22	-	-	-	-	8	8	-	30	30
Total		**85**	**27**	**112**	**-**	**-**	**-**	**135**	**11**	**146**	**220**	**38**	**258**

Practicing farmers

Discipline	Title of training courses	SC			ST			Others			Grand Total		
		M	F	Total	M	F	Total	M	F	Total	M	F	**Total**
Horticulture	Seed production techniques of winter vegetable crops	8	-	8	-	-	-	17	-	17	25	-	25
	Seed bed preparation for vegetables	5	-	5	-	-	-	15	0	15	20	0	20
	Seed production techniques of Summer vegetable crops	10	-	10	-	-	-	15	-	15	25	-	25
	Nursery management in vegetable crops	7	-	7	-	-	-	13	-	13	20	-	20
	Cultivation of off season (early) cauliflower	6	-	6	-	-	-	14	-	14	20	-	20
	Management of physiological disorder pests and diseases of cauliflower	5	-	5	-	-	-	15	-	15	20	-	20
	Seed treatment of potato	2	-	2	-	-	-	20	-	20	22	-	22
	Identification of production problem of potato and their management	2	-	2	-	-	-	18	-	18	20	-	20
	Identification of major insect pest and diseases of winter vegetables (other than potato)	6	-	6	-	-	-	14	-	14	20	-	20
	Cultivation of summer vegetables	5	-	5	-	-	-	10	-	10	15	-	15
	Management of major pest and diseases of summer vegetables	5	-	5	-	-	-	10	-	10	15	-	15
Total		**56**		**56**	**0**	**0**	**0**	**146**		**146**	**202**		**222**

Rural youth

Title of training courses	SC			ST			Others			Grand Total		
	M	F	Total	M	F	Total	M	F	Total	M	F	**Total**
Vegetative propagation techniques of important horticultural crops	6	2	8	-	-	-	10	7	17	16	9	25
Total	**6**	**2**	**8**	**-**	**-**	**-**	**10**	**7**	**17**	**16**	**9**	**25**

Practicing farmers

Discipline	Title of training courses	SC			ST			Others			Grand Total		
		M	F	Total	M	F	Total	M	F	Total	M	F	Total
Livestock production and management	Duck rearing	12	1	13	-	-	-	3	0	3	15	1	16
	Duck management and care	4	0	4	-	-	-	3	7	10	7	7	14
	Backyard poultry farming	10	1	11	-	-	-	8	0	8	18	1	19
	Feed management of cattle	0	4	4	-	-	-	6	0	6	6	4	10
	Bed preparation and cultivation technique of hybrid napier	-	-	-	-	-	-	4	3	7	4	3	7
	Primary health care of cattle	-	-	-	-	-	-	8	2	10	8	2	10
	Cattle shed management and sanitation	-	-	-	-	-	-	10	8	18	10	8	18
	Feed management of goat and sheep	8	2	10	-	-	-	-	-	-	8	2	10
	Care and precaution against PPR of goat and sheep	8	9	17	-	-	-	-	-	-	8	9	17
	Preventive measures for RD and fowl pox of poultry	8	3	11	-	-	-	-	-	-	8	3	11
	Quality improvement of poor quality roughages	10	2	12	-	-	-	3	4	7	13	6	19
	Enhancement of keeping quality of table egg	-	10	10	-	-	-		4	4		14	14
Total		**60**	**32**	**92**				**45**	**28**	**73**	**105**	**60**	**165**

Practicing farmers

Discipline	Title of training courses	SC			ST			Others			Grand Total		
		M	F	Total	M	F	Total	M	F	Total	M	F	Total
Fisheries	Principles of composite fish culture in seasonal ponds	14	-	14	-	-	-	11	0	11	11	0	25
	Different types of aquatic weed and its control	8	0	8	-	-	-	4	0	4	12	0	12
	Aquatic weed management and optimization of fish production scope and possible uses of aquatic weeds	7	0	7	-	-	-	3	0	3	10	0	10
	General methodology of composite fish culture	10	0	10	-	-	-	1	0	1	11	0	11
	Nutritional requirements of IMC	10	0	10	-	-	-	4	0	4	14	0	14
	Pond productivity and fertilization	7	0	7	-	-	-	3	0	3	10	0	10
	Feed formulation for IMC	8	0	8	-	-	-	4	0	4	12	0	12
	Commonly encountered diseases of IMC	7	0	7	-	-	-	3	0	3	10	0	10
	Prevention and control of diseases IMC	10	0	10	-	-	-	5	0	5	15	0	15
Total		**81**	**0**	**81**	**0**	**0**	**0**	**38**	**0**	**38**	**119**	**0**	**119**

Rural youth

Discipline	Title of training courses	SC			ST			Others			Grand Total		
		M	F	Total	M	F	Total	M	F	Total	M	F	**Total**
Fisheries	Principles of composite fish culture in seasonal ponds	11	-	11	-	-	-	4	0	4	15	0	15
	General methodology of composite fish culture	6	0	6	-	-	-	5	0	5	11	0	11
Total		**17**	**0**	**17**	**-**	**-**	**-**	**9**	**0**	**9**	**26**	**0**	**26**

