Annual Report

2006-07

RAJENDRA AGRICULTURAL UNIVERSITY, BIHAR
PUSA (SAMASTIPUR) 848125

CONTENT

RAJENDRA AGRICULTURAL UNIVERSITY
Pusa (Samastipur)

Dr. M. L. Choudhary
Vice Chancellor

FOREWORD

Rajendra Agricultural University is the only agricultural university of the state playing multidimensional role in the field of education, scientific research and extension of need based technologies to a farming community. Concerted efforts are being made by the scientists of this university to accelerate the agricultural development of the state. In addition to these, university is also working in joint collaboration with several national and international organizations to solve the problem of poor/weaker section of the state. The overall enhancement, in the field of research, teaching, extension and other allied sectors by RAU during 2006-07, has been systematically summarized in the form of Annual Report. The information contained in this manuscript would help in creating awareness among the scientists, students, farmers and extension personnel about latest crop varieties, implementable and viable production and protection technologies.

I feel happy in presenting the publication of the University highlighting the educational, research and extension achievements as well as the financial and developmental progress. A number of educational key events, research and extension achievements have taken place during the year 2006-07 which contributed towards the viable agricultural growth of Bihar state.

I would like to congratulate the entire group of scientists and the teachers for carrying out the various activities under multidisciplinary programme as per plan and bringing out results in a comprehensive manner as presented in this write up.

I would like to thank all the Directors, Deans of the Faculties, Associate Deans of the Colleges, Statutory Officers, Chairman of Departments, Programme Co-ordinatiors KVKs , Officer In- charge and members of Technical Cell for compiling and editing this report in a comprehensive manner. Though, every effort has been made to keep the report error free, yet comments and valuable suggestions are solicited for further improvement.

(M.L.Choudhary)

INTRODUCTION

1.1 Background Information

Pusa has a great historical importance. The seed of agriculture research and education was sown here, about a century ago, when the then Viceroy and Governor General of Imperial British India had laid the foundation stone of the proposed Agriculture Research Institute on April 1, 1905. The grand edifice name of the building, 'Phipps Laboratory' came up during 1907 which was named after its donor, Mr. Henry Phipps. The institute was renamed as "Imperial Agricultural Research Institute" (IARI) in 1919. It was shifted to New Delhi in 1936 on account of extensive damage to the Phipps Laboratory due to the devastating earthquake of 1934. Pusa is also credited to have first Sugarcane Research Institute, which was established in 1936 and is serving the country even today. Other campus of the university, Agricultural College at Sabour, Bhagalpur was established on 17th August 1908 by Sir Andrew Henderson Leith Freizer, the then Governor of Bihar, Bengal and Orissa. Veterinary College at Pusa was established on 2nd April, 1927. When the need of an Agriculture College was felt in North Bihar the State Government decided to have it at Dholi (Muzaffarpur), a place in the vicinity of Pusa and it was established in 1960. The college was named as 'Tirhut College of Agriculture'. Rajendra Agricultural University, established in December 3, 1970 by reorganizing three Agricultural Colleges at Sabour, Kanke and Dholi, two Veterinary Colleges at Ranchi and Patna, four Regional Agricultural Research Institutes located at Patna, Dholi, Sabour and Kanke and Sugarcane Research Institute, Pusa, the birthplace of agricultural research and education and has played a significant role in enlightenment of people concerned with agriculture.

Later, the University established one college each of Basic Sciences & Humanities, Dairy Technology, Agricultural Engineering, Home Science and Fisheries. The main Administrative Complex, the University Library, the Faculty of Agricultural Engineering, Faculty of Basic Science & Humanities, Faculty of Home Science, Post Graduate Departments of the Faculty of Agriculture, Dairy Farm of the University, Sugarcane Research Institute, University Apiary, Sanchar Kendra, and University Guest House are located at Pusa. The College of Dairy Technology and Bihar Veterinary College are located at Patna and College of Fisheries at Dholi. The Seed Production and Processing Unit of the university is located at Dholi which plays a pivotal role in production of quality seeds for the state.

Subsequently, the University under National Agricultural Research Project established a few research stations, sub-stations, farm science centres, operational research projects and such other wide ranging programmes for the benefit of the rural community. Now, Bihar has the privilege to have one KVK in each district.

