KRISHI VIGYAN KENDRA

BOKARO

ANNUAL REPORT

(April 2011- March 2012)

ZONAL WORKSHOP OF KVKs

ZONE- II

Venue- BCKV, FTC, Kalyani

Date: 16 to 18 April, 2012

BIRSA AGRICULTURAL UNIVERSITY
KANKE, RANCHI (JHARKHAND)

1. GENERAL INFORMATION ABOUT THE KVK

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

Address	Telephone		E mail
Krishi Vigyan Kendra, Bokaro P.O.- Petarwar Pin- 829121	06549-265048 (O) 09431126991 (M)	FAX	kvk_bokaro@yahoo.co.in

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

Address	Telephone	FAX	E mail
	Office	Office	
Directorate of Extension Education, Birsa Agricultural University,Jharkhand, Kanke, Ranchi Pin-834006	(VC) 0651-2450500(O)	0651-2450850	
	(DEE) 0651- 2450849 (O)	0651-2450525	rpsratna07@yahoo.co.in

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

Name	Telephone / Contact		
	Residence	Mobile	Email
Sri Uday Kumar Singh	09431595179	9431126991	Udaykumarsingh1972@gmail.com

1.4. Year of sanction:

(Reference of Sanction Order)

2004. Vide letter No. of ICAR- F.No. 6-5/2000-AE-1 dated 24-6-2004

1.5. Staff Position (as on 31st March 2012)

Sl. No.	Sanctioned post	Name of the incumbent	Designation	Discipline	Pay Scale with present basic	Date of joining	Permanent /Temporary	Category (SC/ST/ OBC/ Others)
1.	Programme Coordinator	Sri Uday Kumar	I/C Programme Coordinator & SMS	Agronomy	PB(156000 - 39100) GP- Rs.5400.00	19-07-04	Permanent	Others
2.	Subject Matter Specialist	Dr. Anil Kumar	SMS	Horticulture	PB(156000 - 39100) GP- Rs.5400.00	19-07-04	Permanent	Others
3.	Subject Matter Specialist	Dr. Sudhir Kumar Jha	SMS	Soil Science	PB(156000 - 39100) GP- Rs.5400.00	20-07-04	Permanent	Others
4.	Subject Matter Specialist	Sri Vinay Kumar	SMS	Agril. Engg.	PB(156000 - 39100) GP- Rs.5400.00	20-07-04	Permanent	Others
5.	Subject Matter Specialist	Mrs Neena Bharti	SMS	Plant Prot.	PB(156000 - 39100) GP- Rs.5400.00	20-07-04	Permanent	ST
5.	Subject Matter Specialist	Mrs. Nandana Kumari	SMS (Study Leave)	Home Science	PB(156000 - 39100) GP- Rs.5400.00	19-07-04	Permanent	Others
	Programme Assistant	Mrs Smita Shweta	Programme Assistant	Fishery Science	PB (9300-34800) GP-Rs. 4200.00		Permanent	Others
6.	Farm Manger	Miss Priyanka Verma	Farm Manager	Agril Science	PB (9300-34800) GP-Rs. 4200.00	31-07-04	Permanent	Others
7.	Computer Programmer	Sri Naman Kandulna	Programme Assistant(Computer)		PB (9300-34800) GP-Rs. 4200.00	20-07-04	Permanent	ST
7.	Accountant / Superintendent	Sri Abhay Kumar Singh	O.S.cum Accountant		5500.00	April 2008	Contractual Staff	Others
8.	Stenographer	Sri Ratnesh Kumar Mishra	Stenographer		4000.00	April 2008	Contractual Staff	Others
10.	Driver	Sri Ranchandra Lohar	Driver		3000.00	April 2008	Contractual Staff	ST
11.	Peon	Sri Ruplal Marandi	Peon		2500.00	April 2008	Contractual Staff	ST
12.	Peon	Sri Durga Prasad Mahto	Peon		2500.00	April 2008	Contractual Staff	OBC

1.6. Total land with KVK (in ha) - 10 ha

S. No.	Item	Area (ha)
1	Under Buildings & Demonstration units and other encroachment	2.0
2.	Under Crops	6
3.	Orchard/Agro-forestry (Mother plant nursery)	1
4.	Technology park	0.4
5.	Pond	0.2
6.	Unutilized land due to undulating	0.4

1.7. Infrastructural Development:

A) Buildings

Sl. NO.	Name of building	Source of funding	Stage					
			Complete			Incomplete		
			Completion Date	Plinth area (Sq.m)	Expenditure (Rs.)	Starting Date	Plinth area (Sq.m)	Status of construction
1.	Administrative Building	I.C.A.R.	1-12-2007	500				completed
2.	Farmers Hostel	I.C.A.R.	01-10-2007	300				Completed
3.	Staff Quarters (6)	I.C.A.R.					400	Incomplete
4.	Demonstration Units (2) Preservation unit	I.C.A.R.						Not started
5	Fencing	District Administration						completed
6	Rain Water harvesting system	I.C.A.R.	June 2007	120x120x10 ft pond				Incomplete (Micro irrigation system is not installed)
7	Threshing floor	I.C.A.R.						
8	Farm godown	District Administration	Dec.2007	1750				completed
9.	Farm godown	I.C.A.R.						Likely to be complete
9.	IT Infrastructure	I.C.A.R.						completed
10.	Soil testing lab	I.C.A.R.						Not started
11.	Plant diagnostic lab	I.C.A.R.						Not started
12.	Threshing floor	I.C.A.R.						Not started

B) Vehicles

Type of vehicle	Year of purchase	Cost (Rs.)	Kms. Run during the year (1st April 11 to 31st March 2012)	Total Kms. Run	Present status
Jeep	2005	431129.00	4552	204052	Time to time repairing is needed
Tractor	2006	361200.00	956	950Hour run	Time to time repairing is needed

C) Equipments & AV aids

Name of the equipment	Year of purchase	Cost (Rs.)	Present status
Seed drill cum fertilizer drill	2005	775.00	Good
Birsa ridger plough	2005	485.00	Good
Japanese paddy weeder	2005	525.00	Good
Dryland weeder	2005	300.00	Good
Birsa potato digger	2005	625.00	Good
Paddy transplanter	2006	-	Good
Cultivator 9 tine	2006	14200.00	Good

Land leveler	2006	8080.00	Good
Offset disk	2006	28020.00	Good
Trailer 4 wheel with tyre tube	2006	76500.00	Good
Disc plough 2 furrow	2007	26995.00	Good
Grass cutter	2007	38500	Good
M.B. Plough	2007	26993.00	Good
Rottary tiller	2007	88585.00	Good
Power sprayer	2007	48500.00	Good
Cage wheel nut bolt type	2007	5250.00	Good
Zero till fertilizer drill	2010	-	Good
Computer	2006	45000.00	Good
UPS	2006	7000.00	Good
Laser Printer	2006	8000.00	Good
Fax Machine	2006	8000.00	Not installed
Xerox	2007	72000.00	Not functioning
2 KVA Stabilizer	2007	4850.00	Good
Stabilizer 500 VA Manual Auto-cut	2007	1750.00	Good
Camera	2005	12650.00	Good
Camera	2007	14512.50	Good
LCD Projector	2007	51989.00	Good
HAKIM Audio Visual Trolley	2007	8534.00	Good
Projector Screen 8'x6'	2007	7550.00	Good
15Mtrs special imported moulded VGA cable	2007	7500.00	Good
Laser pointer torch with duel effect	2007	2200.00	Good
Refrigerator	2007	11990.00	Good
Food processor	2007	4995.00	Good
Commercial gas cylinder	2008	3000.00	Good
Weighing machine	2008	7540.00	Good
Weighing machine	2010	12740.00	Good
Weighing machine	2010	7260.00	Good
Generator 5 KVA	2010	49500.00	Good

1.8. A). Details SAC meeting* conducted in the year

Sl.No.	Date	Number of Participants	Salient Recommendations	Action taken	If not conducted, state reason
1.	03.03.2011	25	In Saraibindha village since 5% model of rain water harvesting was made and the farmer's were not growing rabi crops due to open grazing problem. It was decided that Saraibindha farmer should be motivated to take rabi crops.	KVK scientists visited the Saraibindha village and organized off –campus training and motivated the farmers to take rabi crop. In this year wheat and vegetable are shown by the farmers near the tank.	
			Refined Sickle of KVK Bokaro should be manufactured in large scale at KVK, Dhanbad.	Technology of Refined Sickle has been given to KVK Dhanbad.	
			Training programme on animal husbandry should be strengthened with the help of experts from BAU and SMS of other KVKs.	3 training programme on Animal Husbandry had been conducted till date and 3 training programme of Krishi Mitras will be conducted in February & March 2012 with the help of SMS Animal Husbandry Dhanbad.	
			It was decided that a new proposal for deep boring and open dug well at KVK farm should be submitted to Director Extension Education, BAU, Ranchi.	Proposal has been submitted.	

			Director Extension Education, B.A.U. Ranchi advised that a success story should be made on KVK adopted village Dharampura's development.	A Success story has been documented.	
			It was also decided that 250 rural youths should be trained next year.	132 rural youths were trained upto Dec. 2011.	
			Director Extension Education, B.A.U. Ranchi advised that Til crop should be promoted in the district.	In previous years FLD on Til crops were conducted by KVK for promoting Til crops in the district.	
			Director Extension Education, B.A.U. Ranchi advised that a new on farm trial should be conducted on Arhar + Haldi intercropping.	A new OFT on Pigeon pea + Turmeric intercropping will be conducted in 2012-13	
			Lac culture should be promoted through shrubs like semialata planting.	Semialata plants are shown in 6 farmer's field and at KVK farm, lac culture will be started this year.	
			Innovation of farmers of Chandipur village on mixed cropping of vegetables should be documented.	Documentation process is going on.	
			Minor Irrigation Department has developed many check dams in the district. It was advised that KVK and ATMA should do a survey work and try to increase the cropping intensity in adjoining area.	Training and field day were organized by ATMA and KVK for motivating the farmers for taking rabi crop near check dam.	
			10 rural youths should be trained in grafting and budding techniques.	15 rural youth were trained through on-campus training.	

**** Attach a copy of SAC proceedings along with list of participants***

2. DETAILS OF DISTRICT (2011-12)

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

S. No	Farming system/enterprise
1	Agriculture + Horticulture(Vegetable)+ Animal Husbandry
2.	Agriculture + Horticulture(Vegetable)
3.	Agriculture + Animal Husbandry
4.	Agriculture + Horticulture(Vegetable)+ Animal Husbandry+ Fishery
5.	Agriculture + Horticulture(Vegetable)+ Animal Husbandry+ Lac culture
6.	Agriculture + Animal Husbandry+ Lac culture
7.	Agriculture + Labour

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

S. No	Agro-climatic Zone	Characteristics
1.	IV- Central North Eastern Plateau Zone	Geographical area of Zone = 41293 K.m^2 Mining dominates in central part. Damodar, Barakar, More and Ajay are the main rivers of this zone. Damodar basin is famous for coal. This zone is characterized by having humid & sub humid tropical monsoon type of climate. Average rainfall of the zone is 1320 m.m. Monsoon breaks in the second week of June. In normal years pre monsoon rains are received in the month of May about 60 m.m. Apart from this winter rain during December- February is sparse. Soil developed on Rajmahal traps are dark, heavy textured, neutral in reaction and moderately well drained to poorly drained and moderately rich in N but poor in P&K. Soils of Dhanbad & Giridih areas are light textured, moderately to slightly acidic and moderately well drained and poor in N & P and moderate to fairly rich in K. Upland Soils of Ranchi and Hazaribagh areas are gravely to sandy, shallow, acidic and of very poor fertility status where as medium land soil are yellow

		coloured, slightly to moderate acidic, some what poorly drained & moderately fertile where as the soils of Koderma side are light textured, silty in nature, yellowish to reddish in colour & neutral to moderately acidic in reaction. These are poor to moderate in N, poor in available P and rich to very rich in K. Very limited irrigation potential has been exploited in this zone. Although it is claimed that 8-9% area is irrigated. Larger part of agricultural land is rainfed. Less than 55% area comes under net cultivated area. Good forest is available on 12-13 percent land. Rice, maize, wheat, potato, linseed, rapseed and mustard, til, niger, ground nut and vegetables are major crops of the region. Climate of the Bokaro district is sub humid with water deficiency in winter. Temperature ranges from 2^0C in winter to 45^0C in hot summer. The main drainage system is Damodar & Swarnrekha rivers. Only 5-8% of net sown area is irrigated. The average annual rainfall of the district is 1275 mm. Upland soils are red to brownish red in colour, light textured, well drained, acidic in reaction and poor in organic carbon, N, Ca, Mg., P & S. Medium land soils are yellow, yellowish in colour, light to medium texture, moderately acidic and poor in N, Ca, Mg and organic matter. Whereas the low land soils are gray to grayish in colour, heavy textured, neutral to slightly alkaline in reaction, poorly drained and medium in N and organic matter. The major crops of the district are rice, maize, wheat, potato, lentil, linseed, rapseed & mustard, groundnut, potato and vegetables like ladys finger, tomato, brinjal, rench bean, raddish, cauliflower, cabbage & cucurbits.