Practicing Farm Women

Discipline	Title of training courses	SC			ST			Others			Grand Total		
		M	F	Total	M	F	Total	M	F	Total	M	F	**Total**
Home Science	Conservation of nutrients during cooking of food	-	-	-	-	-	-	-	12	12	-	12	12
Total		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**12**	**12**	**-**	**12**	**12**

D. Sponsored Training Programmes

Subject	Title of Training	Month	Duration (Days)	No. of participants			Type of participant	Sponsoring Agency
				Male	Female	Total		
			NIL			NIL		

8. Result of Front Line Demonstration

A) Oilseeds:

Season: Rabi Year: 2006 - 2007

Crop	Area (ha)		No. of Farmer / Demo	Remarks
	Proposed	Actual		
Mustard	5.0 ha	5.0 ha	26	The average yield in the demonstration was 10.7 q/ha whereas local check yielded only 9 q/ha.
Sesame	2.0 ha	2.0 ha	15	The average yield in the demonstration was 11.5 q/ha whereas local check yielded only 9.2 q/ha.
Total	7.0 ha	7.0 ha	41	---

N. B. Attach a few good photographs with title at the back of photographs with pencil

B) Pulses

Season: Year:

Crop	Area (ha)		No. of Farmer / Demo	Remarks
	Proposed	Actual		
Lentil	1.0 ha	1.0 ha	12	Average yield obtained in the demonstration was 11.3 q/ha whereas yield of local check was 9.3 q/ha.
Total	1.0 ha	1.0 ha	12	----

N. B. Attach a few good photographs with title at the back of photographs with pencil

C) Performance of FLD demonstration for pulse in the district

Crop: Lentil
Season: Rabi
Sowing date: 20.12.06
Harvesting date: 28.3.07
Situation: Medium upland
District: Burdwan
Agro-climatic Zone: New alluvium
Previous crop pattern: Rice- lentil – vegetables, Rice - lentil – jute
Status of NPK:
Initial - Av. N: 255 kg/ha, Av. P: 67 kg /ha, Av. K : 230 kg/ha, pH : 5.2, Org. carbon: 0.56%
Rain fall distribution:

Variety	No. of farmer	Area (ha)	Yield of demonstration			Increase in yield (%)	Cost of additional cash	
			Highest	Lowest	Avg.		Demo	Local check
B-256	13	1.0	12.0	9.0	11.3	29	2512	2330
Total								

D) Farming situation and result and demonstration on Oilseeds

Sl. No	Agro-Climatic Zone	Dist.	Soil Type	Variety	Date of sowing	Date of Harvesting	No. of Demo	Area (ha)	Highest Yield Q/ha	Avg. Yield Q/ha	Cost Input (Rs./ha)	Local Check (Rs./ha)	Cost benefit ratio
Mustard	New Alluvium	Burdwan	Clay loam	B – 9	25.11.06	30.2.07	26	5.0 ha	13.5	10.7	2966	2800	18.43
Sesame	New Alluvium	Burdwan	Clay loam	B - 67	20.3.2007	21.6.07	21	2.0 ha	14.0	11.5	Yet to calculate		
						Total							

E) Analytical Review of component demonstration

Name of Centre	Component	Farming situation	Average Yield	Local Check Yield	Percentage Increase in Productivity over Local Yield
	1.Seed A) Variety 2. Bio-Fertilizer PBB + culture 3. Fertilizer Management 4. Plant Protection 5. Combination of component A) NPK + Gypsum B) Improved Seed + Gypsum		N/A		

F) Technical Feedback

Club root disease was encountered in some plots out of the 26 demonstrations. The disease though prevalent in the village was not recognized by the farmers. Needs appropriate technology to control the disease.

G) Farmers' reaction

Farmers were in general happy with the outcome.

H) Extension and training activities

- Number of field days organized with date : One on 26.2.2007
- Number of participants : 135
- Number of Farmers training: 3
- Number of participants: 83

I) Result F. L. Ds other than Oilseed and Pulse Crops

Season: Year:

Crop	Area (ha)		No. of Farmer / Demo	Remarks
	Proposed	Actual		
Jute	1.50	1.50	18	New introduction in KVK adopted village. The crop taken on light upland soils was badly damaged due to inadequacy of rainfall. Other fields were monitored regularly for pest and diseases and necessary protective measures were taken. A total of 12 farmers got fibre yield in the range of 15 – 30 q/ha and fetched relatively higher return.
Paddy	4.00	4.00	35	The entire area under demonstration was inundated due to heavy downpour and remained so for a week or so during the panicle initiation stage, thereby damaging the crop to a large degree. Hence yield obtained was generally poor ranging between 22.5 – 40 q/ha
Total	**5.50**	**5.50**	**53**	