1.2 Mandate of the University

- To impart education in different branches of agriculture and allied fields
- To undertake basic, strategic and applied research for developing technologies to enhance productivity and quality of agricultural and animal produce.
- To disseminate scientific information to farmers.
- To plan, organize and conduct *on campus* and *off campus* training programs for different functionaries and clientele in order to develop human resource capability in the field of agriculture.
- To help the state government in supplying breeder seeds towards production and multiplication of foundation and certified seeds.
- To provide consultancy services and expertise in the agricultural research and development to the industries, NGOs and others.
- To serve as a repository of national and international scientific information on various aspects of agricultural and animal production.
- To collaborate with relevant national and international agencies for all round development of agriculture in the state.

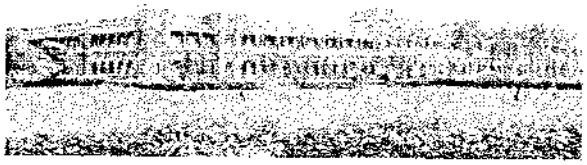
1.3 Faculties of the University

- Faculty of Agriculture
- Faculty of Veterinary and Animal Science
- Faculty of Agriculture Engineering
- Faculty of Basic Sciences & Humanities.
- Faculty of Home Science
- Faculty of Post Graduate Studies

1.4 Constituent Units of the University

Bihar Agricultural College, Sabour

Bihar Agricultural College, Sabour is one of the six Agricultural Colleges in India established during 1906 to 1910 and has been a premier Institution of agricultural education and research in the country. It was established on 17th Aug.1908.



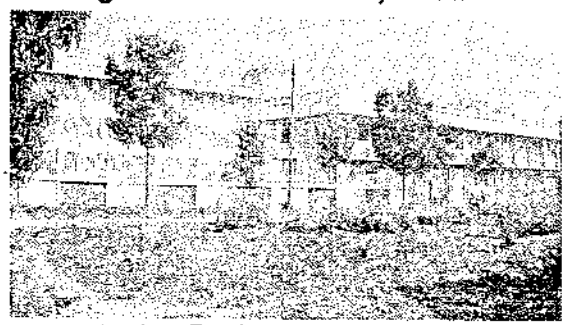
Tirhut College of Agriculture, Dholi

Tirhut College of Agriculture, Dholi was founded on 18th August, 1960 by first chief minister of Bihar Late Dr. Srikrishna Singh. More than four decades have passed after the establishment of the College and during this period notable successes have been achieved in the field of teaching, research and extension.

Bihar Veterinary College, Patna

The Bihar Veterinary College, Patna, one of the four pioneer and the oldest veterinary colleges in undivided India was established on 2nd April, 1927. Institution has actively been involved in development of veterinary and animal husbandry through teaching, research and extension.

College of Home Science, Pusa



The college of Home Science was established in the year 1982 at Pusa with major objectives to foster the growth, development and well being of individuals, families and communities. The College of Home Science stands for academic excellence, where young women are equipped to meet successfully the challenges of the family and get opportunity. Besides this, the college has also started vocational courses for 6 months duration in different areas of Home Science

College of Agricultural Engineering, Pusa

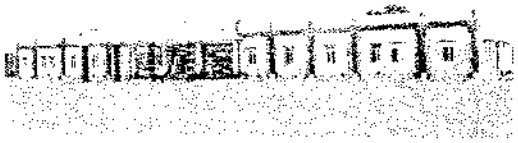
This college is located at Pusa and was established on 7th December 1983 with the objectives to impart good quality teaching to students for the B.Tech and M.Tech degrees, to conduct basic and applied researches in all the aspects of Agricultural Engineering, to develop suitable technologies for farmers, entrepreneurs, industrialists.

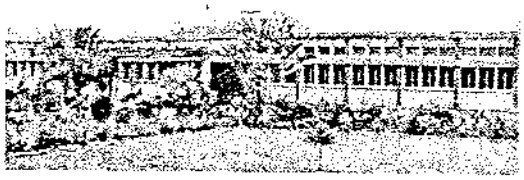
Faculty of Basic Sciences & Humanities, Pusa

Faculty of Basic Sciences and Humanities was establishment in Rajendra Agricultural University, Pusa in November 1981 with the objective to strengthen the teaching and research programme in different disciplines of basic sciences so that it can act as a strong supporting programme for the other faculties

College of Fisheries, Dholi

The college of fisheries was established on 13th January 1987 at Dholi, Muzaffarpur. This college is creating trained human resource to develop the great potentiality of the fisheries sector in Bihar.





Sanjay Gandhi Institute of Dairy Technology, Patna

The Sanjay Gandhi Institute of Dairy Technology was established on 14th December 1980 at Patna for creating human resource in the field of Dairy Technology. The practical aspects of the teaching programme are supported by well equipped laboratories on various aspects of dairy science and technology.

