Action Plan
2007-08

KRISHI VIGYAN KENDRA BURDWAN

KRISHI VIGYAN KENDRA BURDWAN
Central Research Institute for Jute & Allied Fibres (ICAR)
Budbud, Burdwan, W.B. 713 403
www.kvkcrijaf.org.in

Annual Action Plan
2007-2008

Introduction

A Krishi Vigyan Kendra (KVK) under Central Research Institute for Jute and Allied Fibres (CRIJAF) was sanctioned by Council in 2005 for district Bardhaman in West Bengal. The KVK has been made operational at Central Seed Research Station for Jute and Allied Fibres, Bud Bud in district Bardhaman under CRIJAF in the beginning of 2006. Consequent to initiation of activities by the KVK, village Keten, to start with, was selected for its adoption by the KVK to implement its mandated activities.

Description of Agro Climatic Zone and Farming situation 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.

District profile:

Total land in the district (ha.)	698740
Total cultivable land in the district (ha.)	466630
Irrigated land (ha.)	33890
Rain-fed-land (ha.)	130740
Total no. of block / taluka in the district	32
Total no. of villages	2529
Total population of the district:	6895514 as on 2001

Total population of the farmers of the district	358395
Total no. of farmers in each village:	141
Large farmers (in terms of land holding)	42
Semi medium farmers (in terms of land holding)	42
Medium farmers (in terms of land holding)	28
Small farmers (in terms of land holding)	21
Landless farmers	7
Major crops of the district	Rice, potato, mustard, jute, sesame, lentil, chickpea, groundnut, vegetables

Animal resources of district

Total no. of cattle wealth in the district:	
(a) Cow	1655904
(b) Buffalos	127539
(c) Bull	24250
(e) Pig	120904
(f) Others :	
Fowl	314669
Duck	1835094

Major problems identified:

(a) Crops Science	1) Non-availability of quality seed materials 2) Low productivity of major crops 3) Limited water resources for irrigation 4) Use of low yielding old varieties 5) Lack of knowledge about improved scientific practices 6) Lack of crop insurance facilities 7) Low productivity of fruit crops
(b) Soil & Water Science	1) Indiscriminate and inappropriate use of chemical fertilizers 2) Low input of organic manures and biofertiliser 3) Lack of awareness of soil test based fertilizer application 4) Lack of awareness about rainwater harvesting
(c) Animal Science	1) Inadequate cross bred animal 2) Inadequate health care of poultry, duck 3) Poor feed resources 4) Lack of availability of quality fish seed 5) Poor maintenance of fish ponds 6) Lack of credit facilities 7) Lack of awareness about scientific pond management and improved practices of fish culture like composite fish culture, ecocentric fish culture etc.

On Farm Trials
2007-2008

AGRICULTURE

OFT 1:

1.	Title	**Assessment of rice-lentil-vegetable crop sequence through supplementation of bio-based plant nutrient**
2.	Problem definition	Rice based cropping system prevails in the district of Burdwan among which rice-lentil-okra is a major one. Farmers are under impression that they are not getting desired yield as they would get earlier besides that soil is losing quality in respect of permeability, compaction etc. One of the likely reason being the exclusive use of fertilizer of chemical origin with hardly any input of fertilizer of plant/animal origin like manures, biofertiliser, compost and green manure.
3.	Production System	Rainfed rice based production system
4.	Micro-farming Situation	Medium upland to lowland. Rice is predominantly rainfed lowland crop with 2-3 supplemental irrigations. Lentil and okra are mostly irrigated upland crops. 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.
5.	Hypothesis	Green manure and biofertilizer is effective in augmenting nutrient requirement besides maintaining soil quality
6.	Treatment (Detailed below) *	Rice: T1: Farmers practice (60:60:45 kg NPK/ha) T2: Recommended dose of fertilizer (80: 40:40 kg NPK/ha) T3: Seedling treatment with *Azotobacter / Azospirillum* + 75% recommended dose of NPK Lentil: T1: Farmers practice (15:30:0 kg NPK /ha) T2: Recommended dose of fertilizer (20: 40: 20 kg NPK /ha) T3: Seed treatment with *Rhizobium* + 75% recommended dose of NPK Okra: T1: Farmers practice (60:30:30 kg NPK /ha) T2: Recommended dose of fertilizer (80:40:40 kg NPK /ha)

		T3: Seed treatment with *Azotobacter / Azospirillum* + 75% recommended dose of NPK
7.	Critical inputs	Seed (sesbania), fertilizer, biofertiliser (*Azotobacter* + *Azospirillum)*
8.	Unit size	0.05 ha
9.	No. of replication	6
10.	Unit cost	Rs. 1000
11.	Total cost	Rs. 6000
12.	Monitoring indicators	Initial NPK and organic matter content in soil and final Yield attributing characters Yield Economics

* Farmers' practice---

Rice : 135 kg DAP, 80 kg urea, 75 kg MOP per hectare, no manure and biofertiliser

Lentil : 67 kg DAP, 7.5 kg urea per hectare, no biofertiliser

Okra : 67 kg DAP, 105 kg urea, 50 kg MOP per hectare, no biofertiliser

* Seedlings will be soaked in solution of equimixture of Azotobacter and Azospirillum for 30 min and will be transplanted after drying in shade in rice

* Seed will be mixed with slurry of Rhizobium/Azotobacter + Azospirillum and will be sown after drying in shade

* Sesbania will be grown in situ and will be mixed after 45 days in case of rice

OFT 2:

1.	Title	**Soil test crop response based fertilizer application in rice- mustard-Jute crop sequence**
2.	Problem definition	Rice-mustard-jute is an important cropping system among the rice oriented cropping systems those are generally practiced in Burdwan. Farmers have a general complaint that they are not getting sufficient yield in respect of all these crops as they used to get earlier. One of the reasons may be unbalanced use of fertilizer coupled with fertilizer application not based on soil test.
3.	Production System	Rainfed rice based production system

4.	Micro-farming Situation	Medium upland to lowland. Rice is predominantly rainfed lowland crop with 2-3 supplemental irrigations. Mustard and jute are mostly irrigated. 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.
5.	Hypothesis	Soil test based Balanced and optimum dose of fertilizer increases productivity as well as maintains soil fertility.
6.	Treatment (Detailed below)*	Rice: T1: Farmers practice (60:60:45 kg NPK/ha) T2: Recommended dose of fertilizer (80: 40:40 kg NPK/ha) T3: Application of NPK for a targeted yield of 60 q/ha T4: Application of NPK for a targeted yield of 65 q/ha Mustard: T1: Farmers practice (50:50:20 kg NPK/ha) T2: Recommended dose of fertilizer (80: 40:40 kg NPK/ha) T3: Application of NPK for a targeted yield of 15 q/ha T4: Application of NPK for a targeted yield of 20 q/ha Jute: T1: Farmers practice (50:40:50 kg NPK/ha) T2 : Recommended dose of fertilizer (60:30:30 kg NPK/ha) T3 : Application of NPK for a targeted yield of 35 q/ha T4: Application of NPK for a targeted yield of 40 q/ha
7.	Critical inputs	Fertilizer
8.	Unit size	0.05 ha
9.	No. of replication	6
10.	Unit cost	Rs. 1000
11.	Total cost	Rs. 6000
12.	Monitoring indicators	Initial NPK and organic matter content in soil Yield attributing characters Yield Economics

* Farmers' practice---

Rice : 135 kg DAP, 80 kg urea, 75 kg MOP per hectare

Mustard : 110 kg DAP, 70 kg urea per, 37 kg MOP per hectare

Jute : 85 kg DAP, 80 kg urea, 85 kg MOP per hectare

Target yield equation for rice –

FN= 3.94T – 0.47 SN

FP_2O_5= 3.91 T – 2.94 SP

FK_2O= 2.49 T – 0.22 SK

Where SN, SP, SK are soil test values of N, P and K ; FN, FP_2O_5, FK_2O are fertilizer requirement

Target yield equation for mustard –

FN= 8.73 T – 0.24 SN

FP_2O_5= 7.41 T – 0.41 SP

FK_2O= 4.74 T – 0.08 SK

Where SN, SP, SK are soil test values of N, P and K ; FN, FP_2O_5, FK_2O are fertilizer requirement

Target yield equation for jute –

FN= 2.42 T – 0.10 SN

FP_2O_5= 4.54 T – 2.48 SP

FK_2O= 6.36 T – 0.36 SK

Where SN, SP, SK are soil test values of N, P and K ; FN, FP_2O_5, FK_2O are fertilizer requirement

HORTICULTURE

OFT 3:

1.	Title	**Assessment of IPM and chemical measures against fruit and shoot borer, phomopsis blight and bacterial wilt of brinjal**
2.	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.
3.	Production System	Irrigated vegetable based
4.	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.
5.	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.
6.	Treatment*	T_1 : IPM approach T_2 : Selective chemicals T_3 : Farmers practice
7.	Critical inputs	Seeds, plant protection chemicals, Pheromone traps.
8.	Unit size	570 sq. m.
9.	No. of replication	7

10.	Unit cost	Rs. 650
11.	Total cost	Rs. 4550
12.	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)

OFT 4:

1.	Title	**Exploitation of yield potential of garden pea through seed inoculation with *Rhizobium* culture and application of micronutrients**
2.	Problem definition	Low yield of garden pea is one of the common problems to the farmers. They don't have any idea about nodule formation or biofertilizer inoculation for increasing the uptake of nitrogen. Another problem associated with pea is the poor seed setting and

		small size of grain.
3.	Production System	Irrigated vegetable based
4.	Micro-farming system	Medium to upland. Average rainfall is 1500 millimeter. The cold season starts from about the middle of November and continues till the end of February. Average temperature in cold season is 20^{o}C.
5.	Hypothesis	*Rhizobium* inoculation increase the nitrogen uptake of plant and application of micro-nutrient improves the seed setting as well as grain weight
6.	Treatment*	T_1 = Recommended dose of NPK (40:60:40 NPK per ha) T_2 = Seed inoculation with Bio-fertilizer + 75% of recommended dose of nitrogen T_3 = Seed inoculation with Bio-fertilizer + 75% of recommended dose of nitrogen + Foliar spray of micronutrient T_4 = Farmers practice (40:20:20 NPK per ha)
7.	Critical inputs	Fertilizer, biofertilizer and micronutrient
8.	Unit size	400 sq. m.
9.	No. of replication	5
10.	Unit cost	Rs. 1000
11.	Total cost	Rs. 5000
12.	Monitoring indicators	Yield performance 1000 grain weight Cost-benefit ratio

* Treatment details

Farmers practice – No use of biofertilizer and micronutrient. Sole use of chemical fertilizers in the form of DAP, urea and MOP.

* Seed will be mixed with slurry of *Rhizobium* and will be sown after drying in shade

* Fertilizers will be supplied in the form of urea, SSP and MOP.

* Mixed form of micronutrients like Tracel-2(Mg, Zn, Cu, B, Mo etc.) will be applied as foliar spray.