N. B. *Attach a few good photographs with title at the back of photographs with pencil*

2) Result F. L. Ds other than Oilseed and Pulse Crops

Sl	Animal/ bird	Breed	No. of rearers	Total no of animals/ birds	Av. Production (milk/egg/ meat/ kid)	Local breed as check		Improved breed		Increase		Net loss (Rs.)	Effct. Gain (Rs)
						C	R	C	R	C	R		
1.	Duck	Khaki Campbell	10	100	240 eggs	Nil	200	100	500	100	300		200

C= Cost (Rs.)/ animal or bird, R= Return (Rs.) / animal or bird

9. *(a) No. of On-farm Trials*

Crops	Varietal /Feed Evaluation	Nutrient/ Feed Management	Cropping system	Zero Tillage	Weed Management	Insect/ Disease Management	**Total**
Cereals		2					2
Oilseeds							
Pulses							
Commercial Crops							
Vegetables, Fruits & Flower						2	2
Animal Science		1					1
Fishery Science		1					1
Total		**4**				2	**6**

OFT-1. Integrated Nutrient Management on paddy

1. **Problem definition** : Rice is the principal crop of Burdwan. Farmers generally complain about insufficient productivity of rice which may be attributed to lack of use organic matter thereby loss in soil health.
2. **Production System** : Rice based
3. **Micro farming system** : Medium upland to lowland
4. **Hypothesis** : Green manure and biofertilizer is effective in augmenting nutrient requirement besides maintaining soil quality
5. **Treatment** : T1 : Control (no application of fertilizer)
   T2 : Application of N at recommended doses (N:P:K = 80:40:40)
   T3 : Seedling inoculation with azospirillum / azotobacter + 75% of recommended N dose.
   T4 : Farmers' practice (N:P:K = 60:60:45)
6. **Critical inputs** : Fertiliser, biofertiliser
7. **Unit size** : 0.08 ha
8. **No. of replication** : 5
11. **Observation** :
    - Yield attributing characters
    - Yield
    - Economics

Results:

Treatment	Plant height (cm)	No. of effective tillers/hill	Yield (q/ha)	Input cost (Rs./ha)	Gross return (Rs./ha)	Return : Cost
T_1	116	22	47.6	13825	23800	1.72
T_2	135	28	53.6	15825	26800	1.69
T_3	145	35	60	16050	30000	1.87
T_4	126	26	52	16150	26000	1.61
Average	130.5	27.75	53.3	15462	26650	1.72
LSD at 5%	8.56	3.64	4.01			

The trial was set with 4 treatments with 5 replications in randomized blocks. Treatments included control, application of N at recommended doses, seedling inoculation with azospirillum azotobacter + 75% of recommended N and farmers' practice. Results revealed that as much as 60 q/ha of rice yield can be obtained through supplementation of nutrient requirement through biofertiliser. Yield was significantly higher (LSD 4.01) than farmers practice (52 q/ha). Recommended dose of fertilizer also recorded higher yield (53.6 q/ha) as compared to farmers' practice but was non-significant. Lowest yield was obtained in control (47.6 q/ha).

OFT-2. Soil test based fertilizer application in paddy

1. **Problem definition** : Rice is the principal crop of Burdwan. Farmers generally complain about enhanced production cost vis-à-vis insufficient return. This can be attributed to application of fertilizer in an inappropriate and unbalanced manner which result in enhanced production cost.
2. **Production System** : Rice based
3. **Micro farming system** : Medium upland to lowland
4. **Hypothesis** : Soil test based fertilizer application besides saving fertilizer takes care of soil health due to balanced application
5. **Treatment** : T1 : Control (no application of fertilizer)
   T2 : Soil test-based application of N-P-K
   T3 : Application of N-P-K at recommended doses (N:P:K = 80:40:40)

T4 : Farmers' practice (N:P:K = 60:60:45)

6. **Critical inputs** : Fertiliser
7. **Unit size** : 0.05 ha
8. **No. of replication** : 5
11. **Observation** :
    - Initial nutrient status
    - Yield attributing characters
    - Yield
    - Economics

Results:

Treatment	Plant height (cm)	No. of effective tillers/hill	Yield (q/ha)	Input cost (Rs/ha)	Gross return (Rs/ha)	Cost : Return
T_1	116	22	43.4	12525	21700	1.73
T_2	135	28	53.8	13625	26900	1.97
T_3	145	35	54.4	14650	27200	1.86
T_4	126	26	50.4	14250	25200	1.77
Average	130.5	27.75	50.5	13762	25250	1.83
LSD at 5%	8.56	3.64	4.76			

The trial was set with four treatments with 5 replication in randomized blocks. Treatments included control, application of N at recommended doses, soil test-based application of N-P-K and farmers' practice.

Results revealed that soil test based application (53.8 q/ha), farmers practice (50.4 q/ha) and recommended dose (54.4 q/ha) yielded at par and was significantly higher (LSD 4.76) than control (43.4 q/ha). Here farmers benefited quantitatively from less expenses towards fertiliser in case of soil test based application and qualitatively from improved soil health through balanced use of fertilizer.