S. No	Agro ecological situation	Characteristics
1.	Red sandy loam, gravely undulating topography with mines and forests	Undulating topography, having red sandy loam soil, full of gravels, covered with perennial forests, having mines
2.	Sandy loam rainfed	Upland sandy loam soil, no irrigation facility, agriculture only depend on rain water
3.	Sandy loam irrigated	Medium land, sandy loam soil, having irrigation facility
4.	Clay loam rainfed	Low land, clay loam soil, agriculture depend only rain water

Source: ATMA, Bokaro District

2.3 Soil type/s

S. No	Soil type	Characteristics	Area in ha
1.	Stony and gravely soil	Found in the foot hill prone to intensive erosion low water holding capacity highly acidic low in fertility status and organic matter content only suitable for pasture and recreation purpose.	206465
2.	Light texture soil (Sandy soil)	Found in upland, coarse texture soil, highly acidic in reaction, low water holding capacity, low in organic matter content and poor in fertility status, rich in micronutrient except Boron and Molybdenum, prone to erosion.	619395
3.	Medium texture soil (Loamy soil)	Found in medium land, soil texture is mainly sandy loam to sandy clay loam, soils are moderately acidic, poor in fertility status and low in organic matter content and water holding	2064650

		capacity is moderate.	
4.	Fine textured soil (Clayey soil)	Heavy texture soil , found in low land, soils are fairly acidic to neutral in reaction, water holding capacity is high, organic matter content is medium and moderate in fertility status.	1238790

Source: NSSLUP India

2.4. Area, Production and Productivity of major crops cultivated in the district

S. No	Crop	Area (ha)	Production (MT)	Productivity (Qtl /ha)
1	Paddy (Hybrid)	3075	12300	40.00
2	Paddy	26113	40088	15.50
3	Wheat	1300	1272	10.00
4	Maiz	4746	7595	16.00
5	Arhar	2130	1374	6.50
6	Gram	1309	1149	8.25
7	Mustad	1615	388	6.00
8.	Pea	325	387	12.00
9.	Green gram			6.0
10.	Horse gram			4.0
11.	Black gram			6.0
12.	Lentil			8.0
13.	Sesame			2.0
14.	Niger			2.0
15.	Linseed			5.0
16.	Mustard			6.0
17.	Brinjal	496	5952	
18.	Potato	300	750	
19.	Cauliflower	508	4572	
20.	Pea	325	387	

Source: Distt. Agriculture office Bokaro

2.5. Weather data

Month	**Rainfall (mm)**	**Temperature ^{0} C**		**R H (%)**	**No. of Rainy Days**
		Maximum	**Minimum**		
April 11	20.8				2
May 11	72.8				7
June 11	523				18
July 11	157.2				17
August 11	504.8				21
Sept. 11	156				19
Oct. 11	81.4				4
Nov. 11	00				00
Dec11	00				00
Jan. 2012	58.4				5
Feb. 2012	13.6				3
March 2012	7.4				1
Total	**1595.4**				**97**

2.6 Production and productivity of livestock, Poultry, Fisheries etc. in the district

Category	**Population**	**Production**	**Productivity**
Cattle			
Crossbred	15121		
Indigenous	493525		

Buffalo	102956		
Sheep			
Crossbred	8898		
Indigenous	50183		
Goats	207156		
Pigs			
Crossbred	709		
Indigenous	42500		

Source: District Agriculture Office, Bokaro

2.7 Priority thrust areas

S. No	Thrust area
1	Soil water conservation and judicious use of available irrigation water.
2.	Intensification in crop production
3.	Diversification
4.	Development of seed production system.
5.	Establishment of small scale industries like preservation and processing industries & cold storage.
	Value addition in vegetables.
6.	Improvement of indigenous and genetically poor breeds of livestock.
7.	Management of soil acidity.
8.	

3. TECHNICAL ACHIEVEMENTS

3. A. Details of target and achievement of mandatory activities by KVK during 2011-12

OFT				FLD			
1				2			
Number of OFTs		Number of farmers		Number of FLDs		Number of farmers	
Target	Achievement	Target	Achievement	Target	Achievement	Target	Achievement
10	10	100	90	12	12 +(30 DRMR)	100	193

Training				Extension activities			
3				4			
Number of Courses		Number of Participants		Number of activities		Number of participants	
Target	Achievement	Target	Achievement	Target	Achievement	Target	Achievement
114	68	3025	2658		887		5590

Seed Production

Target 2011-12

Sl. No.	Crop	Variety	Area (ha)	Type of Seed
1.	Paddy	MTU- 7029	2.0	F/S
		Lalat	2.0	F/S
		Abhisekh	1.0	F/S
2.	Pigeon pea	Birsa Arhar - 1	0.5	F/S
3.	Niger	Puja	0.2	F/S
4.	Dhaincha	Asam Local	0.4	T/L
5.	Mustard	Shivani	0.4	F/S
6.	Toria	PT-303	0.2	F/S
7.	Turmeric	Rajendra Sonia	0.2	C/S

Achievement- 2011-12

Sl. No.	Crop	Variety	Area (ha)	Type of Seed	Quantity (qt) Expected (unprocessed)	Remarks
1.	Paddy	MTU- 7029	2.0	F/S	70.0	Poor yield of pigeon pea obtained due to heavy rain.
		Lalat	2.0	F/S	60.0	
		Abhisekh	1.0	F/S	25.0	
2.	Pigeon pea	Birsa Arhar - 1	0.5	F/S	2.0	
3.	Niger	Puja	0.2	F/S	0.5	
4.	Dhaincha	Asam Local	0.4	T/L	2.0	
5.	Mustard	Shivani	0.4	F/S	1.0	
6.	Toria	PT-303	0.2	F/S	0.4	
7.	Turmeric	Rajendra Sonia	0.2	C/S	4.0	

3.1 Achievements on technologies assessed and refined

A. Details of each On Farm Trial to be furnished in the following format

1) Title of on-farm trials
2) Problem diagnose
3) Details of technologies selected for assessment/refinement
4) Source of technology
5) Production system and thematic area
6) Performance of the Technology with performance indicators
7) Final recommendation for micro level situation
8) Constraints identified and feedback for research
9) Process of farmers participation and their reaction

OFT – 1

A.1) Title of on-farm trials :- Effect of balance fertilization on sweet potato grown in upland situation.

2) Problem diagnose :- Low productivity of sweet potato due to poor soil health and acidity in upland condition. This reduces the yield to an extent of about 40 %.

3) Details of technologies selected for assessment/refinement:-

Technology Option

Farmers practice - No use nutrients

Technological option **i** - 50 % recommended dose of fertilizer

Technological option **ii** - 50 % recommended dose of fertilizer + Lime @ 4 qt/ha in furrow application

Technological option **iii** - 100% recommended dose of fertilizer

(Recommended dose of fertilizer = 50:60:60 N:P_2O_5:K_2Okg/ha)

4) Source of technology :- B. A. U., Ranchi

5) Production system and thematic area :-

Upland production system, Soil fertility management

6) Performance of the Technology with performance indicators :- Given in part B

7) Final recommendation for micro level situation :-

The yield increase in sweet potato was 35.2 % in 50 % RDF and 78 % in 100 % RDF technology option over farmers practice. Response of lime was not significant. So for resource poor farmer 50 % RDF (20:30:30 N:P_2O_5:K_2Okg/ha) is recommended where as for resource rich farmer can get higher yield (16.2 ton/ha) as well as higher B:C ratio (4.73) with RDF(50:60:60 N:P_2O_5:K_2Okg/ha)

8) Constraints identified and feedback for research :-

Sweet potato has been grown in upland and highly acidic soils with minimum use of inputs. This crop has been neglected by scientist so there is need to develop variety suitable for acidic soil conditions and responsive to sub – optimal doses of fertilizer.

9) Process of farmers participation and their reaction :-

B. TECHNOLOGY ASSESSMENT AND REFINEMENT IN DETAIL

SOIL FERTILITY MANAGEMENT

Problem definition: Low productivity of sweet potato due to poor soil health and acidity in upland condition. This reduces the yield to an extent of about 40 %.

***Technology assessed or refined (as the case may be**): Assesment*

KVK conducted on-farm trial to assess the effect of balance fertilization on yield and net return of sweet potato grown in upland situation. The yield increase in sweet potato was 38.0 % in 50 % RDF and 77 % in 100 % RDF technology option over farmers practice. The highest B:C ratio (5.42) was found in technology option iii (100% RDF) followed by technology option i (50% RDF). There was increased in available P_2O_5 and K_2O content of post harvest soil samples of technology option i, ii and iii over farmers practice. Application of lime along with 50 % RDF treatment was found to be at par with 50% RDF treatment. Thus the effect of lime application was not significant as the sweet potato is the acid tolerant crop.

Table I: Effect of nutrient management on yield of sweet potato.

Technology option	No. of trials	Tuber yields (tons/ha)	% increase over farmer practice	Vine yield (ton/ha)	Cost of cultivation (Rs./ha)	Gross return (Rs./ha)	Net Return (Rs / ha)	BC Ratio
Farmers practice (No use nutrients)	08	9.93	-	31.5	14200.00	49650.00	35450.00	3.5
Technological option **i** (50 % recommended dose of fertilizer)		13.71	38.0	35.0	15200.00	68550.00	53350.00	4.5
Technological option **ii** **(**50 % recommended dose of fertilizer + Lime @ 4 qt/ha in furrow application)		13.81	39.0	35.1	16000.00	69050.00	53250.00	4.31
Technological option **iii** (100% recommended dose of fertilizer)		17.57	77.0	38.5	16200.00	87850.00	71650.00	5.42
CD(P=0.05)		3.4		4.5				

* Cost of sweet potato tuber is taken as Rs. 5000.00/ton

B.C Ratio= Gross return/ Gross cost of cultivation

Table II: Effect of balance fertilization on soil fertility status.

Technology option	Initial soil status				Final soil status			
	pH	OC (%)	P_2O_5 (kg/ha)	K_2O (kg/ha)	pH	OC (%)	P_2O_5 (kg/ha)	K_2O (kg/ha)
Farmers practice (No use nutrients)	4.8-5.5	0.35-0.52	8.5-17.0	80.0-140.0	Analysis is going on			
Technological option **i** (50 % recommended dose of fertilizer)	4.8-5.5	0.35-0.52	8.5-17.0	80.0-140.0				
Technological option **ii** **(**50 % recommended dose of fertilizer + Lime @ 4 qt/ha in furrow application)	4.8-5.5	0.35-0.52	8.5-17.0	80.0-140.0				
Technological option **iii** (100% recommended dose of fertilizer)	4.8-5.5	0.35-0.52	8.5-17.0	80.0-140.0				

OFT – 2

A.1) Title of on-farm trials **:-** Increasing system productivity in medium land through wheat and mustard intercropping with balance dose of nutrients.

2) Problem diagnose **:-** Low system productivity in medium land in rabi season due to imbalance dose of nutrients and mixed cropping. Thus reduces productivity of medium land by about 50 %

3) Details of technologies selected for assessment/refinement **:-** Assessment

Technology Option

Farmer's Practice **-** (Mixed cropping of wheat & mustard with 90 kg N + 65 kg P_2O_5/ha)

Technological option **i** - Wheat + mustard (intercropping 8:2) with 90 kg N + 65 kg P_2O_5/ha)

Technological option **ii** - Wheat + mustard (intercropping 8:2) with 90 kg N + 65 kg P_2O_5/ha + 40 kg K_2O/ha)

Technological option **Iii** - Wheat + mustard (intercropping 8:2) with balanced dose of nutrients (100:50:40 N: P2O5:K2Okg/ha)

4) Source of technology **:-** B.A.U., Ranchi

5) Production system and thematic area :- Wheat based production system, Integrated crop management

6) Performance of the Technology with performance indicators **:-** Harvesting of wheat is going on, as threshing and processing is not been done.