FISHERY SCIENCE

OFT 5:

1.	Title	**Standardization of manuring for enhancement of fish yield**
2.	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.
3.	Production System	Modified extensive system
4.	Micro-farming Situation	Medium or small sized domestic water bodies
5.	Hypothesis	application of cowdung in proper doses would increase the productivity of fish
6.	Treatment*	T_1= Farmers' practice (Stocking density 7500 nos fish/ha) with indiscriminate use of cowdung T_2 = Stocking density 7500 nos fish/ha + cowdung (5 t/ha) T_3 = Stocking density 7500 nos fish/ha + cowdung (10 t/ha)
7.	Critical inputs	Fish seed, cowdung
8.	Unit size	0.066 ha
9.	No. of replication	07
10.	Unit cost	Rs. 2000
11.	Total cost	Rs. 14000

12.	Monitoring indicators	Growth rate Yield performance Plankton growth

*Treatment details:

Farmers' practice: Farmers are habituated to use cowdung indiscriminately. Sometimes they apply large amount of cowdung when it does not require and sometimes very less amount. So this hampers the productivity of the waterbody.

VETERINARY SCIENCE

OFT 6:

1.	Title	**Mineral content-based feed supplementation in cow**
2.	Problem definition	Dairy raiser often complains about infertility, prolong calving interval and low milk yield in deshi cow reason being deficiency of minerals leading to poor animal performance like growth, milk production, and reproduction. It has been noticed that deficiency of iodine in animal mainly occurs due to it's deficiency in soil or in feedstuff. Mineral supplementation to animal without considering elements wise requirement can have adverse effect on overall performance of cow.
3.	Production System	Semi-intensive
4.	Micro-farming system	House hold farming with 2-4 cattle
5.	Hypothesis	Minerals in its proper bioavailable form are vital for growth, milk production and reproduction. Additionally, trace minerals with the exception of iron and copper can be increased in milk by increasing the levels of those minerals in ration upto a certain extent
6.	Treatment*	T_1 = Farmers' practiced (only common salt -50g/d/h)

		T_2 = Formulated mineral mixture with chloride salt (30g/d/h) T_3 = Formulated mineral mixture with chloride + sulphate salt (30g/d/h)
7.	Critical inputs	Mineral mixture
8.	Unit size	1 cow in each treatment
9.	No. of replication	10
10.	Unit cost	Rs. 700
11.	Total cost	Rs. 7000
12.	Monitoring indicators	Levels of minerals in locally available feedstuff Lactation length, calving interval Milk yield Farmers' impact (Appearance of cow, sensory evaluation of milk)

* Farmer practice (T1): Grazing and paddy straw with common salt (50 gm/day/head)

Mineral mixture:

T2 - main ingredients are Dicalcium phosphate, Shell grid, chloride salt of sodium and calcium, cupric oxide, cobalt carbonate, magnesium oxide, manganese carbonate, sodium selenite and zinc oxide. Concentration will be varied according to the mineral content in feed stuff

T3- main ingredients are Dicalcium phosphate, Shell grid, chloride salt of sodium, cupric sulphate, cobalt sulphate, magnesium sulphate, manganese sulphate, sodium selenite, potassium iodide and zinc sulphate. Concentration will be varied according to the mineral content in feed stuff

OFT 7:

1.	Title	Evaluation of formulated duck feed using locally available feed ingredients
2.	Problem definition	Duck raring is a common practice among small and marginal farmers of Burdwan. Ducks used to fed mainly on aquatic flora and fauna, kitchen waste etc. Farmers are encountering problem of providing adequate feed to the ducks during summer and winter as most of aquatic bodies become dry and resulting in small and thin shelled egg production.
4.	Production System	Semi-intensive
5.	Micro farming system	House hold farming with a flock of 5-6 ducks.
8.	Hypothesis	Adequate feeding and balanced ration will enhance egg productivity and improve egg quality
9.	Treatment*	T_1- Farmers' practice T_2- Economic feeding (50gm/d/layer + 2-4 hrs foraging) T_3- Formulated feed with vitamins (100gm/d/layer)
10.	Critical inputs	Formulated feed
11.	Unit size	4 Khaki Campbell ducks
12.	No. of replication	8
13.	Unit cost	Rs. 1500
14.	Total cost	Rs. 12000
15.	Monitoring indicators	Age at first laying Body growth (monthly)

		Number of egg production Egg quality evaluation (Wt, Haugh unit, Shape index, shell thichness) Hatchability

* Treatment details

Farmer practice: Feeding of rice polish, boiled rice, kitchen waste and foraging

Formulated ration : A ration will formulate covering ME 2650 kcal/ kg and CP-18 % for layer using locally available feed ingredients like broken rice, wheat bran, mustard cake, shell grid and maize, soybean meal

HOME SCIENCE

OFT 8:

1.	Title	**Effectiveness of different storage structures for evaluation of shelf life of locally available and seasonal vegetables and fruits**
2.	Problem area	Spoilage of freshly harvested vegetables and fruits is a serious problem in the village. There are different perishable vegetables and fruits like ridge guard, bitter guard, carrot, cabbage, cauliflower and mango grown in large quantity in the village. To avoid the rush selling and to fetch better price in the market it is very important to store the produce in better storage condition. Cool storage can prolong the shelf life of fresh produce but refrigeration equipment is expensive to buy, run and maintain. So there is a great need for low cost storage conditions for the village.
4.	Production System	Homestead system
5.	Micro farming system	Household condition under intensive manual care
8.	Hypothesis	Low cost storage structures stay cooler than the outside

		and maintain higher relative humidity.
9.	Treatment*	T_1 – Farmers' practice T_2 – Bamboo iceless refrigerator T_3 – Zero energy cool chamber
10.	Critical inputs	Bricks, cement
11.	Unit size	Standard size
12.	No. of replication	5
13.	Unit cost	Total - Rs. 3000 (T_1-Nil, T_2-Rs 500, T_3-Rs 2500)
14.	Total cost (for 5 replications)	Rs.15000
15.	Monitoring indicators	Storage Temperature Percentage of rotting Duration of shelf life Change of colour Change of texture Loss in weight

* Treatment details

Farmers' Practice: Storing vegetables and fruits in a corner of the house or in a bamboo basket.