1.5 Degree Programmes of the University

- Undergraduate programmes in the fields of Agriculture, Veterinary Sciences, Home Science, Fisheries, Agricultural Engineering and Dairy Technology.

Degree	Intake capacity
B. Sc. (Ag.)	200
B.Sc. Horticulture	25
B. V. Sc. and A. H.	120
B. Sc. (H. Sc.)	50
B. Tech. (Ag. Engg.)	50
B.Tech. (D.T.)	50
B. F. Sc.	50

- **Post Graduate programme** in 33 fields of specialization with a total intake capacity of 304 students.

Disciplines	Intake capacity
Agriculture	174
Agricultural Engineering	17
Basic Science & Humanities	10
Home Science	12
Veterinary & Animal Science	82

- **Ph.D. programmes** in 17 departments with a total intake capacity of 73 students.

Departments	Intake Capacity
Agronomy	8
Plant Breeding	8
Soil Science	8
Plant Pathology	6
Entomology	5
Agricultural Economics	3
Extension Education	3
Horticulture (Pomology)	3
Horticulture (Olericulture)	3
Plant Physiology	3
Genetics	3
Veterinary Anatomy & Histology	3
Veterinary Microbiology	5
Veterinary Parasitology	3
Animal .Breeding & Genetics	3
Veterinary Pharmacology	3
Veterinary Medicine	3

SALIENT ACHIEVEMENTS

2.1 Education

2.1.1 Undergraduate programme

2.1.1.1 Number of students admitted

College	Degree programme	Male	Female	Total
B.A.C., Sabour, Bhagalpur	B.Sc.(Ag.)	66	21	87
B.V.C., Patna	B.V.Sc. & A.H.	94	16	110
CAE, Pusa	B.Tech. (AE)	45	06	51
College of fisheries, Dholi	B.F.Sc.	36	09	45
College of Home Science, Pusa	B.Sc.(H.Sc.)	-	03	03
FBS & Humanities, Pusa	B.Tech. (Biotech.)	08	06	14
M.B.A.C., Agwanpur	B.Sc.(Ag.)	08	08	16
SGIDT, Patna	B.Tech. (DT)	41	08	49
T.C.A., Dholi	B.Sc.(Ag.)	86	29	109
Total		**187**	**106**	**484**

2.1.1.2 Number of students on roll semester wise

Colleges	**Semester**											
	I		**III**		**V**		**VII**		**IX**		**XI**	
	M	F	M	F	M	F	M	F	M	F	M	F
BAC, Sabour	66	21	21	08	19	05	24	08	04	03	0	01
BVC, Patna	94	16	30	06	23	06	22	03	26	52	0	0
CAE, Pusa	45	06	09	04	13	01	13	02	01	0	0	0
COF, Dholi	36	09	07	02	03	0	04	0	01	0	0	0
College of .Home Science, Pusa.	00	03	0	01	0	01	0	0	0	0	0	0
FBS&H, Pusa	09	06	08	05	08	05	0	0	0	0	0	0
MBAC, Saharsa	08	0	08	0	07	0	0	0	0	0	0	0
SGIDT, Patna	41	08	11	0	12	00	15	0	04	0	01	0
TCA,Dholi	80	29	27	14	17	08	24	05	07	0	0	01
Total	**379**	**98**	**121**	**40**	**102**	**26**	**102**	**18**	**43**	**55**	**01**	**02**

2.1.1.3 Number of students passed out

COLLEGE	MALE	FEMALE	TOTAL
B.A.C., Sabour, Bhagalpur	20	01	21
B.V.C., Patna	52	06	58
CAE, Pusa	01	04	05
College of Fisheries, Dholi (Muzaffarpur)	04	01	05
College of Home Science, Pusa	00	04	04
SGIDT, Patna	08	02	10
T.C.A., Dholi (Muzaffarpur)	11	08	19
TOTAL	96	26	122

2.1.2 POST GRADUATE PROGRAMME

2.1.2.1 Number of students admitted

Department	Master's Degree	Ph.D. Degree
A.R.G.O.	02	01
Animal Breeding and Genetics	01	-
Animal Nutrition	01	-
Extension Education	01	-
MBA (Agri. Business Management	21	-
Plant Pathology	02	02
Veterinary Medicine	02	-
Veterinary Parasitology	01	01
Veterinary Public Health	01	-
TOTAL	**32**	**04**