7 Final recommendations for micro level situation **:-**

8) Constraints identified and feedback for research **:-**

9) Process of farmers participation and their reaction **:-**

B. TECHNOLOGY ASSESSMENT AND REFINEMENT IN DETAIL

INTEGRATED CROP MANAGEMENT

Problem definition: Low system productivity in medium land in rabi season due to imbalance dose of nutrients and mixed cropping. Thus reduces productivity of medium land by about 50 %.

Technology assessed or refined (as the case may be*): Assessment*

OFT – 3

A.1) Title of on-farm trials :- Effect of transplanting techniques on the productivity of paddy in medium land situation.

2) Problem diagnose :- Low yield of paddy in medium land situation during kharif season.

3) Details of technologies selected for assessment/refinement :- Assessment

Technology Option

Farmers practice - (5-6 seedlings/ hill transplanting of 30-35 days old seedling.

Technological option **i** - Recommended transplanting 2-3 seedlings/ hill of 21 days old seedling.

Technological option **ii** - SRI 12 days old seedling, 1 seedlings/ hill at 25x25 cm

4) Source of technology :- ICAR

5) Production system and thematic area :- Rice based production system, Integrated crop management

6) Performance of the Technology with performance indicators :- Given in part B

7 Final recommendation for micro level situation :- SRI (12 days old seedling at 1 seedlings/ hill at 25x25) technique had given highest yield of 48.7 qt/ha which 38.4 % higher than farmers practice. Highest net return and B:C ratio had also been recorded in SRI technique.

8) Constraints identified and feedback for research :- As majority of the farmers depends on rain for transplanting of rice, so it is difficult for them to transplant 12 day old seedling.

9) Process of farmers participation and their reaction :-

B. TECHNOLOGY ASSESSMENT AND REFINEMENT IN DETAIL

INTEGRATED CROP MANAGEMENT

Problem definition: Low yield of paddy in medium land situation during kharif season.

Technology assessed or refined (as the case may be*): Assesment*

KVK conducted on-farm trial to assess the effect of different transplanting techniques on the productivity of paddy in medium land situation. SRI (12 days old seedling at 1 seedlings/ hill at 25x25) technique had given highest yield of 56.8 qt/ha which is 75.3 % higher than farmers practice. Highest net return and B:C ratio had also been recorded in SRI technique.

Table I: Effect of transplanting techniques on the productivity of paddy in medium land situation.

Technology Options	**No. of trials**	**Yield attributing characters**		**Yield (q/ha)**	**Cost of cultivation Rs.**	**Gross return (Rs / ha)**	**Net return (Rs./ha)**	**BC ratio**
		No. of panicle/m^2	No. of grains/ panicle					
Farmers practice (5-6 seedlings/ hill transplanting of 30-35 days old seedling	10	292	72	32.4	17500	34992	17492	1.99
Technological option **i** Recommended transplanting 2-3 seedlings/ hill of 21 days old seedling.		347	93.7	43.2	18500	46656	28156	2.52
Technological option **ii** SRI 12 days old seedling at 1 seedlings/ hill at 25x25		416	103.5	56.8	19200	61344	41844	3.14
CD 5 %		19.4	5.2	4.7				

Table II: Effect of transplanting techniques on soil fertility status.

Technology option	**Initial soil status**				**Final soil status**			
	pH	OC (%)	P_2O_5 (kg/ha)	K_2O (kg/ha)	pH	OC (%)	P_2O_5 (kg/ha)	K_2O (kg/ha)
Farmers practice (5-6 seedlings/ hill transplanting of 30-35 days old seedling	5.4-6.5	0.42-0.65	7.8-25.4	81-156				
Technological option **i** Recommended transplanting 2-3 seedlings/ hill of 21 days old seedling.	5.4-6.5	0.42-0.65	7.8-25.4	81-156				
Technological option **ii** SRI 12 days old seedling at 1 seedlings/ hill at 25x25	5.4-6.5	0.42-0.65	7.8-25.4	81-156				

OFT – 4

A.1) Title of on-farm trials :- Effect of brown manuring on productivity of upland rice.

2) Problem diagnose :- Low yield of upland paddy due to poor soil health and imbalance nutrient use. This reduces rice yield to and extent of about 30 %.

3) Details of technologies selected for assessment/refinement :- Assessment

Technology Option

Farmers practice - Sole upland rice + (20kg N + 16 kg P_2O_5) at the time sowing

Technological option **i** - Farmer practice + brown manuring with dhaincha @ 25 kg/ha (Spraying of 2, 4-D, 25-30 days after sowing @ 2 lit/ ha)

Technological option **ii** - Sole upland rice + recommended dose of fertilizer (60:30:20)

4) Source of technology :- I.C.A.R.

5) Production system and thematic area :- Upland rice production system, Integrated crop management

6) Performance of the Technology with performance indicators :- Given in part B

7 Final recommendation for micro level situation :-

8) Constraints identified and feedback for research :-

9) Process of farmers participation and their reaction :-

B. TECHNOLOGY ASSESSMENT AND REFINEMENT IN DETAIL

INTEGRATED CROP MANAGEMENT

Problem definition: Low yield of upland paddy due to poor soil health and imbalance nutrient use. This reduces rice yield to and extent of about 30 %.

***Technology assessed or refined (as the case may be**): Assesment*

KVK conducted on-farm trial to assess the effect of brown manuring on yield of direct seeded paddy and fertility status of soil. Brown manuring has increased grain yield by 14.8 % over farmers practice and net return and B:C ratio had also increased. Recommended dose of fertilizer had increased yield by 27.8 % over farmers practice. Brown manuring will also maintain soil fertility**.**

Table I: Effect of brown manuring on the productivity of upland paddy.

Technology Options	**No. of trials**	**Yield (q/ha)**	**% increase in yield over farmers practice**	**Cost of cultivation Rs.**	**Gross return (Rs / ha)**	**Net return (Rs./ha)**	**BC ratio**
Farmers practice Sole upland rice + (20kg N + 16 kg P_2O_5) at the time sowing	08	17.6		8500	15840	7340	1.86
Technological option **i** Farmer practice + brown manuring with dhaincha @ 25 kg/ha		20.2	14.8	9500	18180	8680	1.91
Technological option **ii** Upland rice + recommended dose of fertilizer (60:30:20)		22.5	27.8	9200	20250	11050	2.2
CD 5%		1.8	-	-	-	-	-

Table II: Effect of brown manuring on soil fertility status.

Technology option	**Initial soil status**				**Final soil status**			
	pH	OC (%)	P_2O_5 (kg/ha)	K_2O (kg/ha)	pH	OC (%)	P_2O_5 (kg/ha)	K_2O (kg/ha)
Farmers practice Sole upland rice + (20kg N + 16 kg P_2O_5) at the time sowing	4.7-5.5	0.30-0.48	6.8-14.5	70.5-175.0				
Technological option **i** Farmer practice + brown manuring with dhaincha @ 25 kg/ha	4.7-5.5	0.30-0.48	6.8-14.5	70.5-175.0				
Technological option **ii** Upland rice + recommended dose of fertilizer (60:30:20)	4.7-5.5	0.30-0.48	6.8-14.5	70.5-175.0				

OFT – 5

A.1) Title of on-farm trials :- Chemical control of stem borer in kharif maize under rainfed condition.

2) Problem diagnose :- Low productivity of maize in kharif season due to high infestation of stem borer. This reduces the yield upto 25%.

3) Details of technologies selected for assessment/refinement :- Assessment

Technological option

Farmers practice - Use of Endosulfan @ 2 ml/lit water after infestation

Technological option **i** - Carbofuran 3 G @ 20 kg/ha at 20 DAS

Technological option **ii** - 2 Spray of imidacloprid @1 ml/2lit water at 20 & 35 DAS

Technological option **iii** - Carbofuran 3 G @ 20 kg/ha at 20 DAS + one spraying of imidacloprid @ 1 ml/2litwater at 35 DAS

4) Source of technology :- B.A.U., Ranchi

5) Production system and thematic area :- Maize production system, Insect pest management

6) Performance of the Technology with performance indicators :- Given in part B

7 Final recommendation for micro level situation :-

8) Constraints identified and feedback for research :-

9) Process of farmers participation and their reaction :-

B. TECHNOLOGY ASSESSMENT AND REFINEMENT IN DETAIL

INSECT PEST MANAGEMENT

Problem definition: Low productivity of maize in kharif season due to high infestation of stem borer. This reduces the yield upto 25%.

***Technology assessed or refined (as the case may be**): Assessment*

Table I: Effect of chemical insecticides on control of stem borer (*C. partellus*) in maize

Technology option	Percentage		Yield qt/ha	Gross return	Net return	B:C ratio
	Dead heart	Infestation				
Farmers practice - Use of Endosulfan @ 2 ml/lit water after infestation	7.2	13.9	21.2	16960.00	2660.00	1.18
Technological option **i** - Carbofuran 3 G @ 20 kg/ha at 20 DAS	6.8	12.4	22.4	17920.00	3420.00	1.25
Technological option **ii** - 2 Spray of imidacloprid @1 ml/2lit water at 20 & 35 DAS	6.2	11.6	23.8	19040.00	3640.00	1.23
Technological option **iii** - Carbofuran 3 G @ 20 kg/ha at 20 DAS + one spraying of imidacloprid @ 1 ml/2litwater at 35 DAS	5.4	10.8	24.6	19680.00	4880.00	1.32

OFT – 6

A.1) Title of on-farm trials :- Effect of control measures of fruit and shoot borer in brinjal in rabi season.

2) Problem diagnose :-

3) Details of technologies selected for assessment/refinement :- Assessment

Technological option

Farmers practice - Cypermethrin @ 1 ml/lit after appearance of infestation (two spray)

Technological option **i** - Flubendamide 480 SC @1 ml/ 5 lit water at 30 & 50 DAT

Technological option **ii** - **–** Cartap hydrochloride @ 1gm/lit at 30 & 50 DAT

Technological option **iii** - Flubendamide 480 SC @1 ml/ 5 lit water at 30 DAT+ Cartap hydrochloride @ 1gm/lit at 50 DAT

4) Source of technology :-

5) Production system and thematic area :-

6) Performance of the Technology with performance indicators :- Result data is being processed.

7 Final recommendation for micro level situation :-

8) Constraints identified and feedback for research :-

9) Process of farmers participation and their reaction :-

OFT- 7

A1) Title :- Use of weeder to reduce drudgery in weeding of groundnut crops.

2) Problem diagnose: - High drudgery involvement in weeding in groundnut crops.

3) Technology Assessed/ Refined: - Assessment

Technological option:-

Farmer's practice - Mannual weeding by spade

Technological option **i** - Weeding by grubber weeder

Technological option **ii** - Weeding by single wheel hoe weeder

4) Source of Technology :- I.A.R.I., New Delhi

5) Production system and thematic area:- Weed management, drudgery reduction

6) Performance of the Technology with performance indicators :- Given in part B

7 Final recommendation for micro level situation :- Performance of single wheel hoe was found best in view of lower drudgery involvement and lower operating cost in comparison to farmer practice.

8) Constraints identified and feedback for research :- Non availability of Grubber and single wheel hoe in local market.

9) Process of farmers participation and their reaction :-Farmer s themselves used these weeding equipment and appreciated single wheel hoe.

B. TECHNOLOGY ASSESSMENT AND REFINEMENT IN DETAIL

WEED MANAGEMENT & DRUDGERY REDUCTION

Problem definition: High drudgery involvement in weeding in groundnut crops

Technology assessed or refined (as the case may be*): Assesment*

KVK conducted on-farm trial to reduce drudgery involve in weeding in groundnut crops. Performance of single wheel hoe was found best in view of lower drudgery involvement and lower operating cost in comparison to farmer practice.

Table I: Performance of different weeder to reduce drudgery in weeding of groundnut crops.

Technology option	**No. of trials**	**Drudgery parameter**		**Field parameter**				
	10	Average resting heart beat (b/min)	Average working heart beat (b/min)	Plant damage (%)	Field capacity (ha/h)	Increase in efficiency over farmer practice (%)	Labour requirement (man- hr/ha)	Operating cost (Rs./ha)
Farmers practice Mannual weeding by spade		82	133	5.0	0.0072	-	139	1998.00
Technological option **i** Weeding by grubber weeder		82	127	3.0	0.0105	45.83	96	1332.00
Technological option **ii** Weeding by single wheel hoe weeder		82	120	1.5	0.0121	68.05	83	1221.00

OFT – 8

A1) Title :- Effect of different method of irrigation on yield of tomato crop.