Bamboo iceless refrigerator: Big Bamboo basket with a lid will be covered by a wet gunny bag and watering it frequently. The vegetables can be stored in plastic crates in side the bamboo basket.

Zero Energy cool chamber: This is a double walled brick structure and in between two walls river sand can be used and the sand should keep wet to retain the moisture. The chamber can be covered by a frame of bamboo, straw or dry grass.

OFT 9:

1.	Title	**Supplementation of diversified vegetables to farm families through kitchen garden**
2.	Problem definition	Intake of leafy and other nutritious vegetables in daily diet of the farm women is very less. According to RDA of Foods, ICMR 1984

		requirement of vegetables in daily diet of women is 100g (GLV) and
4.	Production System	Vegetable based
5.	Micro farming system	Upland, intensive cropping
9.	Hypothesis	Increase production of the garden and nutritious vegetables improve diet of farm women
	Treatment*	T_1 – Farmers' practice T_2 – Diversified vegetables without manuring T_3 – Diversified vegetables + Manuring
10.	Critical inputs	Seed and seedlings
11.	Unit size	80sqm
12.	No. of replication	7
13.	Unit cost	Rs 200
14.	Total cost	Rs 4200
15.	Monitoring indicators	Total yield (component wise) Incorporation of vegetables in daily diet Surplus production.

* Treatment details

Farmers' practice: generally the farm women plant 2-3 cucurbit plants without any agricultural operations.

T_2: Including the cucurbit plants vegetables like chilli, okra, brinjal, drumstick, dolichos bean, papaya and tomato can be planted without manuring.

T_3: Including the cucurbit plants vegetables like chilli, okra, brinjal, drumstick, dolichos bean, papaya and tomato can be planted with organic manure and other agricultural operations can be done.

HORTICULTURE-FISHERIES-VETERINARY-HOME SCIENCE INTEGRATED

OFT 10:

1.	Title	**Integration of different components for production maximization**
2.	Problem definition	Non efficient utilization of resources
4.	Production System	Integrated farming system
5.	Micro-farming Situation	Medium or small sized tanks and bund area
9.	Hypothesis	Better resource utilization and generation of income from several commodities/ enterprises
	Treatment*	T1: Separate farming of different enterprise T2: Vegetable-fish farming T3: Vegetable-duck-fish farming T4: Vegetable-duck-fish farming - post harvest of produce*
10.	Critical inputs	Seed, Khaki Campbell etc.
11.	Unit size	0.05 ha
12.	No. of replication	5
13.	Unit cost	Rs. 2000
14.	Total cost	Rs. 10000
15.	Monitoring indicators	Cost Benefit Ratio Yield Farmers impact

Post harvest of produce: Precooling, cleaning, grading, sorting and improvement of keeping quality.

Front line Demonstration

Oilseeds and pulses

Sl. no.	Crop &Var.*	Season	Farming Situation	Area/Unit (ha.)
1	Groundnut	Kharif	Rainfed	2.0
2	Mustard	Rabi	Irrigated	6.0
3	Sesame	Rabi/ summer	Irrigated	5.0
4	Lentil	Rabi	Irrigated	3.0
5	Chickpea	Rabi	Irrigated	3.0

Other than Oilseeds and pulses

Crop	Subject	Area	Variety
Paddy	Package demonstration	5 ha	MTU - 7029
Potato	Production technology	1 ha	Kufri Pokhraj
Feed	Duck feed preparation	For 100 grower ducks	Grower ration
Jute	Package demonstration	3 ha.	JRO – 524
Air breathing fish culture	Culture practices of deshi magur (Clarius batrachus)	0.2 ha	--

Training Programme to be conducted during 2007-08

Training Programme to be conducted during 2007-08 on Crop Production

Month	Title of training	Objective	Duration	Venue	Target no. of participants (likely)						
					SC		ST		Other		Total
					M	F	M	F	M	F	
April, 07	Cultivation practices of jute	Hand-on training for seed treatment against fungal disease and proper nursery management for growing healthy seed crops	1 day	Off-campus	5	0	0	0	15	0	20
May, 07	Pest and disease control of jute	To make farmer identify and adopt necessary preventive measures	1 day	Off-campus	5	0	0	0	15	0	20
June, 07	Soil test based fertilizer application	To make farmers understand need of soil test based fertilizer application in order to get optimum yield with balanced fertilization	1 day	Off-campus	30	0	15	0	40	0	85
June, 07	Seed treatment and nursery management of *kharif* paddy	Hand-on training for seed treatment against fungal disease and proper nursery management for growing healthy seed crops	1 day	Off-campus	40	0	20	0	50	0	110
July, 07	Pest and disease control of paddy in early season	For diagnosis of disease and pest methodology to control them	4 days	Off-campus	40	0	20	0	50	0	110
July, 07	Post-harvest operations of jute	To thoroughly learn the process of retting of jute for better quality fibre production	3 days	Off-campus	5	0	0	0	15	0	20