OFT- 3. Assessment of management practices against late blight disease of Potato

1. **Problem definition** : Severe late blight infestation leading to high protection cost with low yield
2. **Production System** : Vegetable based
3. **Micro farming system** : Medium land under irrigated condition
4. **Hypothesis** : Trichoderma is a safe substance that minimize the late blight infestation by reducing the microbial load in soil
5. **Treatment** : T1 = Seed tuber treatment + spray with Mancozeb
   T2 = Seed tuber treatment + spray with Metalaxyl and Mancozeb

T3 =Seed tuber treatment + soil application and foliar spray of *Trichoderma viridae* + Foliar spray of Mancozeb

6. **Critical inputs** : Trichoderma & fungicides
7. **Unit size** : 0.04 ha
8. **No. of replication** : 7
9. **Unit cost** : Rs. 71.00
10. **Total cost** : Rs. 500.00
11. **Observation** : No. of tubers/plant, weight of tubers/plant, yield, cost benefit ratio

Results

The observation was recorded after the appearance of symptoms at 15 days interval. 10 randomly selected plants from each bed were considered for scoring using the 1-9 scale (British Mycological Society, 1945). Percent disease index (PDI) was calculated based on the formula given by McKinney (1923)

$$PDI = \frac{\text{Sum of all numerical ratings x 100}}{\text{Total number of leaves observed x maximum rating}}$$

Treatment	d1	d2	d3
T1	17.4286	24.7429	31.1857
T2	12.2286	17.7571	20.0143
T3	5.0857	6.7286	11.6714

Components	SED	CD(0.05)	CD(0.01)
T	0.66367	1.33446	1.78036
D	0.66367	1.33446	1.78036
Td	1.14950	2.31136	3.08368

T: Treatment, D: Date of interval, TD: Treatment x Date of interval

Treatment	**Tuber No./plant**	**Wt. of tuber/plant (gm)**	**Yield (t/ha)**	**Gross return**	**Net return**	**Benefit-cost ratio**
T1	8.70	576	28.20	157300	95400	2.54
T2	9.20	625	30.00	168200	106100	2.70
T3	11.60	750	34.20	192100	132200	3.20
CD (0.05)	1.23	33.59	1.40			
CD (0.01)	1.72	47.59	1.97			
EMS	1.12	849.83	1.46			

Discussion

It is evident from the above results that application of Trichoderma along with Mancozeb was the most effective measure to suppress the disease infestation, more particularly at the early stage of crop growth, which was reflected in terms of higher yield and yield attributing traits.

OFT 4: Assessment of IPM and chemical measures against fruit and shoot borer, phomopsis blight and bacterial wilt of brinjal

1.	Problem definition	Several insect, pest and disease invasion is one of the prime factors for low productivity in brinjal. Excess use of pesticides and fungicides without judging their specificity is a very common practice by the brinjal growers. It has several disadvantages, not only the high cost of pesticides but their residual effects as well as it induces resistance of pest and microbes towards pesticides. As a result farmers are increasing the amount and frequency of pesticides but not getting any positive result.
2.	Production System	Irrigated vegetable based
3.	Micro-farming system	Medium to upland. Average temperature in hot season is 30^{o}C while at the cold season it is 20^{o}C. Average rainfall is 1500 millimeter. The cold season starts from about the middle of November and continues till the end of February. March to May is dry summer intervened by tropical cyclones and storms. June to September is wet summer while October and November is autumn.
4.	Hypothesis	Sole reliance on pesticides and disregards for deleterious side effects can no longer be accepted. Shift is urgently required in view of rationalizing the pesticides uses through the integration of several management practices to minimize over reliance on pesticides and to minimize the plant protection cost.
5.	Treatment*	**T_1 : IPM approach** **T_2 : Selective chemicals** **T_3 : Farmers practice**
6.	Critical inputs	Seeds, plant protection chemicals, Pheromone traps.
7.	Unit size	570 sq. m.
8.	No. of replication	7
9.	Unit cost	Rs. 650
10.	Total cost	Rs. 4550
11.	Monitoring indicators	• Percentage pest and disease infestation. • Seasonality of the pest and diseases. • Yield, vigour and fruit colour • Cost effectiveness. • Farmer's assessment

*** Treatment details**

T_1-

- Hot water seed treatment.
- Seedling treatment with Streptocycline
- Periodical removal & destruction of early infected fruit & shoots
- Application of neem cake/oil cake.
- Installation of sex pheromone traps.
- Alternate spray of neem based pesticides.
- Need based application of animal origin insecticide i.e., Cartap Hydrochloride.

T_2-

- Soil application of Carbofuran 3G @ 5g/plant
- Spray of Quinolphos + Cypermethrin combination.
- Seedling treatment with Streptocycline.
- Foliar spray of Chlorothalonin.
- Foliar spray of Streptocycline

T_3- Phorate (10g/plant, after transplanting and again 45 DAT), Cypermethrin and Dithane M-45 (applied very frequently about 7-10 days interval)

Results: Crop is standing. Result is awaited.