2) Problem diagnose: - Low productivity in tomato under medium land situation.

3) Technology Assessed/ Refined: - Assessment

Technological option :-

Farmer's practice - Furrow irrigation method
Technological option **i** - Skip irrigation method
Technological option **ii** - Alternate Skip irrigation method
Technological option **iii** - Raised bed and furrow irrigation method

4) Source of Technology :- I.A.R.I., New Delhi

5) Production system and thematic area :- Vegetable production system, Water management

6) Performance of the Technology with performance indicators :- Given in part B

7 Final recommendation for micro level situation :- Technology option ii Alternate skip irrigation method has highest water use efficiency where as technology option iii raised bed and furrow irrigation method has highest net return and B:C ratio.

8) Constraints identified and feedback for research :-

9) Process of farmers participation and their reaction :-

B. TECHNOLOGY ASSESSMENT AND REFINEMENT IN DETAIL

WATER MANAGEMENT

Problem definition: Low productivity in tomato under medium land situation.

***Technology assessed or refined (as the case may be**): Assesment*

KVK conducted on-farm trial to evaluate the different methods of irrigation in tomato. Technology option ii Alternate skip irrigation method has highest water use efficiency where as technology option iii raised bed and furrow irrigation method has highest net return and B:C ratio.

Table I: Effect of different method of irrigation on yield of tomato crop.

Technology option	No. of trials	Water required (cm/ha)	Water use efficiency (kg/ha/cm)	Yield (q/ha)	Cost of cultivation (Rs./ha)	Gross return (Rs / ha)	Net income (Rs./ha)	B:C Ratio
Farmers practice- Furrow irrigation method	10	7.20	3694.4	266	41608	212800	171192	5.11
Technological option **i** Skip irrigation method		3.60	4750.0	171	37969	136800	98831	3.6
Technological option **ii** Alternate Skip irrigation method		3.96	6237.4	247	38215	197600	159385	5.17
Technological option **iii** Raised bed and furrow irrigation method		6.75	4222.2	285	41145	228000	186855	5.54

Plant spacing: 0.5 m, Row spacing: 0.5 m, Seed rate: 0.250 kg/ha

Remarks: Sale price of Tomato @ Rs.8 .00/kg, Wages of labour @ Rs.111.00/day

OFT- 9

A1) Title : - Assessment of different varieties of sweet potato in acid soil condition.

2) Problem diagnose:- Low yield of sweet potato due to use of non descript variety.(Local variety

3) Technology Assessed/ Refined: - Assessment

Technological option :-

Farmer's practice	-	Use of local variety
Technological option i	-	Shankar
Technological option ii	-	Samrat
Technological option iii	-	Shree Nandani
Technological option iv	-	Pusa safeda

4) Source of Technology :- HARP, Plandu, Ranchi

5) Production system and thematic area - Tuber crop production system, Production and management technology.

6) Performance of the Technology with performance indicators :- Given in part B

7 Final recommendation for micro level situation :-Varity Pusa safed gave the highest yield 11.5 tone / hq which is 17.3 per cent higher than local varity followed by Sri Nandni (11.2 tonne/ hq)

8) Constraints identified and feedback for research :-

9) Process of farmers participation and their reaction :-

B. TECHNOLOGY ASSESSMENT AND REFINEMENT IN DETAIL

INTEGRATED CROP MANAGEMENT

Problem definition:

***Technology assessed or refined (as the case may be**): Assessment*

Table I: Performance of different varieties of sweet potato in acid soil

Technological option	Yield (t/ha)		Per cent increase in tuber yield over FP	Cost of cultivation Rs.	Gross return Rs.	Net Return (Rs.)	B:C Ratio
	Tuber Yield	Vine Yield					
FP- Use of local variety	9.8	30.0	-	14200.00	49000.00	34800.00	3.45
1- Shankar	10.0	30.6	2.0	14200.00	50000.00	35800.00	3.52
2- Samrat	10.5	32.2	7.2	14200.00	52500.00	38300.00	3.70
3- Shree Nandani	11.2	33.0	14.3	14200.00	56000.00	41800.00	3.94
4- Pusa safeda	11.5	33.5	17.3	14200.00	57500.00	43300.00	4.04

OFT- 10

A1)Title of on- farm trials : - Performance of suitable Ginger based cropping system under irrigated condition in summer season.

2) Problem diagnose : - Low system productivity of in vegetable based cropping system under irrigated condition.

3) Details of Technologies selected for assessment/ refinement: - Refinement

Technological option :-

Farmers practice - Ginger sole crops
Technological option **i** - Ginger+ Spinach (Mixed cropping)
Technological option **ii** - Ginger+ Spinach (Mixed cropping) + Cauliflower
Technological option **ii** - Ginger+ Amaranths (Mixed cropping) + Cauliflower

4) Source of Technology :-

5) Production system and thematic area: - Vegetable production system**,** Inter cropping

6) Performance of the Technology with performance indicators :- Given in part B

7 Final recommendation for micro level situation :-

8) Constraints identified and feedback for research :-

9) Process of farmers participation and their reaction :-

B. TECHNOLOGY ASSESSMENT AND REFINEMENT IN DETAIL

INTER CROPPING

Problem definition: Low system productivity of in vegetable based cropping system under irrigated condition.

***Technology assessed or refined (as the case may be**): Assessment*

Table I: Performance of different ginger based cropping system.

Technological option	Yield (qt/ha)		Ginger equivalent yield (qt/ha)	Cost of cultivation Rs.	Gross return Rs.	Net Return (Rs.)	B:C Ratio
	Ginger	Component crop					
FP- Ginger sole crops	205.56	-	205.56	148000	411116	263116	2.78
1- Ginger+ Spinach (Mixed cropping)	201.73	103.55	203.48	149000	507024	358024	3.40
2-Ginger+ Spinach (Mixed cropping) + Cauliflower	199.60	Spinach-101.8 Cauliflower-201.53	401.64	158000	803462	645462	5.1
3-Ginger+ Amaranths (Mixed cropping) + Cauliflower	200.00	Amaranths- 54.23 Cauliflower-201.45	367.35	157000	634071	477071	4.03

3.2 Achievements of Frontline Demonstrations

A. Details of FLDs implemented during 2011-12 (Information is to be furnished in the following **three tables** for **each category** i.e. **cereals, horticultural crops, oilseeds, pulses, cotton and commercial crops**.)

Sl. No.	Crop	Thematic area	Technology Demonstrated@	Season and year	Area (ha)		No. of farmers/ demonstration			Reasons for shortfall in achievement
					Proposed	Actual	SC/ST	Others	Total	

@ please mention component technology like seed/ fertilizer/ bio-fertilizer/ plant protection or full package Details of farming situation

Crop	Season	Farming situation (RF/Irrigated)	Soil type	Status of soil			Previous crop	Sowing date	Harvest date	Seasonal rainfall (mm)	No. of rainy days
				N	P	K					

Performance of FLD

Oilseeds: Mustard (Sponsored by DRMR, Bharatpur)

Frontline demonstrations on oilseed crops

Crop	Thematic Area	Name of the technology demonstrated	No. of Farmers	Area (ha)	Yield (q/ha)		% Increase	*Economics of demonstration (Rs./ha)				*Economics of check (Rs./ha)			
					Demo	Check		Gross Cost	Gross Return	Net Return	** BCR	Gross Cost	Gross Return	Net Return	** BCR
Mustard	Integrated crop management	Var- Mahak	39	10.0	9.2		41.5	8200.00	23000	14800	2.8				
		Var- NPJ- 113	10	5.0	8.5		30.8	8200.00	21250	13050	2.59				
		Var- Pusa Agrani	17	5.0	10.2		56.9	8200.00	25500	17300	3.11	6800	16250	9450	
		Var- NRCHB- 101	21	5.0	11.1		70.8	8200.00	27750	19550	3.38				
		NRCDR- 02	16	5.0	11.7	6.5	80.0	8200.00	29250	21050	3.56				2.38
Total															

* Economics to be worked out based total cost of production per unit area and not on critical inputs alone.
** BCR= GROSS RETURN/GROSS COST

Pulses

Frontline demonstration on pulse crops

Crop	Thematic Area	Name of the technology demonstrated	No. of Farmers	Area (ha)	Yield (q/ha)		% Increase	*Economics of demonstration (Rs./ha)				*Economics of check (Rs./ha)			
					Demo	Check		Gross Cost	Gross Return	Net Return	** BCR	Gross Cost	Gross Return	Net Return	** BCR
Pigeon pea	Integrated crop management	Var- ND- 1	18	4.0	Data is under process										
Total															

* Economics to be worked out based total cost of production per unit area and not on critical inputs alone.
** BCR= GROSS RETURN/GROSS COST

Other crops

Category and Crop	Thematic area	Name of the technology demonstrated	No. of Farmer	Area (ha)	Yield (q/ha)		% change in yield	Other parameters		*Economics of demonstration (Rs./ha)				*Economics of check (Rs./ha)			
					Demonstration	Check		Demo	Check	Gross Cost	Gross Return	Net Return	** BCR	Gross Cost	Gross Return	Net Return	** BCR
Cereals																	
Vegetable crops																	
Bitter gourd		**Variety- Pali**	**15**	**1.0**	**Standing crop**												
Bottle gourd		**Variety -Uttra**	**14**	**1.0**	**Standing crop**												
Chilly		**Variety –JK -918**	**10**	**1.0**	**Standing crop**												
Cucumber		**Variety –Malo & Malni**	**10**	**1.0**	**Standing crop**												
Tomato		**JK- Harsha & Nandani**	**12**	**2.0**	**Standing crop**												
Others (pl.specify)		**Drum seeder for paddy sowing**	**6**	**2.0**	**40**	**35**	**14.3**			**16000.00**	**44000.00**	**28000.00**	**2.75**	**19000.00**	**38500.00**	**19500.00**	**2.03**
Lac culture			**6**	**6 Unit**													
	Total																

* Economics to be worked out based total cost of production per unit area and not on critical inputs alone.
** BCR= GROSS RETURN/GROSS COST

3.3 Achievements on Training (Including the sponsored and FLD training programmes):

(A)ON Campus

Thematic Area	No. of Courses	No. of Participants											
		Others			SC			ST			Total		Grand Total
		M	F	T	M	F	T	M	F	T	M	F	
(A) Farmers & Farm Women													
I Crop Production													
Cropping Systems	1	12	-	12	-	-	-	15	-	15	27	-	27
Integrated Crop Management	5	89	-	89	1	-	1	25	-	25	115	-	115
II Horticulture													
a) Vegetable Crops													
Off-season vegetables	2	26	-	26	-	-	-	27	-	27	53	-	53
Nursery raising	1	23	-	23	-	-	-	2	-	2	25	-	25
Exotic vegetables like Broccoli	1	16	-	16	3	-	3	8	-	8	27	-	27
Mushroom production	2	29	-	29	-	-	-	-	-	-	29	-	29
b)Spices													
Production and Management technology	2	29	-	29	-	-	-	-	-	-	29	-	29
III Soil Health and Fertility Management													
Soil fertility management													
Soil and Water Conservation	5	63	-	63	5	-	5	14	-	14	82	-	82
Integrated Nutrient Management	4	61	2	63	4	-	4	32	-	32	97	2	99
Micronutrient deficiency in crops	2	19	-	19	8	-	8	-	-	-	27	-	27
Production and use of organic inputs	2	29	-	29	-	-	-	-	-	-	29	-	29
IV Home Science/Women empowerment													
Value addition	2	30	-	30	-	-	-	-	-	-	30	-	30
V Agril. Engineering													
Repair and maintenance of farm machinery and implements	1	23	-	23	-	-	-	2	-	2	25	-	25
Post harvest technology	2	28	-	28	-	-	-	-	-	-	28	-	28
VI Plant Protection													
Integrated Pest Management	2	35	2	73	-	-	-	20	-	20	55	2	57
Integrated Disease Management	4	66	3	69	-	-	-	34	-	34	100	3	103
TOTAL	**38**	**578**	**7**	**585**	**21**		**21**	**179**		**179**	**778**	**7**	**785**
(B) RURAL YOUTH													
Mushroom Production	1	25	-	25	-	-	-	-	-	-	25	-	25
Seed production	1	20	-	20	-	-	-	5	-	5	25	-	25
Planting material production	1	15	-	15	-	-	-	-	-	-	15	-	15
Vermi-culture	1	16	-	16	2	-	2	6	-	6	24	-	24
Repair and maintenance of farm machinery and implements	1	23	-	23	1	-	1	1	-	1	25	-	25
Piggery	1	-	-	-	-	-	-	18	-	18	18	-	18
TOTAL	**6**	**99**		**99**	**3**		**3**	**30**		**30**	**132**		**132**
(C) Extension Personnel													
Productivity enhancement in field crops	3	66	-	66	4	-	4	1	-	1	71	-	71
Integrated Nutrient management	1	8	-	8	7	-	7	12	-	12	27	-	27
Care and maintenance of farm machinery and implements	1	24	-	24	1	-	1	-	-	-	25	-	25
Farming system	1	8	-	8	7	-	7	6	-	6	21	-	21
Installation and maintenance of micro irrigation system	1	20	-	20	-	-	-	12	-	12	32	-	32
Water harvesting system	23	-	23	-	-	-	-	-	-	-	23	-	23
TOTAL	**30**	**126**	**23**	**126**	**19**	**-**	**19**	**31**	**-**	**31**	**199**	**-**	**199**