July, 07	Hand on training on utilization of biofertiliser in kharif rice	To emphasize need of biofertilization and its efficacy in supplementing nutrient requirement	1 day	Off-campus	10	0	5	0	15	0	30
July, 07	Improved production technology of groundnut	To acquaint farmers with improved cultivation and production technology	2 days	Off-campus	5	0	0	0	15	0	20
Nov, 07	Improved production technology of rabi rice	To teach and demonstrate the methodology of intensified rice system with low water input	2 days	Off-campus	20	0	15	0	30	0	65
Dec, 07	Improved production technology on wheat	To make farmers aware of seed treatment, sowing technique, fertilizer management irrigation schedule for better crop yield	1 day	Off-campus	10	0	5	0	20	0	35
Dec, 07	Improved production technology of mustard	To acquaint farmers with improved cultivation and production technology	2 days	Off-campus	20	0	20	0	40	0	80
Dec, 07	Improved production technology of lentil	To acquaint farmers with improved cultivation and production technology	1 day	Off-campus	15	0	15	0	30	0	60
Dec, 07	Improved production technology of chickpea	To acquaint farmers with improved cultivation and production technology	2 days	Off-campus	10	0	10	0	40	0	60
Jan, 08	Improved production technology of sesame	To teach about seed treatment, fertilizer management, pest and disease diagnoses and	2 days	Off-campus	10	0	10	0	30	0	50

		preventions to get enhanced yield and proper grain quality									
Feb, 08	Pest and disease control of mustard	Te make farmers able to identify pests and diseases of crops	2 days		20	0	20	0	40	0	80

Rural youth

Month	Course Title	Course object	Duration (day)	Venue	No of participants						Grand Total
					SC		ST		Others		
					M	W	M	W	M	W	
Sept, 07	Mushroom cultivation for rural youths long duration	To empower rural youths on production of oyster mushroom	4 days in stages	Off-campus	20	25	10	10	25	30	120
Oct,07	Mushroom cultivation for rural youths long duration	To empower rural youths on production of oyster mushroom	4 days	Off campus	20	25	10	10	25	30	120

Training Programme to be conducted during 2007 – 08 on Horticulture

Month	Title of training	Objective	Duration	Venue	Course Facilitator	Target no. of participants (likely)						
						SC		ST		Other		Total
						M	F	M	F	M	F	
April, 07	Management of major pest of summer vegetables	To provide knowledge about commercial propagation techniques of different crops. Details of different techniques like grafting, air layering, budding, cutting etc.	1 day	Off-campus	Dr. S. Sarkar SMS (Hort.)	10	-	-	-	15	-	25

May, 07	Management of major diseases of summer vegetables	To help the farmers to produce their own seed by knowing the detailed procedure such as isolation distance, maturing index, nutrient management, seed extract, drying and storing	1 day	Off campus	Dr. S. Sarkar SMS (Hort.)	10	-	-	-	15	-	25
June, 07	Seed production techniques of Summer vegetable crops	To help the farmers to produce their own seed by knowing the detailed procedure such as isolation distance, maturing index, nutrient management, seed extract, drying and storing	3 days	On and off campus	Dr. S. Sarkar SMS (Hort.)	10	-	-	-	15	-	25
June, 07	Use of organic pesticides and procedure of (neem) organic pesticide preparation	To provide knowledge of indigenous organic-pesticides, procedure of preparation and efficacy	1 day	On campus	Dr. S. Sarkar SMS (Hort.)	5	5	-	-	10	5	25
July, 07	Nursery management in vegetable crops	Farmers are to learn the proper method of seed bed preparation, their management and protection of seedlings from pest and diseases	2 days	On and off campus	Dr. S. Sarkar SMS (Hort.)	8	2	-	-	10	5	25
Aug, 07	Cultivation of off season (early) cole crop	To acquaint farmers about the improved techniques of early season cauliflower	1 day	Off campus	Dr. S. Sarkar SMS (Hort.)	10	-	-	-	15	-	25
Sept, 07	Management of physiological disorder pests and diseases of cole crops	To identify the pest and diseases and their systematic control	2 days	Off campus	Dr. S. Sarkar SMS (Hort.)	12	-	-	-	18	-	30
Oct, 07	Seed treatment of potato	To learn the procedure of seed treatment	1 day	Off campus	Dr. S. Sarkar SMS (Hort.)	10	-	-	-	20	-	30

Nov, 07	Identification of production problem of potato and their management	Farmers will know the common pest and diseases, their predisposal factors and their systematic control	2 days	Off campus	Dr. S. Sarkar SMS (Hort.)	10	-	-	-	20	-	30
Dec, 07	Identification of major insect pest and diseases of winter vegetables (other than potato)	Provide knowledge to the farmers, so that they can able to identify the common pest and diseases as well as their specific control	2days	Off campus	Dr. S. Sarkar SMS (Hort.)	10	-	-	-	15	-	25
Feb, 08	Cultivation of Cucurbits	To acquaint farmers about the improved techniques of cultivation of Cucurbits	2 days	Off campus	Dr. S. Sarkar SMS (Hort.)	10	-	-	-	15	-	25
March, 08	Management of major pest and diseases of Cucurbits	To identify the pest and diseases and their specific control	1 day	Off campus	Dr. S. Sarkar SMS (Hort.)	10	-	-	-	15	-	25

For rural youths

Month	**Course Title**	**Course object**	**Duration (day)**	**Venue**	**Course facilitator**	**No of participants**						**Grand Total**
						SC		**ST**		**Others**		
						M	**W**	**M**	**W**	**M**	**W**	
September, 07	Seedlings production and nursery management of vegetable crops	To raise the healthy seedlings of vegetables and entrepreneurship development	4	On and off campus	Dr. S. Sarkar SMS (Hort.)	6	5	-	-	10	4	25