OFT-5. Assessment of effect of mineral supplementation on egg production and hatchability of poultry under backyard condition

1.	**Problem definition**	:	Poor hen egg production with under weight and thin shelled egg at village. It is mainly due to lack of suitable breed for backyard rearing and mineral deficiencies particularly during laying stage.
2.	**Production System**	:	Semi-intensive
3.	**Micro farming system**	:	House hold rearing with a flock of 5-6 chicks
4.	**Hypothesis**	:	Suitable breed for backyard rearing and feed supplementation will increase the productivity of egg and minimize the thin shelled and under weight egg production.
5.	**Treatment**	:	T_1 = Farmers' practiced (Deshi bird rearing without any vaccine and mineral supplementation) T_2 = Divyayan Red without minerals supplementation T_3 = Divyayan Red with minerals supplementation @ 2.5g/100 birds (Mineral mixture composed of Calcium, phosphorus, sodium chloride, iron, copper, zinc, mangenese, cobalt)
6.	**Critical inputs**	:	20 days- old chicks of Divyayan Red, Minerals
7.	**Unit size**	:	4 chicks
8.	**No. of replication**	:	7
9.	**Unit cost**	:	Rs. 400.00

10. **Total cost** : Rs. 2800.00
11. **Observation** : Growth performance
Age of 1st laying
Egg production per year
Weight of egg
Shell thickness.
Hatchability under broody hen

Results:

Treatment	**Age of 1st laying (day)**	**Wt at 1st laying (kg)**	**Wt of egg (g)**	**Shell thickness (mm)**	**Hatchability (%)**	**Chicks mortality (%)**
T1	225	1.4	36	0.32	65	15
T2	180	1.9	53	0.36	63	10
T3	170	2.0	55	0.39	65	8

Poultry rearing in rural areas utilizing chicken variety which demand low input in terms of nutrition and management and perform better than available indigenous poultry birds has been adopted with the aim of increasing the availability of poultry products in villages and thereby increase the health as well as economic status of rural population. An impressive growth has been achieved under free range conditions in Divyayan Red breed with daily mineral supplementation in compare to local indigenous poultry birds. The poultry raisers generally used to fed waste grain, vegetable leaves, grass, broken rie, kitchen waste, insect, water spinach (*Ipomea reptans*). Health care approaches are deworming, vaccination against Infectious bursal disease, Rani khet disease and Fowl pox; and routine disinfection of night shelter with Potassium permanganate and formalin. Average egg production within 6 month of laying in Divyayan Red breed with daily mineral supplementation was 90, where as in case of deshi hen it was 45 eggs.

OFT-6. Nutrient management based on the chemical condition of bottom soil in ponds in relation to production of fish

1. **Problem definition** : The ponds of ketan in Burdwan district having problem of water scarcity round the year. The primary productivity of those ponds is very low. This may be the reason for poor fish productivity in domestic small and medium sized pond.
2. **Production System** : Modified extensive system
3. **Micro farming system** : Medium or small sized domestic water bodies
4. **Hypothesis** : Application of soil test based fertilizer in proper doses would increase the productivity of fish
5. **Treatment** : **T_1= Farmers' practice (Stocking density 7500 nos fish/ha) without application of fertilizers**
   T_2= Farmers' practice (Stocking density 7500 nos fish/ha) with indiscriminate use of fertilizers
   T3 = Stocking density 7500 nos fish/ha with indproper dose of fertilizers
   T_4 = Stocking density 7500 nos fish/ha with use of fertilizers in excess amount of fertilizers
6. **Critical inputs** : Fish seed, fertilizers.
7. **Unit size** : 0.066 ha
8. **No. of replication** : 7
9. **Unit cost** : Rs. 850
10. **Total cost** : Rs. 6000
11. **Observation** : Length weight data, Growth rate
    Yield performance

Results of on farm testing on fisheries

Details of on stocking, growth rate and production details of the ponds

	T_1	T_2	T_3	T_4
Area	0.67	0.6	0.4	0.3
Stocking density of fingerling (no./ha)	10000	9000	11000	8000
Initial mean length (mm)	94.6 ± 3.2	97.2 ± 2.3	96.0 ± 2.9	92.0 ± 5.0
Final mean length (mm)	210 ± 2.1	212 ± 2.6	208 ± 3.1	204 ± 3.3
Initial average weight (gm)	14.0	13.0	13.0	14.0
Final mean weight (gm)	510.5 ± 7.3	480.4 ± 8.2	502.5 ± 7.1	490.0± 6.4
Daily growth increment per fish (gm/day)	1.5	1.4	1.4	1.4
Total productivity (tonne/ha)	1.3	1.5	1.6	1.2

Highest yield of fish was recorded in **T_3** compared to T_1, T_2 and T_4 by the recommended dose organic and inorganic fertilizers. It is evident from the result that T_1 showed higher growth rate as compared to T_1, T_2 and T_4. . Application organic and inorganic fertilizers are very much necessary for better growth rate of fish and higher production.