(A)OFF Campus

Thematic Area	No. of Courses	No. of Participants											
		Others			SC			ST			Total		Grand Total
		M	F	T	M	F	T	M	F	T	M	F	
(A) Farmers & Farm Women													
I Crop Production													
Cropping Systems	2	40	-	40	-	-	-	-	-	-	40	-	40
Crop Diversification													
Nursery management	1	19	-	19	-	-	-	-	-	-	19	-	19
Integrated Crop Management	7	206	-	206	-	-	-	15	-	15	221	-	221
II Horticulture													
a) Vegetable Crops													
Off-season vegetables	1	38	-	38	4	-	4	-	-	-	42	-	42
Nursery raising	3	65	-	65	10	-	10	-	-	-	75	-	75
Others(Cultivation of vegetable)	1	34	-	34	5	-	5	-	-	-	39	-	39
Others (Practice and management of fruit vegetable)	1	20	-	20	-	-	-	10	-	10	30	-	30
b) Tuber crops													
Production and Management technology	2	66	-	66	7	-	7	-	-	-	73	-	73
Cultivation practice of cucurbits	1	32	-	32	-	-	-	-	-	-	32	-	32
c) Spices													
Production and Management technology	1	26	-	26	-	-	-	-	5	5	26	5	31
III Soil Health and Fertility Management													
Soil fertility management													
Soil and Water Conservation	3	87	-	87	8	-	8	-	-	-	95	-	95
Integrated Nutrient Management	4	113	-	113	-	-	-	3	-	3	116	-	116
Management of Problematic soils	2	51	-	51	-	-	-	11	-	11	62	-	62
Micro nutrient deficiency in crops	2	64	-	64	4	-	4	-	-	-	68	-	68
Nutrient Use Efficiency													
Soil and Water Testing	1	26	-	26	-	-	-	8	-	8	34	-	34
Others, if any) Blue green algae	1	26	-	26	-	-	-	-	-	-	26	-	26
IV Livestock Production and Management													
Disease Management	2	61	-	61	-	-	-	-	-	-	61	-	61
VI Agril. Engineering													
Repair and maintenance of farm machinery and implements	2	63	-	63	-	-	-	-	-	-	63	-	63
Use of plastics in farming practices	1	20	-	20	5	-	5	8	-	8	33	-	33
Post harvest technology	3	89	-	89	-	-	-	12	-	12	101	-	101
Others (Drip irrigation)	1	6	-	6	6	-	6	24	-	24	36	-	36
VII Plant Protection													
Integrated Pest Management	4	99	-	99	36	-	36	-	-	-	135	-	135
Integrated Disease Management	3	95	-	95	-	-	-	15	-	15	110	-	110
TOTAL	**49**	**1346**	**-**	**1346**	**85**	**-**	**85**	**106**	**5**	**111**	**1537**	**5**	**1542**

(C) Consolidated table (ON and OFF Campus)

Thematic Area	No. of Courses	No. of Participants											
		Others			SC			ST			Total		Grand Total
		M	F	T	M	F	T	M	F	T	M	F	
(A) Farmers & Farm Women													
I Crop Production													
Cropping Systems	3	52	-	52	-	-	-	15	-	15	67	-	67
Crop Diversification													
Nursery Management	1	19	-	19	-	-	-	-	-	-	19	-	19
Integrated Crop Management	12	295	-	295	1	-	1	41	-	41	337	-	337
II Horticulture													
a) Vegetable Crops													
Off-season vegetables	3	64	-	64	4	-	4	27	-	27	95	-	95
Nursery raising	4	88	-	88	10	-	10	2	-	2	100	-	100
Exotic vegetables like Broccoli	1	16	-	16	3	-	3	8	-	8	27	-	27
Others (Cultivation of vegetable)	1	34	-	34	5	-	5	-	-	-	39	-	39
Practice and management of fruit vegetable	1	20	-	20	-	-	-	10	-	10	30	-	30
Mushroom production	2	29	-	29	-	-	-	-	-	-	29	-	29
b) Tuber crops													
Production and Management technology	2	66	-	66	7	-	7	-	-	-	73	-	73
Cultivation practice of cucurbits	1	32	-	32	-	-	-	-	-	-	32	-	32
c)Spices													
Production and Management technology	3	55	-	55	-	-	-	-	5	5	55	5	60
III Soil Health and Fertility Management													
Soil fertility management													
Soil and Water Conservation	8	150	-	150	13	-	13	14	-	14	177	-	177
Integrated Nutrient Management	8	174	2	176	4	-	4	35	-	35	213	2	215
Production and use of organic inputs	2	29	-	29	-	-	-	-	-	-	29	-	29
Management of Problematic soils	2	51	-	51	-	-	-	11	-	11	62	-	62
Micronutrient deficiency in crops	4	83	-	83	12	-	12	-	-	-	95	-	95
Soil and Water Testing	1	26	-	26	-	-	-	8	-	8	34	-	34
Others, if any) Blue green algae	1	26	-	26	-	-	-	-	-	-	26	-	26
IV Livestock Production and Management													
Disease Management	2	61	-	61	-	-	-	-	-	-	61	-	61
IV Home Science/Women empowerment													
Value addition	2	30	-	30	-	-	-	-	-	-	30	-	30
V Agril. Engineering													
Use of plastics in farming practices	1	20	-	20	5	-	5	8	-	8	33	-	33
Repair and maintenance of farm machinery and implements	3	86	-	86	-	-	-	2	-	2	88	-	88
Post harvest technology	5	117	-	117	-	-	-	12	-	12	129	-	129
Others (Drip irrigation)	1	6	-	6	6	-	6	24	-	24	36	-	36
VI Plant Protection													
Integrated Pest Management	6	134	2	136	36	-	36	20	-	20	190	2	192

Integrated Disease Management	7	161	3	164	-	-	-	49	-	49	210	3	213
TOTAL	**87**	**1924**	**7**	**1931**	**106**	**-**	**106**	**285**	**5**	**290**	**2316**	**12**	**2327**
(B) RURAL YOUTH													
Mushroom Production	1	25	-	25	-	-	-	-	-	-	25	-	25
Seed production	1	20	-	20	-	-	-	5	-	5	25	-	25
Planting material production	1	15	-	15	-	-	-	-	-	-	15	-	15
Vermi-culture	1	16	-	16	2	-	2	6	-	6	24	-	24
Repair and maintenance of farm machinery and implements	1	23	-	23	1	-	1	1	-	1	25	-	25
Piggery	1	-	-	-	-	-	-	18	-	18	18	-	18
TOTAL	**6**	**99**		**99**	**3**		**3**	**30**		**30**	**132**		**132**
(C) Extension Personnel													
Productivity enhancement in field crops	3	66	-	66	4	-	4	1	-	1	71	-	71
Integrated Nutrient management	1	8	-	8	7	-	7	12	-	12	27	-	27
Care and maintenance of farm machinery and implements	1	24	-	24	1	-	1	-	-	-	25	-	25
Farming system	1	8	-	8	7	-	7	6	-	6	21	-	21
Others(Advances in crop production)	1	19	-	19		-	-	-	-	-	19	-	19
Installation and maintenance of micro irrigation system	1	20	-	20	-	-	-	12	-	12	32	-	32
Water harvesting system	1	23	-	23	-	-	-	-	-	-	23	-	23
TOTAL	**9**	**145**	**-**	**168**	**19**		**19**	**31**		**31**	**218**	**-**	**218**

(D) Vocational training programmes for Rural Youth

Crop / Enterprise	Identified Thrust Area	Training title*	Duration (days)	No. of Participants			Self employed after training			Number of persons employed else where
				M	F	T	Type of units	No. of units	Number of persons employed	
Paddy	To produce quality seed of paddy	seed production of paddy	5	25	-	25	4	4	9	3
Vermi compost	To produce quality vermi compost and popularize	Vermi compost production	10	52	-	52	20	18	17	7
Animals	Minimize the diseases in animals	Diseases and feed management in pig and goat	10	48	-	48	3	3	3	4
Diesel Pump set	Entrepreneurship for school dropout	Care and maintenance of diesel engine and pump set	10	44	-	44	3	3	5	3
Mushroom	To meet the demand of mushroom	Mushroom Production	5	25	-	25	5	5	12	4
Sapling	Entrepreneurship for school dropout	Planting material production	5	15	-	15	-	-	-	3
	Value addition	Preservation of locally available vegetable and fruits	5	30	-	30	2	2	2	-
		Total	**50**	**239**	**-**	**239**	**37**	**35**	**48**	**24**

*training title should specify the major technology /skill transferred

(E) Sponsored Training Programmes

Sl.No	Title	Thematic area	Month	Duration (days)	Client PF/RY/ EF	No. of courses	No. of Participants										Sponsoring Agency
							Male			Female			Total				
							Oth	SC	ST	Oth	SC	ST	Oth	SC	ST	Total	
1.	Advances in crop production	Productivity enhancement in field crops	Feb. 2012	3	EF (krishak mitra)	7	143	24	38	5	-	-	148	24	38	210	ATMA, Bokaro
2.	Crop production of cereals & pulses	Productivity enhancement in field crops	March 2012	5	PF	2	44	-	16	-	-	-	44	-	16	60	ATMA, Bokaro

3.4. Extension Activities (including activities of FLD programmes)

Nature of Extension Activity	No. of activities	Farmers			Extension Officials			Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Field Day	10	475	-	475						475
Kisan Mela	1	4000	-	4000	-	-	-	-	-	4000
Kisan Ghosthi	2	93	-	93						93
Exhibition	-	-	-	-	-	-	-	-	--	-
Film Show	6	89	-	89	-	-	-	-	-	89
Method Demonstrations										
Farmers Seminar										
Workshop										
Group meetings										
Lectures delivered as resource persons	24									
Newspaper coverage	7									
Radio talks										
TV talks	8									
Popular articles										
Extension Literature	6									6000
Advisory Services										
Scientific visit to farmers field	86	525	-	525	-	-	-	-	-	525
Farmers visit to KVK		408	-	408	-	-	-	-	-	408
Diagnostic visits										
Exposure visits										
Ex-trainees Sammelan										
Soil health Camp										
Animal Health Camp										
Agri mobile clinic										
Soil test campaigns (Analysis)										
Farm Science Club Conveners meet										
Self Help Group Conveners meetings										
Mahila Mandals Conveners meetings										
Celebration of important days (specify)										
Help line service	736									736
Any Other (Technology Week)	1	250								250
Total	887			5590						12576

3.5 Production and supply of Technological products

Village seed

Crop	variety	Quantity of seed (q)	Value (Rs)	Number of farmers provided
Total				

KVK farm

Crop	variety	Quantity of seed (q)	Value (Rs in lac)	Number of farmers provided
Cereals				
Paddy				
	MTU- 7029	70.0	1.82	
	Lalat	40.0	1.04	
	Abhisekh	25.0	0.65	
Pigeon pea	Birsa Arhar - 1	2.0	0.12	
Niger	Puja	0.5	0.025	
Dhaincha	Asam Local	2.0	0.06	
Mustard	Shivani	1.0	0.07	
Toria	PT-303	0.4	0.028	
Turmeric	Rajendra Sonia	4.0	0.10	
Total			3.913	

3.6 Literature Developed/Published (with full title, author & reference)

(A) KVK News Letter ((Date of start, Periodicity, number of copies distributed etc.)