Training schedule and course of Veterinary Science

For practicing farmers and farm women

Month	Course Title	Course object	Duration (day)	Venue	Course facilitator	No of participants						Grand Total
						SC		ST		Others		
						M	W	M	W	M	W	
March, 07	Care of day old ducklings	Farmers will be able to take care of their ducklings in proper ways	1	Off campus	Dr. C. Jana, SMS	3	5		5	4	5	22
April, 07	Care and management of ducklings	Owner can rear ducks with package of practices.	1	Off campus	Dr. C. Jana, SMS		10			8	2	20
May, 07	Heat detection of cow	For ensuring better conception rate	1	Off campus	Dr. C. Jana, SMS	5	5			5	5	20
June, 07	Hatching of egg under broody hen	Practicing farmer can hatch eggs in their own house	2	Off campus	Dr. C. Jana	2	5	4	5	3	5	24
July,07	Day- old Chicks management	To check mortality and ensuring good health	1	Off campus	Dr. C. Jana	5	5	-	3	2	5	20
August, 07 (2nd wk)	Cattle shed disinfection at rainy season	Farmer will develop knowledge and skill regarding cattle health	2	Off campus	Dr. C. Jana, SMS	4	5			5	6	20
September, 07 (1st week and 3rd week	Procedure of medication for animals	To support farmer's knowledge about drenching, oral medicine application	2	Off campus	Dr. C. Jana, SMS	3	3	3	2	4	5	20
October, 07 (1st week and 3rd week)	Procedure of medication for birds	To support farmer's knowledge about oral medicine application	2	Off campus	Dr. C. Jana, SMS	5	3			3	4	15
December, 07 (3rd)	Care of New-born calf	Farmer will develop knowledge and skill regarding care of new born calf	2	Off campus	Dr. C. Jana, SMS	5	10				5	20
February 2008 (1st and 3rd wk)	Cultivation techniques of Maize,	Farmer will have knowledge about cultivation techniques of Maize	4	On campus	Dr. C. Jana, SMS	2				3		5

March 2008 (1st wk)	Procedure of stool sample collection from animals	To learn the scientific procedure of stool sample collection from animals	2	off campus	Dr. C. Jana, SMS		7	3		3	7	20

For rural youths

Month	Course Title	Course object	Duration (day)	Venue	Course facilitator	No of participants						Grand Total
						SC		ST		Others		
						M	W	M	W	M	W	
July, 07	Egg pickle production	To provide knowledge about preparation methods and storage	3	on campus	Dr. C. Jana, SMS	3	4	3	2	9	4	25
November, 07	Broiler production techniques	Farmer will develop knowledge and skill regarding scientific method of broiler production	3	Off campus	Dr. C. Jana, SMS	3	4	3	2	9	4	25
January	Broiler shed disinfection procedure	To learn the scientific procedure of maintenance of disease free condition in broiler shed	1	Off campus	Dr. C. Jana, SMS	10	-	-	-	5	5	20

Training Programme to be conducted during 2007 – 08 on Fishery

For practicing farmers and Farm Women

Qrt	Month	Course Title	Course object	Duration (day)	Venue	Course facilitator	No of participants						Grand Total
							SC		ST		Others		
							M	W	M	W	M	W	
I	April, 07	Preparation of nursery pond	To learn preparation of nursery ponds	1	Off campus	G. Ziauddin, SMS (Fishery)	1				11		12
II	May, 07	Management of nursery ponds	To learn management practices of nursery ponds	1	Off campus	G. Ziauddin, SMS (Fishery)	2				9		11
II	June , 07	Rearing pond preparation and management.	To learn pond preparation and management practices of rearing ponds	2	Off campus	G. Ziauddin, SMS (Fishery)	4	3	2	3	8	5	25
II	3rd July, 07	Polyculture of Indian major carp and fresh water prawn	To learn the management practices of mixed farming of Indian Major carps and Freshwater Prawn	1	Off campus	G. Ziauddin, SMS (Fishery)	5	2	4	1	10	3	25
II	August , 07	Disease management and prophylactic measures in composite fish culture ponds	To learn the symptoms of common diseases of fresh water fishes and their prevention	1	Off campus	G. Ziauddin, SMS (Fishery)	3	4	3	2	9	4	25
II	August , 07	Induced breeding of Indian major carp	To learn about different aspects of induced breeding in Hapa and Bundh breeding	1	Off campus	G. Ziauddin, SMS (Fishery)	5	2	1	4	11	2	25
II	September, 07	Preservation and transport of fish seed	To identify the problems associated with fish seed transport and methods of transportation	1	Off campus	G. Ziauddin, SMS (Fishery)	3	4	3	2	9	4	25

IV	January, 08	Environmental consideration in freshwater Aquaculture	To know the effect of different environmental factors in fish culture.	1	Off campus	G. Ziauddin, SMS (Fishery)	3	4	3	2	9	4	25
IV	March, 08	Effects of liming in fish ponds	To know the effect of lime in fish culture.	1	Off campus	G. Ziauddin, SMS (Fishery)	3	4	3	2	9	4	25

For rural youth

Qrt	Month	Course Title	Course object	Duration (day)	Venue	Course facilitator	No of participants						Grand Total
							SC		ST		Others		
							M	W	M	W	M	W	
II	August and September, 07	Induced breeding of Indian major carp	To learn about different aspects of induced breeding in Hapa and Bundh breeding	1	Off campus	G. Ziauddin, SMS (Fishery)	3	4	3	2	9	4	25
III	October, 07	Air breathing fish culture	Rural youth will be able to adopt different management practices in air breathing fish culture	1	Off campus	G. Ziauddin, SMS (Fishery)	3	4	3	2	9	4	25