(b) On –station trial

Crops	Varietal /Feed Evaluation	Nutrient/ Feed Management	Cropping system	Zero Tillage	Weed Management	Insect/ Disease Management	**Total**
Cereals		1					1
Oilseeds							
Pulses							
Commercial Crops							
Vegetables, Fruits & Flower	5						5
Animal Science	1						1

Training on seed treatment of paddy

A contrast between farmers' seed and seed arranged by the KVK for paddy

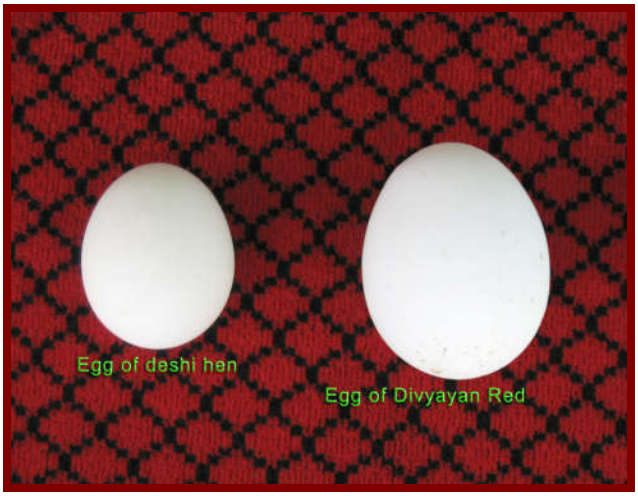
Weeding being done in on station trial on jute

FLD on mustard

Khaki Campbell duck

Egg of Khaki Campbell

Flock of Divyayan Red



Comparison between eggs of deshi hen and Divyayan Red

Gladiolus introduction in village

Advanced fish fingerling

Potato treated with *Trichoderma*

Muktokeshi brinjal for seed production

10. *(a) Literature Developed / Published (with full title, author and reference)*

Research Papers
1.
2.
-
-
Technical Report
1.
2.
3.
-
-
Technical Bulletins NIL
1.
2.
3.
-
-
Popular Articles
1.
2.
3.
-
Extension Literature : Leaflets in Bengali language have been prepared on the following topics and distributed to the farmers of the KVK-adopted village. The leaflets are, however, to be printed. Posters on disease and pest management of paddy were also developed
1. Post-harvest operations of jute
2. Paddy cultivation
3. Mushroom cultivation
4. Fruit orchard development
5. Fruit cultivation
6. Vegetable seedling production
7. Composite fish culture
8. Backyard poultry
9. Cattle feed management
10. Duckary
11. Cultivation technique of hybrid napier
12. Production technology of mustard
13. Production technology of lentil
14. Proper identification and control of pest and disease of paddy

N. B. *Please enclose a copy of each. In case of literature prepared in local language please the title in English.*

(b) News letter published

Name of news letter	Publication Monthly/half yearly	Circulation		NGO	SAU	Govt. Dept.
		Panchayats	Farmers			
		NIL	NIL			

11. Success story / Case Study if any
(Two-three pages write –up with suitable photographs)

The KVK has started functioning in a full-fledged way since May 2006. It is too early in providing success story or case study.

12. Constrains

a. Administrative NIL
-
-

b. Financial NIL
-
-

c. Technical NIL
-

13. Functional linkage with different organizations

Name of organisation	**Type of linkage**
State seed corporation	Foundation and certified paddy seed supply
Department of Agriculture, Govt. of West Bengal	Time to time planning execution
Animal Resources Development, Govt. of West Bengal	• ducklings supply • Vaccination camp against FMD, PPR, Rani khet disease • Health camp against infertility
Department of Fisheries, Govt. of West Bengal	• fish fingerlings supply • Training on fish culture, management • Awareness camp on subsidized loan scheme, fisherman identity card
Bidhan Chandra Krishi Viswavidyalaya	Time to time planning execution Fruit trees collection
Men at Work	Help in farmers trip

N. B. *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 Programme and demonstration or any other.*

14. Performance of demonstration units (other than crops)

Demonstration unit	**Total production (q)**	
	Cost of input	Gross income
1. 2. 3. -	NIL	

15. Performance of Instructional Farm (crops), including seed production

Sl No	**Name of crops**	**Area Covered (ha)**	**Variety**	**Date of sowing/ transplanting**	**Date of Harvesting**	**Cost of inputs (Rs)**	**Total Production**	**Gross income (Rs)**	**Remarks**
1.	Jute	0.2	JRO8432	18.5.06	7.9.06	1600	16 kg seed	--	
2.	Paddy	0.5	MTU7029	1.9.06	16.12.07	7500	16 q	12800	
3.	Early season cauliflower	0.005	Early kunwari	20/07/06	26/08/06	2500	18,000 seedlings	4800	16000 seedlings sold to farmers
4.	Hybrid napier	0.05	Hybrid napier	17/06/06	Every 45 days	200	200 kg	200	-
5.	Okra	0.02	Arka Anamika			220	3kg seeds	500	sold to farmers

16. Utilization of Hostel Facilities

Accommodation available (No. of beds)

Months	No. of trainees stayed	Trainee days (days stayed)	Reasons for short fall (if any)
April May June March	The hostel is yet to be constructed		

17. Indicate any innovative technology of any innovative methodology of transfer of technology developed during the year.

i)

ii) NIL

iii)