(B) Literature developed/published

Item	Title	Authors name	Number
Research papers			
Technical reports			
News letters			
Technical bulletins			
Popular articles			
Extension literature			
	cSxu mRiknu dh mUUkr rduhd	Mk- vfuy dqekj Jh mn; dqekj flag Jherh uhuk Hkkjrh Mk- lq/khj dqekj >k	1000
	—f"k foKau dsUnz cksdkjks }kjk vuq'kaflr rduhd	Jh mn; dqekj flag Mk- lq/khj dqekj >k Mk- vfuy dqekj Jh fou; dqekj	1000
	lw{e flapkbZ iz.kkyh	Jh fou; dqekj Mk- vfuy dqekj Jh mn; dqekj flag Mk- lq/khj dqekj >k	1000
	lfCt;ksa ds dhV ,oa fu;a=.k	Jherh uhuk Hkkjrh Mk- vfuy dqekj Jh mn; dqekj flag	1000
	vkdfLed Qly ;kstuk	Mk- lq/khj dqekj >k Mk- vfuy dqekj Jh mn; dqekj flag	2000

		Jh fou; dqekj	
	xsgw¡ dh mUur rduhd	Mk- lq/khj dqekj >k Mk- vfuy dqekj Jh mn; dqekj flag Jh fou; dqekj	500
Others (Pl. specify)			
TOTAL			**6500**

(C) Details of Electronic Media Produced

S. No.	Type of media (CD / VCD / DVD / Audio-Cassette)	Title of the programme	Number

(D) Details of HRD programmes undergone:

Name	Programme	Date and Duration	Organized by
Sri Uday Kr. Singh	National conference of KVKs	03-05 Dec. 2011	ICAR
Miss Priyanka Verma	Training cum workshop on production of planting materials through improved propagation methods	16 – 18 Jan. 2012	BAU, Ranchi
Sri Uday Kr. Singh	EFC for XIIth plan 2012-2017	21.01.2012	ZPD, Zone –II, Kolkata
Dr. S.K.Jha and Sri Naman Kandulna	Use of ICT for Rapid Dissemination Appropriate Farm Technologies	06-08 Feb. 2012	BAU, Ranchi
Dr. S.K.Jha	21 days training prog. On "Application of Remote Sensing and GIS for watershed Characterization and Resource Planing"	20 Feb. 2012 to 11 March 2012	NBBSS & LUP (ICAR) Kolkata
Sri Uday Kr. Singh	State level workshop	28.02.2012	ZPD, Zone –II, Kolkata
Sri Vinay Kumar	Operation and maintenance of farm implements and machineries	12 – 14 March 2012	BAU, Ranchi
Dr. S.K.Jha	Workshop on DRMR programme	19-20 March 2012	DRMR, Bharatpur, Rajasthan
Mrs. Neena Bharti	Climate Resilient Agriculture in Jharkhand	24.03.2012	BAU, Ranchi

3.7. Success stories/Case studies, if any (two or three pages write-up on each case with suitable action photographs)

KRISHI VIGYAN KENDRA, BOKARO

GROWING GREEN WITH NONE TO ENVY

Located 20 km from the district head quarter town Bokaro steel city, Dharampura village is inhabited by about300 family. The villagers here practice single crop farming paddy. Lack of awareness about modern farming trends has compounded their woes. Though they hard working, they struggle to maintain food security for the whole year. The farm produce is not even sufficient to keep their hearths going round the year. So during the off season hunger, rebel fear and lack of opportunity at home had forced youths to migrate to Uttar Pradesh, Madhya Pradesh as labourers.

In 2009, one farmer Mr Goutan visited the KVK head quarter Petarwar after seeing a local news paper report about training programme organized at his neighbouring village Jhopro in collaboration with Raj Development Society Bokaro. KVK scientists gave him a patient listening and came to know that he

own 1 ha of land in which he uses to grow paddy and pigeon pea and maize in kharif season. He revealed that in-spite of doing hard work he was unable earn incremental profit from agriculture as his net annual invome was abound 10 to 12 thousand only. So he along with his friends used to migrate after paddy transplanting.

Looking at the round the year demand for vegetable in the industrial Bokaro Steel City and adjoining coal capital of the country i.e Dhanbad a team of KVK scientists visited their village and organized a meeting in collaboration with Raj Development Society in 2009 in their village. In this meeting KVK scientists advised them to make a group of youth and invited them to participate in 4 day on campus training programme on off season vegetable cultivation with improved management practices and application of balanced nutrients.

KVK has also analysed their soil samples of vegetable field under RKVY programme. As per soil test report they were advised by the KVK scientists to use lime/dolomite @ 1.5 to 2.0 kg / dismil in their upland soils. It was also advised to them to apply 20-25 kg pottasic fertilizer per acre in vegetable crops. In the early 2010 KVK had conducted FLD on off season vegetable cultivation on cucurbits using polythene tube technique. After seeing the performance of the our FLD in which Uttra & Pratima variety of bottle gourd, Pali & Chaman variety of bitter gourd, Malo & Malini variety of cucumber and Nandini variety of tomato were used.

They had earned around 1.0 lakh rupees money from 1.5 ha of land. Due to early season they got very good price in local market. The group of youth also developed market linkage with wholesalers at Jainamore and Dundibagh of Bokaro district.

KVK scientists also trained them in vermicompost making techniques and link them with ATMA Bokaro which provided them shed for vermicompost production. Now the farmers are producing vermicompost in their backyard and use their compost in vegetable crops.

On the advice of KVK scientists, a small check dam was made on a nala flowing through their village by community participation. ATMA Bokaro provided them pumping set and pipes for irrigation. They also purchased agricultural implements such as power tiller, sprayers, pumping set and pipes etc on subsidy. In the rabi season of 2010 KVK Bokaro conducted FLD on wheat variety K-9107 in 5 ha of land. In which they got average yield of 38 quintal per ha. They also cultivated vegetables such as potato, tomato, brinjal, spinach, carrot etc in rabi 2010 and earned about 50000.00 rupees from the same 1.5 ha of land. In early 2011 they started co-operative farming in 2 ha of land and cultivated bottle gourd (Var- Uttra & Pratima), bitter gourd (var- Pali & Chaman), cucumber (var- Malo & Malini), tomato(var- Nandini) brinjal (var- Swarna Nilima, Swarna Shakti & Sungrow 132) and water melon. They earn about 2.0 lakh

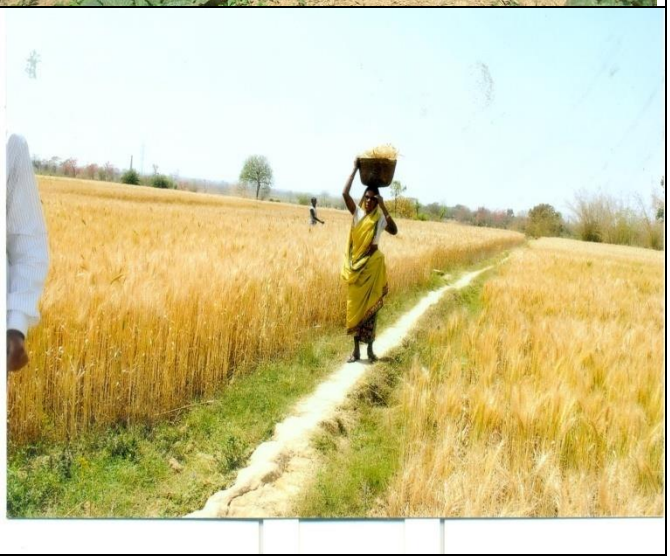
rupees from these crops through co-operative farming. They had also successfully cultivated hybrid rice, maize and pigeon pea during kharif 2011.

Success attracts praise, Deputy Commissioner Amitabh Kaushal visited their field in March 2011 and said it was positive step and in villages livelihood is most effective deterrent against naxalism. The success of these youth groups has widely been published in print and electronic media.

Success also attracts followers, farmers of neighbouring villages like Jhopro are now making enquires with the youth groups. Farmers of nearby villages also started vegetable cultivation in their field seeing the success of the youth groups of Dharampura. Middle aged Mr Manohar Singh quit his job as a daily wage earner at Bokaro Steel City and started growing vegetables.

Thus joint effort of KVK Bokaro, NGO Raj Development Society and youth of Dharampura has brought green revolution in red belt. So youth in maoist hub of Dharampura are defying rebel diktat with unusual weapon vegetables.

Action Photographs of village Dharampura



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COAL BELT SPECIAL

The Telegraph RANCHI TUESDAY 12 APRIL 2011

A green revolution grows in red belt

SHASHANK SHEKHAR

Bokaro, April 11: Youths in the Maoist hub of Dharmapura are defying rebel diktat with an unusual weapon: vegetables.

As unemployed youths in their mid-twenties, they defied Maoists who tried to enlist them. Now, by growing vegetables, they are earning a comfortable amount right under the noses of the rebels.

A core group of 12 earns around Rs 5,000 each day by selling vegetable produce, each member getting an equal share of the proceeds — the success of the green mission in Dharmapura village, about 15km from Bokaro steel city, in Chas block — inspiring others in the district.

In Dharmapura, their 40-decimal plot is now lush with 5,000 saplings of brinjals and tomatoes.

Hunger, rebel fear and lack of opportunities at home had forced youths to migrate to Uttar Pradesh and Madhya Pradesh as labourers.

But a chance meeting with horticulturist Anil Kumar of Bokaro's Krishi Vigyan Kendra in early 2010 turned their lives around.

Inspired by the horticulturist, the youths built check dams to collect wastewater, which they then used to irrigate the arid land.

On doing this, the youths — Gautam Singh, Dileshwar Kumar, Sanjay Prasad, Banshidhar, Mahanand, Gopal and others — said their quality of life had improved unimaginably.

"On Kumar Sir's advice, we made a small check dam and laid pipes connecting the dam to the field," said Gautam.

Horticulturist Anil Kumar (in sunglasses) **with villagers at Dharmapura in Bokaro.** Picture by Pankaj Singh

Krishi Vigyan Kendra programme co-ordinator Udai Kumar Singh was another key resource person. "It was he (Singh) who encouraged us to go for multiple cropping. Farmers here rely on a single paddy crop and that too rain-fed cultivation," said Mahanand.

When the soil became loamy, they planted tomatoes, brinjals, lady's fingers, cucumbers, bottle gourds, bitter gourds, sponge gourds and even watermelons on a large scale.

The outfit supplied seed and fertiliser, and advised the youths on best farming practices. But Kumar disclaims all credit. "It is their achievement alone. We gave ideas, but their hard work reaped rewards," said Kumar.

Side by side, the youths built market linkages with vegetable wholesalers at Jaina More, Dundibagh and other nearby markets.

Success attracts praise. Deputy commissioner Amitabh Kaushal said it was a positive step. "In villages, livelihood is the most effective deterrent against Naxalism."

Success also attracts followers. No wonder youngsters in neighbouring villages like Jhopro are making enquiries. With the youths growing different vegetables on one plot, other farmers are also trying out multiple cropping.

Green leafy vegetables such as spinach and amaranths take a month to grow. Others like tomatoes, brinjals, watermelons, lady's fingers, cucumbers and carrots take more than 60 days. So crops are rotated such that earnings flow in daily.

The green brigade attracts followers for many reasons. Middle-aged Manohar Singh said he quit his job as a daily wage earner at Bokaro steel plant to grow vegetables.

"I can now stay in Dharmapura with my family," he said, his weather-beaten face lighting up.

3.8. Give details of innovative methodology or innovative technology of Transfer of Technology developed and used during the year

3.9 Give details of indigenous technology practiced by the farmers in the KVK operational area which can be considered for technology development (in detail with suitable photographs)

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

3.10 Indicate the specific training need analysis tools/methodology followed for

- Identification of courses for farmers/farm women
- Rural Youth
- In-service personnel

3.11 Field activities

i. Number of villages adopted
ii. No. of farm families selected
iii. No. of survey/PRA conducted

3.12. Activities of Soil and Water Testing Laboratory

Status of establishment of Lab :

1. Year of establishment :
2. List of equipments purchased with amount :

Sl. No	Name of the Equipment	Qty.	Cost
1			
2			
3			
Total			

3. Details of samples analyzed so far :

Details	No. of Samples	No. of Farmers	No. of Villages	Amount realized
Soil Samples				
Water Samples				
Total				

3.13 Activities of rain water harvesting structure and micro irrigation system

No of training programme	No of demonstrations	No of plant material produced	Visit by the farmers	Visit by the officials

3.14 Technology week celebration

Type of activities	No. of activities	Number of participants	Related crop/livestock technology
Inauguration ceremony	1	162	
Technology exhibition visit	1	255	Both
Video show	4	120	Both
Workshop	3	112	Related to crops
Kisan Gosthi	2	98	Both
Field visit	1	190	Both

Presentation of Agricultural Expert System & SMS services	1	62	Both
Conclusion ceremony	1	73	

3.15 RAWE programme

Is KVK is involved?