Training Programme to be conducted during 2006 – 07on Home Science

For practicing farmers and Farm Women

Qrt	Month	Course Title	Course object	Duration (day)	Venue	Course facilitator	No of participants						Grand Total
							SC		ST		Others		
							M	W	M	W	M	W	
I	April 3rd 07	Conservation of nutrients during cooking food.	Farm women will be able to adopt different nutrient conservation practices while cooking food.	1	Off campus	Sujata Sethy, SMS (Home Science)	-	10	-	-	-	10	20

I	April 12th 07	Preparation of mixed vegetable pickle.	To provide knowledge about the use of preservatives, preparation methods and storage.	1	Off campus	Sujata Sethy, SMS (Home Science)	-	-	-	-	1	20	21
I	May 14th 07	Preparation of green mango pickle.	To provide knowledge about the use of preservatives, preparation methods and storage	1	Off campus	Sujata Sethy, SMS (Home Science)	-	6	-	-	7	7	20
I	June 7th 07	Preparation of mango squash.	Farm women will be able to adopt preparation method, preservative use and storage practices of the squash.	1	Off campus	Sujata Sethy, SMS (Home Science)	-	10	-	-	-	15	25
II	July 07	Preparation of jute handicrafts.	Empowering farm women with knowledge and skill of preparing jute handicrafts.	7	On campus	Sujata Sethy, SMS (Home Science)	-	10	-	-	-	10	140
II	August 07	Management of nutrition garden.	Farm women will be able to adopt different practices related to the lay out, intercultural operation, manuring and irrigation of nutrition garden.	4	Off campus	Sujata Sethy, SMS (Home Science)	2	8	-	-	4	11	100
II	September 07	Effective storage of grain, fruits and vegetables.	To avoid wastage, reduce pest attack and to provide the knowledge about different storage methods of grain, fruits and vegetables.	2	Off campus	Sujata Sethy, SMS (Home Science)	4	7	-	-	2	10	50
III	October 07	Hand embroidery	Empowering farm women with knowledge and skill of preparing hand embroidery.	5	Off campus	Sujata Sethy, SMS (Home Science)	-	10	-	-	-	10	100
III	November 07	Clean milk production from cattle	To support farm womens' knowledge about the different aspects responsible for clean milk production.	1	Off campus	Sujata Sethy, SMS (Home Science)	2	8	-	-	4	11	25
III	December 07	Preparation of tomato sauce.	To reduce the Utilization of tomato for product development in peak season and providing the knowledge	1	Off campus	Sujata Sethy, SMS (Home Science)	-	10	-	-	-	15	25

			about tomato sauce preparation.										
IV	January 08	Preparation of kantha stitch	Empowering farm women with knowledge and skill of preparing kantha stitch.	5	Off campus	Sujata Sethy, SMS (Home Science)	-	10	-	-	-	10	100
IV	February 08	Preservation of egg and meat	To provide the knowledge about the selection of raw materials, preservation and storage of the product.	1	On campus	Sujata Sethy, SMS (Home Science)	-	10	-	-	-	15	25
IV	March 08	Preparation of guava jam and jelly	To empower farm women with adequate knowledge of preparation method, use of preservative, and end point testing.	2	Off campus	Sujata Sethy, SMS (Home Science)	-	8	-	-	-	17	50

Training Programme to be conducted during 2007 – 08 on Fishery

For practicing farmers and Farm Women

Qrt	Month	Course Title	Course object	Duration (day)	Trainee day	Venue	Course facilitator	No of participants						Grand Total
								SC		ST		Others		
								M	W	M	W	M	W	
I	April, 07	Preparation of nursery pond		1		Off campus	G. Ziauddin, SMS (Fishery)	1				11		12
II	May, 07	Management of nursery ponds		1		Off campus	G. Ziauddin, SMS (Fishery)	2				9		11
II	June , 07	Rearing pond preparation and management.		2		Off campus	G. Ziauddin, SMS (Fishery)	4	3	2	3	8	5	25
II	3rd July, 07	Polyculture of Indian major carp and fresh water prawn	To learn the management practices of mixed farming of Indian Major carps and Freshwater Prawn	1		Off campus	G. Ziauddin, SMS (Fishery)	5	2	4	1	10	3	25
II	August , 07	Disease management and prophylactic measures in composite fish culture ponds	To learn the symptoms of common diseases of fresh water fishes and their prevention	1		Off campus	G. Ziauddin, SMS (Fishery)	3	4	3	2	9	4	25
II	August , 07	Induced breeding of Indian major carp	To learn about different aspects of induced breeding in Hapa and Bundh breeding	1		Off campus	G. Ziauddin, SMS (Fishery)	5	2	1	4	11	2	25
II	September, 07	Preservation and transport of fish seed	To identify the problems associated with fish seed transport and methods of transportation	1		Off campus	G. Ziauddin, SMS (Fishery)	3	4	3	2	9	4	25
IV	January, 08	Environmental consideration in freshwater Aquaculture	To know the effect of different environmental factors in fish culture.	1		Off campus	G. Ziauddin, SMS (Fishery)	3	4	3	2	9	4	25
IV	March, 08	Effects of liming in fish ponds	To know the effect of lime in fish culture.	1		Off campus	G. Ziauddin, SMS (Fishery)	3	4	3	2	9	4	25