18. Indicate any indigenous technology practiced by farmer in the KVK operational area which can be considered for technology development (in details with suitable photographs)

Indigenous knowledge-based practices using locally available plant materials are adopted by almost all the farmers for animal rearing. The farmers take special care for raising the plants which are used to treat the ailing animals. Examples of ITKs which are in practice in the village are furnished below:

Sl. No.	Ailment / problem	Plant material	Methodology
1.	Deworming for cattle and goat	**Kalmeg**	Paste of leaves of **kalmeg** is made in water which is drenched orally.
2.	Foot and mouth disease in cattle	**Neem**	Leaves and twigs (20g) of **neem** are boiled in water (1 liter) till the colour of leaves turn greyish. The decoction, after cooling, is applied externally on the affected area.
3.	Diarrhoea of cattle and goat	**Lonka suti**	Paste of branch of **lonka suti** (2 for adult cow and 1 for goat) in semi-solid form is fed to the affected animals for 2 days.
4.	Fever (HS) for cattle and goat	Black pepper	Black pepper is mixed with **ghee** and fed to the affected animals.
5.	Setting of fractured bone of small and large animals	**Harjora**	Paste of **harjora** is applied on the affected area which is fixed by using bamboo stick.

Harjora

Lonka suti

19. Indicate the specific training need tools or methodology followed for:

Identification of course for farmers, farm women and rural youth **:**
Through PRA and group discussion

In-service personnel**:** Not yet conducted

20. Any other station programme under taken by the KVK which has been financed by state Government and other agencies

Bharatpur Yubak Sangha on behalf of farmers of Bharatpur village in Galsi – I block of Burdwan district sought help of KVK regarding training on improved methodology of cultivation of crops and other aspects like animal husbandry and fisheries. In response to the request Subject Matter Specialists of KVK, Burdwan went to Bharatpur and imparted training on cultivation of early season vegetable, crops, mushroom cultivation, composite fish culture and backyard poultry farming on 14.09.2006 which was participated by 30 farm men and women. Expenses on transit and others were borne by Bharatpur Yubak Sangha.

20. (A) Indicate the seed/seedling produced and sold to the farmers

(a) For all crops

Sl. No.	Crop	Variety	Quantity (in quintals)/No.	Quantity sold (q)
1	Cauliflower	Early Kunwari	18000 seedlings	16000 seedlings
2.	Okra	Arka Anamika	5 kg	3 kg

(c) Village seed production

Sl. No.	Crop	Variety	Quantity (in quintals)	Quantity sold (q)
		NIL		

21. Scientific Advisory Meeting(s) (SAC): Please indicate the date(s) of meeting(s):

Recommendations and action taken on the proceedings of Second meeting of SAC held on June 20, 2006

Sl. No.	Salient Recommendations	Action Taken
1.	The possibility of production of jute seed in the village may be explored during 2007.	Will be explored in 2007.
2.	Next meeting of the SAC may be conducted before the rabi season.	Will be conducted accordingly.
3.	Field days may be organized, linked with the FLDs.	Will be attended.
4.	As there is limitation for the KVK for creating water resource for irrigation purpose, diversification of crops, requiring less water such as blackgram, cotton, maize and pigeon pea may be attempted in course of time. Some participating farmers desired to grow flower plants as well.	Will be attended during 2007-08.
5.	The programme on Duckary which has been initiated in the village may be extended for more beneficiaries	The performance of Duckary is being evaluated. Extension of the programme will be decided based on the study report.
6.	Programme on backyard poultry with improved breed may be initiated, particularly for landless farmers	The programme covering landless farmers also has been initiated by introducing Divyan Red breed, procured from KVK Ranchi. The performance is being evaluated.
7.	Programme on preparation of compost, including vermi-compost may be taken up for using in high-value crops	Will be attended.
8.	Seed treatment for potato may be considered as an intervention for disease control.	Will be attended in rabi season.
9.	Seed/seedlings of HYV/hybrids of vegetable crops in rabi season may be made available to the farmers, particularly for off-season vegetables.	16000 seedlings of cauliflower for early season cultivation have been made available to the farmers. Action for providing HYV/hybrids of vegetable during rabi season has been initiated.
10.	Seasonality of water in fish ponds may be worked out for use of the water bodies effectively.	To be attended.
11.	Suitable programme for women aiming to income generation may be conducted	Programme on mushroom cultivation is being initiated
12.	In view of prevailing ailments / diseases of animals, it was mooted that the farmers will arrange to bring the affected animals at one place in the village on a specified day and the SMS (VSAH) of the KVK will examine the animals and prescribe accordingly once in a week.	Animal health camp has been organized in collaboration with State Deptt. of Animal Resources where 256 animals were attended. Need-based cases have also been attended separately.