No of student/ARS trained	No of days stayed

3.16 NICRA Project

Programme implemented	No of village covered	No of beneficiary covered	Amount of fund received	Amount of fund utilized

3.17. List of visitors including the officials of ZPD and DEE

Date	Name of the person	Purpose of visit
	QRT members, Dr. A.K.Singh(ZPD, Zone-II) Dr. R.P. Singh 'Ratan'(DEE, BAU)	**visit for QRT**
108.10.2011	**Dr. M.P. Pandey (Hon'ble VC, BAU)**	**KVK Bokaro visit**
	Sri Arun Kr. Singh (Agril Secrtery Jharkhand Gov.) Sri Anup Kr. (Add. Secretary Govt. of India)	**Second green revolution**

4.0 IMPACT

4.1. Impact of KVK activities (Not to be restricted for reporting period).

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

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

4.2. Cases of large scale adoption (Please furnish detailed information for each case)

4.3 Details of impact analysis of KVK activities carried out during the reporting period

4.5 Details of innovations recorded by the KVK

4.6 Details of entrepreneurship development by the KVK

4.7 Any other initiative taken by the KVK

4.8 Area not covered by the above or constraints or new proposal for XII plan

5.0 LINKAGES

5.1 Functional linkage with different organizations

Name of organization	Nature of linkage
1. DMR (ICAR) New Delhi	conducting training programmes and demonstration
2. DRMR (ICAR) Bharatpur, Rajasthan	Conducting training programmes and demonstration
3. IINRG, Namkum, Ranchi	Participation in meeting, conducting training programme & demonstration programme
4. HARP, Plandu Ranchi	Participation in meeting, conducting training programme & demonstration programme
5. KVKs of Other district	Participation in meeting
6. ATMA Bokaro	Joint diagnostic survey, joint implementation, participation in meeting, conducting training programme & demonstration programme
7. Line Dept. State Govt.	Joint diagnostic survey, joint implementation, participation in meeting, conducting training programme & demonstration programme
8. NABARD/COMMERCIAL BANK	Participation in meeting, conducting training programme
9. R.K. Mission Ranchi	Participation in meeting, conducting training programme & demonstration programme
10. CURRS, HAZARIBAGH	Participation in meeting, conducting training programme & demonstration programme
11. NGO(PRADAN, SHAYOGNI, KALYANI, DHARA ETC)	Joint diagnostic survey, participation in meeting, conducting training programme & demonstration programme

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

5.2 List special programmes undertaken by the KVK, which have been financed by ATMA/ Central Govt/ State Govt./NHM/NFDB/Other Agencies

Name of the programme/scheme	Purpose of programme	Date/ Month of initiation	Funding agency	Amount (Rs. in lakh)
Augmenting mustard production in tribal area	Training, FLD, Exposure visit	Sept. 2011- March 2012	DRMR (ICAR), Bharatpur, Rajasthan	4.92
	SRI monitoring	12.12.2011	ATMA, Bokaro	0.48
	Training	17.12.2011	ATMA, Bokaro	2.45
	Training for farmers	05.12.2011	ATMA, Bokaro	1.20
	Kisan gosthi	05.12.2011	ATMA, Bokaro	0.30
	Organize Kisan mela	13.03.2012	ATMA, Bokaro	4.0
District level Training prog. Under support to state extension reforms	Training programme	07.03.2012	ATMA, Bokaro	6.0

6. PERFORMANCE OF INFRASTRUCTURE IN KVK

6.1 Performance of demonstration units (other than instructional farm)

Sl. No.	Name of demo Unit	Year of estt.	Area	Details of production			Amount (Rs.)		Remarks
				Variety	Produce	Qty.	Cost of inputs	Gross income	

6.2 Performance of instructional farm (Crops)

Name Of the crop	Date of sowing	Date of harvest	Area (ha)	Details of production			Amount (Rs.)		Remarks
				Variety	Type of Produce	Qty.	Cost of inputs	Gross income	
Cereals									
Paddy									
	July 2011	Dec 2011	2.0	MTU- 7029	F/S	70.0			
	July 2011	Nov. 2011	2.0	Lalat	F/S	60.0			
	July 2011	Nov. 2011	1.0	Abhisekh	F/S	25.0			
Pulses									
	26 June 2011	Jan. 2012	0.5	Birsa Arhar - 1	F/S	2.0			
Oilseeds									
Niger	4 Oct. 2011	20th Dec. 2011	0.2	Puja	F/S	0.5			
Mustard	Oct. 2011	Feb. 2012	0.4	Shivani	F/S	1.0			
Toria	Sept. 2011	Dec. 2011	0.2	PT-303	F/S	0.4			
Fibers									
Spices & Plantation crops									
Turmeric	June- 2011	March 2012	0.2	Rajendra Sonia	T/L	4.0			
Floriculture									
Fruits									
Vegetables									
Others (specify)									
Dhaincha	June 2011	Nov. 2011		Asam Local	T/L	2.0			

6.3 Performance of Production Units (bio-agents / bio pesticides/ bio fertilizers etc.,)

Sl. No.	Name of the Product	Qty	Amount (Rs.)		Remarks
			Cost of inputs	Gross income	

6.4 Performance of instructional farm (livestock and fisheries production)

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

6.5 Utilization of hostel facilities

Accommodation available (No. of beds)

Months	No. of trainees stayed	Trainee days (days stayed)	Reason for short fall (if any)
April 2011			
February 2012	210	21	
March 2012	60	10	

(For whole of the year)

6.5 Utilization of staff quarters

Whether staff quarters has been completed: Not completed till date
No. of staff quarters:
Date of completion:
Occupancy details:

Months	Q I	QII	Q III	QIV	Q V	QVI
April 2011						
March 2012						

7. FINANCIAL PERFORMANCE

7.1 Details of KVK Bank accounts

Bank account	Name of the bank	Location	Account Number
With Host Institute			

With KVK			

7.2 Utilization of funds under FLD on Oilseed *(Rs. In Lakhs)*

Item	Released by ICAR		Expenditure		Unspent balance as on 1st April 2012
	Kharif 2011	Rabi 2011 -12	Kharif 2011	Rabi 2011-12	
Inputs					
Extension activities					
TA/DA/POL etc.					
TOTAL					

7.3 Utilization of funds under FLD on Pulses *(Rs. In Lakhs)*

Item	Released by ICAR		Expenditure		Unspent balance as on 1st April 2012
	Kharif	Rabi	Kharif	Rabi	
Inputs					
Extension activities					
TA/DA/POL etc.					
TOTAL					

7.4 Utilization of funds under FLD on Cotton *(Rs. In Lakh)*

Item	Released by ICAR		Expenditure		Unspent balance as on 1st April 2012
	Kharif	Rabi	Kharif	Rabi	
Inputs					
Extension activities					
TA/DA/POL etc.					
TOTAL					

7.5 Utilization of KVK funds during the year 2011 - 12

S. No.	Particulars	Sanctioned	Released	Expenditure
A. Recurring Contingencies				
1	**Pay & Allowances**	77.42		43.0
2	**Traveling allowances**	00.50		00.50
3	**Contingencies**			
A	Stationery, telephone, postage and other expenditure on office running, publication of Newsletter and library maintenance (Purchase of News Paper & Magazines)			
B	POL, repair of vehicles, tractor and equipments	03.07		
C	Meals/refreshment for trainees (ceiling upto Rs.40/day/trainee be maintained)			
D	Training material (posters, charts, demonstration material including chemicals etc. required for conducting the training)	02.58		
E	Frontline demonstration except oilseeds and pulses (minimum of 30 demonstration in a year)	00.60		
F	On farm testing (on need based, location specific and newly generated information in the major production systems of the area)	00.75		
G	Training of extension functionaries			
H	Maintenance of buildings			
I	Establishment of Soil, Plant & Water Testing Laboratory			
J	Library			
TOTAL (A)		**84.92**		

B. Non-Recurring Contingencies				
1	**Works**	10.00		
2	**Equipments including SWTL & Furniture**	10.00		
3	**Vehicle** (Four wheeler/Two wheeler, please specify)			
4	**Library** (Purchase of assets like books & journals)	00.50		00.50
TOTAL (B)		**20.05**		
C. REVOLVING FUND				
GRAND TOTAL (A+B+C)		**104.97**		

7.5 Status of revolving fund (Rs. in lakh) for last three years

Year	Opening balance as on 1st April	Income during the year	Expenditure during the year	Net balance in hand as on 1st April of each year (Kind + cash)
April 2009 to March 2010	0.93195	2.23102	1.30100	1.86197
April 2010 to March 2011	1.86197	1.90399	1.35895	2.40701
April 2011 to March 2012	2.40701	1.05665	2.19161	1.27205

7.6 Any other significant achievements (provide full details with action photograph)

7.7 Number of SHGs formed by KVKs/associated with SHGs formed by other organizations indicating the area of SHG activities.

7.8 Details of marketing and financial opportunity created for the SHGs

7.9 Special programme on Food and Nutrition :

i) On farm trials conducted on food and nutrition:

Title, results, no. of beneficiaries and other information.

ii) FLD conducted on food and nutrition

Title, results, no. of beneficiaries and other information

iii) Awareness programme conducted on food and nutrition for Anganwadi workers and others

iv) Total Anganwadi workers trained indicating area of training:

v) Number of exhibition, fair, workshops organized on food and nutrition:

7.10 Community Radio Station :

i) Date of start of Community Radio Station
ii) Details of programme aired through Community Radio Station and frequency of such programme

iii) Whether any proposal is pending for establishment of CRS at KVK, if yes, date of submission of proposal

7.11 KMAS Service

Mobile Advisory								
No. of calls	No. of farmers covered	No. of messages	Type of messages					
			Crop (no.)	Livestock	Weather	Marketing	Awareness	Other
								enterprise

7.12 Performance of Automatic Weather Station/ Weather Station in KVK

i) Parameters are being recorded
ii) Advisory service based on weather data being provided to
  a) Number of farmers
  b) Departments with name and number
  c) Other agency with name and number

7.13 Joint activity carried out with line departments and ATMA

Name of activity	Season	With line department	With ATMA	Both
Second green revolution	**Kharif**		With ATMA	
Per motion of SRI	**Kharif**	With line department		
Technology week celebration	**Rabi**		With ATMA	
Kharif & rabi workshop	**Kharif & rabi**		With ATMA	
Kisan Mela	**Rabi**		With ATMA	
Training of Krishak mitras & BTM	**Rabi**		With ATMA	
Kisan goshti	**Kharif & rabi**		With ATMA	