For rural youth

Qrt	Month	Course Title	Course object	Duration (day)	Trainee day	Venue	Course facilitator	No of participants						Grand Total
								SC		ST		Others		
								M	W	M	W	M	W	
II	August and September, 07	Induced breeding of Indian major carp	To learn about different aspects of induced breeding in Hapa and Bundh breeding	1		Off campus	G. Ziauddin, SMS (Fishery)	3	4	3	2	9	4	25
III	October, 07	Air breathing fish culture	Rural youth will be able to adopt different management practices in air breathing fish culture	1		Off campus	G. Ziauddin, SMS (Fishery)	3	4	3	2	9	4	25

Training Programme to be conducted during 2006 – 07on Home Science
For practicing farmers and Farm Women

Qrt	Month	Course Title	Course object	Duration (day)	Trainee day	Venue	Course facilitator	No of participants						Grand Total	
								SC		ST		Others			
								M	W	M	W	M	W		
I	April 3rd 07	Conservation of nutrients during cooking food.	Farm women will be able to adopt different nutrient conservation practices while cooking food.	1		Off campus	Sujata Sethy, SMS (Home Science)	-	10	-	-	-	10	20	
II	April 12th 07	Preparation of mixed vegetable pickle.	To provide knowledge about the use of preservatives, preparation methods and storage.	1		Off campus	Sujata Sethy, SMS (Home Science)	-	-	-	-	1	20	21	
II	May 14th 07	Preparation of green mango pickle.	To provide knowledge about the use of preservatives, preparation methods and storage	1		Off campus	Sujata Sethy, SMS (Home Science)		6			7	7	20	
II	June 7th 07	Preparation of mango squash.	Farm women will be able to adopt preparation method, preservative use and storage practices of the squash.	1		Off campus	Sujata Sethy, SMS (Home Science)			10				15	25
II	July 07	Preparation of jute handicrafts.	Empowering farm women with knowledge and skill of preparing jute handicrafts.	7		On campus	Sujata Sethy, SMS (Home Science)		10				15	25	
II	August 07	Management of nutrition garden.	Farm women will be able to adopt different practices related to the lay out, intercultural operation, manuring and irrigation of nutrition garden.	4		Off campus	Sujata Sethy, SMS (Home Science)	2	8			4	11	25	

III	September 07	Effective storage of grain, fruits and vegetables.	To avoid wastage, reduce pest attack and to provide the knowledge about different storage methods of grain, fruits and vegetables.	2		Off campus	Sujata Sethy, SMS (Home Science)	4	7			2	10	25
	October 07	Hand embroidery	Empowering farm women with knowledge and skill of preparing hand embroidery.	5		Off campus	Sujata Sethy, SMS (Home Science)		10				15	25
	November 07	Clean milk production from cattle	To support farm womens' knowledge about the different aspects responsible for clean milk production.	1		Off campus	Sujata Sethy, SMS (Home Science)	2	8			4	11	25
	December 07	Preparation of tomato sauce.	To reduce the Utilization of tomato for product development in peak season and providing the knowledge about tomato sauce preparation.	1		Off campus	Sujata Sethy, SMS (Home Science)		10				15	25
	January 08	Preparation of kantha stitch	Empowering farm women with knowledge and skill of preparing kantha stitch.	5		Off campus	Sujata Sethy, SMS (Home Science)		10				15	25
	February 08	Preservation of egg and meat	To provide the knowledge about the selection of raw materials, preservation and storage of the product.	1		On campus	Sujata Sethy, SMS (Home Science)		10				15	25
	March 08	Preparation of guava jam and jelly	To empower farm women with adequate knowledge of preparation method, use of preservative, and end point testing.	2		Off campus	Sujata Sethy, SMS (Home Science)		8				17	

Activities in KVK Farm/ Demonstration Units

Enterprises	Variety	Season	Area (ha)
Seed production of rice	MTU7029, CR1001	Kharif	2.0
SRI	CR 1001	Kharif	0.3
Seed production of wheat	UP 262	Rabi	0.5
Seed rhizome production of turmeric	BH-4	Pre-kharif	0.02
Seed corm production of elephant foot yam and taro	Bidhan Kusum and Bidhan Chaitannya	Pre-kharif	0.01
Seed production of okra	Orka Anamika	Pre-kharif	0.07
Seedlings production of early cauliflower	Early Kunwari	Kharif	10,000 no.
Seed corm production of gladiolus	Different varieties	Rabi	0.02
Development of progeny orchard	Different fruit crops	Kharif	0.4
Mineral mixture preparation	Cattle	Year-round	20 kg.
Cowpea seed production as fodder	Bundel-2	Rabi	0.05
Hybrid Napier fodder production	Pusa giant	Year-round	0.05
Fish fry (advanced) production	Rohu, Mrigal	Rainy	1.1 q

Extension Activities

Activity	No.	Quarter	Cost involved (Rs.)
Field day	5	Year-round	40000
Kisan Mela	1	Rabi	100000
Kisan Gosthi	3	Kharif & Rabi	15000
Farm Science Club	2	Year-round	10000
New paper coverage/TV talk	10	Year-round	10000
Video show	2	Kharif & Rabi	5000
Ex-trainees Sammelan	1	Rabi	20000
Publication/distribution	6	Year-round	10000
Health camp	12	Every month	10000
Farmers visit to KVK	12	Every month	1200
Scientists visit to farmers field	10	Year-round	5000
Total			**2,26,200**

Proposed expenditure for different KVK activities (2007-2008)

Sl. No.	Activities	Proposed expenditure (Rs.)
1.	KVK Training	87000.00
2.	On-Farm Trial	83700.00
3.	FLD on oilseeds and pulses	49020.00
4.	FLD other than oilseeds and pulses	75000.00
5.	Extension activities and publication	226200.00
6.	On station trials	30000.00
Total		550920.00