Recommendations and action taken on the proceedings of Third meeting of SAC held on February 23, 2007

Sl. No.	Action Proposed	Action Taken
1.	The possibility of production of jute seed may be explored in the Keten village in 2007	Will be taken up in the jute growing season
2.	Diversification with crops like blackgram, pigeonpea, maize and cotton, requiring less water may be attempted in due course of time	Will be taken up in Kharif season of 2007
3.	Programme of duckery may be explored for more beneficiaries	Duck rearers have been motivated to hatch the eggs so that the improved breed is spread in the village
4.	Backyard poultry with improved breed may be introduced, particularly for landless farmers	Backyard poultry with Divyan red breeed, procured from KVK, Ranchi has been introduced in the village covering 10 families including the landless farmers.
5.	Programme on preparation of compost, including vermicompost may be taken up	The matter of establishing a demonstration unit on vermicompost is in progress
6.	Seed treatment for potato may be intervened	Has been done with Mancozeb
7.	Seed/seedlings of off-season vegetables may be made available in rabi season	Seedlings of cauliflower (cv. Early kunwari) for taking as an early season crop have been made available to the farmers
8.	Seasonality of water in the village ponds may be worked out	The activity has been taken up
9.	Programme for women that may help them to generate income may be conducted	Oyster mushroom cultivation has been introduced in the village
10.	Animal health camps may be organised and cases of sick animals may be attended	One animal health camp was organised in collaboration with State Department. Sick animals are attended regularly.
11.	Meeting of members of Farm Science Club initially to be organised in the evening of first Thursday of every month	Meeting of members of Farm Science Club is being organised on the first Thursday of every month
12.	Third meeting of the SAC may be conducted before the rabi season of 2006-07	It has been little delayed. But the programmes of rabi 2006-07 have been implemented as decided.

22. Field Activities

i) Number of village adopted : 01
ii) Number of farm families selected : 204
iii) Number of Survey / PRA conducted : 01

23. Other Extension Activities

Activities	Date	No. of beneficiaries (Farmer/Rural Youth)			No. of Extension Functionaries		
		Male	*Female*	*Total*	*Male*	*Female*	*Total*
Field days							
1.Production technology of mustard and lentil	26.2. 07	120	15	135	-	-	-
2.							
-							
Kisan mela							
1.							
2.							
-							
Film show							
1. Reducing drudgery of farm women in farm operation	07.12.06	30	10	40			
2.Mineral mixture for increased animal productivity	04.01.07	20	5	25			
3. Production of quality vegetable seedlings	21.02.07	20	5	25			
Any other							
1. Animal health camp	15.07.06	-	-	26 families			
	08.08.06	-	-	60 families			
	17.08.06	-	-	37 families			
	01.09.06	-	-	19 families			
	07.09.06	-	-	19 families			
	05.10.06	-	-	20 families			
	11.10.06	-	-	23 families			
	01.11.06	-	-	15 families			
	29.11.06	-	-	25 families			
	04.01.07	-	-	20 families			
2. Advisory service		292	0	292			
3. Seed exchange	31.05.06	55	0	55			
4. Fish fingerling procurement	18.07.06	3	10	13			
5. Formation of Farm Science Club (1)	06.07.06	45	6	51			
6. Farmers tour	28.03.07	20	5	25			

24. Details of KVK bank accounts

	Name of Bank	Location	AC No.
a. With the Host Institute b. With the KVK	NIL		

25. Utilization of KVK Funds during the year (2006-07)

Item	Sanctioned (Rs. in lakh)	Released (Rs. in lakh)	Expenditure (Rs.)
Pays & allowances	20.00	20.00	14.72
Recurring contingencies	03.00	3.00	2.83
Non-recurring contingencies	79.43	79.43	42.30
Total	**102.43**	**102.43**	**59.85**

26. Utilization of Funds under FLDs on Oilseed/Pulses (Rs. in lakhs)

Item	Sanctioned by ZC		Released by the Host Institution		Expenditure		Unspent balance as on 1st April
	Kharif	Rabi	Kharif	Rabi	Kharif	Rabi	
Oilseeds inputs	-	17500	-	17500	-	12250	Nil
Extension activities	-	2500	-	2500	-	2000	Nil
TA/DA/POL etc.	-	3750	-	3750	-	2375	Nil
Total	**NIL**	**23750**	**NIL**	**23750**	**NIL**	**16625**	**7125**
Pulses inputs	-	6510	-	6510	-	1800	Nil
Extension activities	-	930	-	930	-	390	Nil
TA/DA/POL etc.	-	1395	-	1395	-	260	Nil
Total	**NIL**	**8835**	**NIL**	**8835**	**NIL**	**2450**	**6385**

* Total sanction and release under this head in 2005-06 and 2006-07 was (Rs. 32585 + Rs. 9500) or Rs. 42085. Total expenditure made under this head was (Rs. 16625+ Rs. 2450) or Rs. 19075. Therefore unspent balance is (Rs. 42085 – Rs. 19075) or Rs. 23010.

27. Status of revolving fund (Rs. in lakhs) for the three years

Year	Total Sanctioned (Rs. in lakh)	Opening balance (Rs. in lakh)	Expected income		Net balance in hand as on 1st April of each year (Rs. in lakh)
			Fixed deposit	Farm income	
2005-06	1.0	1.0			1.0
2006-07	--	1.0		- 0.01	0.99

_____ _____

Signature of Director Signature of P C