Annexure 2011-12

Clientele	Title of the training programme	Duration in days	Venue (Off / On Campus)	Number of participants OTH			Number of SC			Number of ST			Total		Grand Total
				M	F	T	M	F	T	M	F	T	M	F	
Cropping system	Cultivation practice of maize based intercropping system	1	Off	10	-	10	-	-	-	-	-	-	10	-	10
Nursery raising(H)	Nursery raising under adverse weather condition	2	Off	17	-	17	-	-	-	-	-	-	17	-	17
IPM	Control of stem borer in maize	3	Off	10	-	10	-	-	-	-	-	-	10	-	10
INM	Integrated nutrient management in Maize	4	Off	15	-	15	-	-	-	-	-	-	15	-	15
Soil and water testing	Method of soil sampling	5	Off	26	--	26	-	-	-	8	-	8	34	-	34
Nursery management(cp)	Nursery management in paddy	6	Off	19	-	19	-	-	-	-	-	-	19	-	19
Production and management technology	Cultivation practice of ginger and galic	7	Off	26		26		-	-	-	5	-	5		31
Management of problematic soil	Use of lime in acid soil	8	Off	21	-	21	-	-	-	11	-	11	32	-	32
Diseases management	Diseases and feed management in goat	9	Off	29	-	29	-	-	-	-	-	-	29	-	29
ICM	SRI Technology	10	Off	27	-	27	-	-	-	6	-	6	33	-	33
ICM	Cultivation practice of hybrid Paddy	11	Off	30	-	30	-	-	-	-	-	-	30	-	30
ICM	Cultivation practice of Kharif pulses	12	Off	19	-	19	-	-	-	4	-	4	23	-	23
INM	Nutrient management in paddy	13	Off	27	-	27	-	-	-	-	-	-	27	-	27
Nursery raising(H	Nursery raising under adverse weather condition	14	Off	17	-	17	10	-	10	-	-	-	27	-	27
Soil and water conservation	Low water harvesting technique	15	Off	23	-	23	8	-	8	-	-	-	31	-	31
ICM	Production technology of pulse	16	Off	30	-	30	-	-	-	-	-	-	30	-	30
IDM	Integrated disease management of pulse	17	Off	30	-	30	-	-	-	5	-	5	35	-	35
Repair and	Care and maintenance of and	18	Off	30	-	30	-	-	-	-	-	-	30	-	30

maintenance of farm machinery If any	operation of paddy transplanter														
If any (blue green algae)	Benefit and uses of rhizobium culture in pulses crops	19	Off	26	-	26	-	-	-	-	-	-	26	-	26
Cropping system	Para cropping of oilseeds and pulses	20	Off	30	-	30	-	-	-	-	-	-	30	-	30
INM	Phosphate management in pulses and oilseeds crop	21	Off	28	-	28	-	-	-	3	-	3	31	-	31
IDM	Production technique of disease free seedling of vegetable	22	Off	27	-	27	-	-	-	10	-	10	37	-	37
IPM	Integrated pest management in paddy	23	Off	28	-	28	-	-	-	-	-	-	28	-	28
ICM	Production technology of rabi oilseeds crops	24	Off	32	-	32	-	-	-	-	-	-	32	-	32
Micronutrient deficincy	Control of different micro nutrient disorders in vegetable crops	25	Off	30	-	30	-	-	-	-	-	-	30	-	30
Soil and water conservation	Rain water harvesting technique	26	Off	35	-	35	-	-	-	-	-	-	35	-	35
IPM	Integrated pest management of kharif pulses	27	Off	29	-	29	-	-	-	-	-	-	29	-	29
IPM	Pest management in oilseeds crop	28	Off	32	-	32	2	-	2	-	-	-	34	-	34
Tuber crops	Cultivation practice of potato	29	Off	36	-	36	-	-	-	-	-	-	36	-	36
Off-season vegetable	Cultivation practice for leguminaceae vegetable	30	Off	38	-	38	4	-	4	-	-	-	42	-	42
Micronutrient deficincy	Micronutrient deficiency in vegetable	31	Off	34	-	34	4	-	4	-	-	-	38	-	38
ICM	Cultivation practice of wheat managment	32	Off	38	-	38	-	-	-	-	-	-	38	-	38
Repair and maintenance of farm machinery If any	Importance of zero tillage machine	33	Off	33	-	33	-	-	-	-	-	-	33	-	33
Tuber crops	Production technology of wheat	34	Off	30	-	30	7	-	7	-	-	-	37	-	37
Diseases management	Diseases and feed management in goat	35	Off	32	-	32	-	-	-	-	-	-	32	-	32
INM	Irrigation schedule and fertilizer	36	Off	43	-	43	-	-	-	-	-	-	43	-	43

	management in wheat														
INM	Pest and disease management in wheat		Off	-	-	-	34	-	34	-	-	-	34	-	34
ICM	Water management in wheat		Off	30	-	30	-	-	-	5	-	5	35	-	35
PHT	post harvest techniques of potato for increasing self life		Off	31	-	31	-	-	-	6	-	6	37	-	37
PHT	Post harvest management of paddy seeds		Off	34	-	34	-	-	-	-	-	-	34	-	34
ICM	Cultivation practice of cucurbit		Off	32	-	32	-	-	-	-	-	-	32	-	32
IDM	Integrated disease management in cucurbits		Off	38	-	38	-	-	-	-	-	-	38	-	38
Nursery raising	Nursery raising in adverse weather condition		Off	31	-	31	-	-	-	-	-	-	31	-	31
ICM	Intercropping in vegetable		Off	34	-	34	5	-	5	-	-	-	39	-	39
ICM	Practice and management of fruit vegetable		Off	20	-	20	-	-	-	10	-	10	30	-	30
PHT	Grading and storage of potato		Off	**24**	**-**	**24**	**-**	**-**	**-**	**6**	**-**	**6**	**30**	**-**	**30**
Soil and moisture conservation	Soil and moisture conservation technique		Off	**29**	**-**	**29**	-	-	-	-	-	-	**29**	-	**29**
Use of plastic	**Use of plastic in agriculture**		Off	**20**	**-**	**20**	**5**	**-**	**5**	**8**	**-**	**8**	**33**	**-**	**33**
Irrigation system	**Use of drip irrigation in vegetable**		Off	**6**	**-**	**6**	**6**	**-**	**6**	**24**	**-**	**24**	**36**	**-**	**36**
Management in problematic soils	**Management in problematic soils**		Off	**30**	**-**	**30**	**-**	**-**	**-**	**-**	**-**	**-**	**30**	**-**	**30**
	Total			**1346**		**1346**	**85**	**-**	**85**	**106**	**5**	**111**	**1537**	**5**	**1542**

Annexture2011-2012

Clientele	Title of the training programme	Duration in days	Venue (Off / On Campus)	Number of participants OTH			Number of SC			Number of ST			Total		Grand Total
				M	F	T	M	F	T	M	F	T	M	F	
ICM	Cultivation practice of maize and their use of fertilizers and management	3	On	25	-	25	-	--	-	5	-	5	30	-	30
ICM	Use and method of SRI Technologies	2	On	17	-	17	1	-	1	12	--	12	30	-	30
Nursery Raising	Nureseary Management in vegetable	3	On	23	--	23	-	-	-	2	-	2	25	-	25
Installation and maintenance of micro irrigation systemI	Use and their of drip irrigation in vegetable crops	2	On	23	-	23	-	-	-	2	-	2	25	-	25
ICM	Use and Method of SRI Technology	2	On	21	-	21	-	-	-	8	-	8	29	-	29
Off-Season vegetable	Cultivation practice of fruit vegetable and pest managment	3	On	26	-	26	-	-	-	3	-	3	29	-	29
IPM	IDM in rice and fruit vegetable	2	On	16	2	18	-	-	-	11	-	11	27	2	29
INM	Management of phosphatic fertilizers for pulses and role of different nutrient for crop production	2	On	7	2	9	-	-	-	13	-	13	20	2	22
/Soil and water conservation women	Rain water management and low cost soil and water conservation measure	2	On	14	-	14	3	-	3	9	-	9	26	-	26
IDM	IDM in paddy and vegetable crops	3	On	19	-	19	-	-	-	10	-	10	29	-	29
INM	Sulphur management in oilseed	2	On	13	-	13	3	-	3	12	-	12	28	-	28

	crops														
IDM	Diseases management in pulse crops and oilseeds crop	2	On	7	3	10	-	-	-	16	-	16	23	3	26
IPM	Integrated pest & disease management in pulses & oilseed crops	2	On	19	-	19	-	-	-	9	-	9	28	-	28
Exotic vegetable	Cultivation practice and management of Broccoli and red cabbage.	2	On	16	-	16	3	-	3	8	-	8	27	-	27
INM	Integrated nutrient management modules of some important vegetable crops	2	On	24	--	24	1	-	1	-	-	-	25	-	25
Cropping System	Inter-cropping system rabi season	2	On	12	-	12	-	-	-	15	-	15	27	-	27
INM	Integrated nutrient management in wheat crop	2	On	17	-	17	-	-	-	7	-	-	24	-	24
IDM	Integrated disease management in oilseed crops	2	On	14	-	14	-	-	-	7	-	7	21	-	21
Off-season vegetable	Cultivation practice OF Summer vegetable	2	On	-	-	-	-	-	-	24	-	24	24	-	24
IDM	Importance of seed treatment of vegetable and cereal crops	2	On	26	-	26	-	-	-	1	-	1	27	-	27
Micronutrient deficiency in crops	Role of micronutrient in vegetable crops	2	On	19	-	19	8	-	8	-	-	-	27	-	27
Mushroom production	Mushroom production	2	On	29	-	29	-	-	-	-	-	-	29	-	29
ICM	Cultivation practice on summer maize	2	On	26	-	26	-	-	-	--	-	-	26	-	26
PHT	Grading and storage of potato	2	On	28	-	28	-	-	-	-	-	-	28	-	28
Soil and water conservation women	Importance and method of mulching	2	On	21	-	21	2	-	2	5	-	5	28	-	28

Value addition	Primary processing of locally available vegetable	2	On	30	-	30	-	-	-	-	-	-	30	-	30
Production and use of organic inputs	Production of vermicompost	2	On	29	-	29	-	-	-	-	-	-	29	-	29
Soil and water conservation women	Irrigation schedule in cucurbit and diseases management	2	On	28	-	28	-	-	-	-	-	-	28	-	28
Spices t	Production technology of ginger and termeric	2	On	29	-	29	-	-	-	-	-	--	29	-	29
Total				**578**	**7**	**585**	**21**		**21**	**179**		**172**	**778**	**7**	**785**

Rural Youth

Clientele	**Title of the training programme**	**Duration in days**	**Venue (Off / On Campus)**	**Number of participants OTH**			**Number of SC**			**Number of ST**			**Total**		**Grand Total**
				M	**F**	**T**	**M**	**F**	**T**	**M**	**F**	**T**	**M**	**F**	
Rural Youth	seed production of paddy		On	20	-	20	-	-	-	5	-	-	25	-	25
Rural Youth	Vermi compost production		On	16	-	16	2	-	2	6	-	6	24	-	24
Rural Youth	Diseases and feed management in pig and goat		On	-	-	-	-	-	-	18	-	18	18	-	18
Rural Youth	Care and maintenance of diesel engine and pump set		On	23	-	23	1	-	1	1	-	1	25	-	25
Rural Youth	Mushroom Production		On	25	-	25	-	-	-	-	-	-	25	-	25
Rural Youth	Planting material production														
Rural Youth	Vermi compost production		**on**	**28**	**-**	**28**	**-**	**-**	**-**	**-**	**-**	**-**	**28**	**-**	**28**
Rural Youth	Repair & maintenance of diesel pump set		**on**	**19**	**-**	**19**	**-**	**-**	**-**	**-**	**-**	**-**	**19**	**-**	**19**
Rural Youth	Primary processing of locally available vegetable		**on**	**30**	**-**	**30**	**-**	**-**	**-**	**-**	**-**	**-**	**30**	**-**	**30**
Rural Youth	Diseases and feed management in pig and goat		**on**	**30**	**-**	**30**	**-**	**-**	**-**	**-**	**-**	**-**	**30**	**-**	**30**
	Total			**191**		**191**	**3**		**3**	**30**		**25**	**224**		**224**

Extension Functionary

Clientele	Title of the training programme	Duration in days	Venue (Off / On Campus)	Number of participants OTH			Number of SC			Number of ST			Total		Grand Total
				M	F	T	M	F	T	M	F	T	M	F	
Extension Functionary	Vegetable cultivation in kharif season	1	On	22	-	22	-	-	-	-	-	-	22	-	22
Extension Functionary	Installation and maintenance of drip irrigation		On	24	-	24	1	-	1	-	-	-	25	-	25
Extension Functionary	Production technology of oilseed and pulses	1	On	21	-	21	4	-	4	-	-	-	25	-	25
Extension Functionary	Cultivation practices of rabi crops	1	On	23	-	23	-	-	-	1	-	1	24	-	24
Extension Functionary	Integrated farming system	2	On	8	-	8	7	-	7	6	-	6	21	-	21
Extension Functionary	Advance in nutrient management in acid soils	2	On	8	-	8	7	-	7	12	-	12	27	-	27
Extension Functionary	Management practices of vegetable crops	8		162	5	167	24	-	24	38	-	38	224	5	229
Extension Functionary	Use and their of drip irrigation in vegetable crops	1	on	20	-	20	-	-	-	12	-	12	32	-	32
Extension Functionary	Low cost water harvesting system	1	on	23	-	23	-	-	-	-	-	-	23	-	23
Total				**311**	**5**	**316**	**43**		**43**	**69**		**31**	**423**	**5**	**428**

CONTENT