2.1.2.2 Number of students on roll

Name of Department	Master's Degree	Ph.D. Degree
A.G.R.O.	06	-
Agronomy	-	03
Animal Breeding and Genetics	03	-
Animal Nutrition	03	-
Botany & plant Physiology	-	01
Extension Education	01	02
Food and Nutrition	01	-
Genetics	01	01
Horticulture (Pomology)	-	01
Livestock Product Technology.	03	-
Livestock Production Management	02	-
MBA (Agri. Business Management)	18	-
Plant Breeding	-	03
Plant Pathology	08	09
Post Harvest Technology	01	-
Soil Science	-	03
Veterinary Medicine	08	-
Veterinary Parasitology	05	-
Veterinary Physiology	03	-
Veterinary Public Health	02	-
TOTAL	**59**	**17**

2.1.2.3 Number of students passed out

Discipline	Master's Degree	Ph.D. Degree
Agricultural Economics	01	-
Agronomy	06	02
Animal Breeding & Genetics	03	-
ARGO	02	
Entomology	00	02
Extension Education	01	01
Genetics	01	-
Horticulture (Pomology)	03	01
Livestock Production Management	02	-
Livestock Products Technology	02	-
Plant Breeding	04	01
Plant Pathology	04	01
Seed Technology	01	-
Soil Science	01	03
Veterinary Microbiology	01	-
Veterinary Parasitology	01	-
Veterinary Physiology	04	-
Veterinary Pharmacology & Toxicology	01	
Veterinary Public Health	01	-
TOTAL	**39**	**11**

2.1.3 Thesis accepted
2.1.3.1 Ph.D.

S. No.	Name of the Student	Name of the Advisor	Title of the Thesis
	Soil Science, Pusa		
1.	Mrs. Nikhat Yasmin Azmi	Dr. J. Prasad,	Long term effect of fertilizers and organics on transformation and distribution of nitrogen and carbon sequestration.
2.	Mr. Sunil Kumar	Dr. A.P. Singh	Influence of green manuring on chemistry of native zinc in calcareous soil under Rice-Wheat System
3.	Mr. Ajit Kr. pandey	Dr. S.N. Prasad	Characterization of soils of Chandan river system (watershed)
4.	Mr. Sunil Kumar	Dr. A.P. Singh	Influence of green manuring on chemistry of native zinc in calcareous soil under Rice-Wheat System
	Agronomy		
6.	Virendra Kr. Gupta	Dr. V.P. Singh	Response of seed cane to levels and time of nitrogen and potassium application
7.	Navnit Kumar	Dr. V.P. Singh	Effect of Phosphorus and sulphur nutrition on yield and quality of sugarcane (*Saccharum officinarum* L.)
	Entomology		
8.	L. Tigga	Dr. I. P. Singh	Management of Major insect pests Of cauliflower in Ranchi
9.	Srikant	Dr. S. C. Gupta	Sustainable management of Melon fruit

S. No.	Name of the Student	Name of the Advisor	Title of the Thesis
			fly, Batocera Cucurbitee in summer bitter guard, mordica charuntia L.
	Extention Education		
10.	Raj Kumar	Dr. K.K. Sinha	Differential Impact of FLD on adoption behaviour of Rabi pulse production technology
11.	Ashok Kumar	Dr. A.K. Singh	Effectiveness of training among bee keepers for enhancing honey production–A study in Bihar
	Hort (Oler.)		
12.	Sri H.K. Chourasia	Dr. G. Mandal	Genotype x Environment Interaction studies in Brinjal
13.	Sri Mahesh Kumar	Dr. D.N. Choudhary	Studies on the effect of different levels of fertilizers and plant densities on growth, yield and quality of hybrid and synthetic cauliflower
	Hort. (Pomo)		
14.	Sri Barun	Dr. Rajesh Kumar	Effect of Paclobutrazol, Potassium Nitrate and Urea on bearing of Mango
15.	Sri Priya Ranjan	Dr. U. S. Jaiswal	Effect of Pre and Post harvest application of various chemicals on shelf life of Guava fruit(Psidium guajava L.) variety Allahabad Safeda
16.	Sri Manoj Kumar	Dr.U.S.Jaiswal	Effect of different chemical on shelf life of Mango cv. Langra
	Plant Pathology		
17.	Ms.Annapurna Kumari	Dr. M.M.Jha	Integrated Management of Maydis Leaf Blight of maize

2.1.3.2 M.Sc./ Msc(Ag)/ M.V.Sc./ M.Tech./ M.Sc.(Home Science)

S. No.	Name of the Student	Name of the Advisor	Title of the Thesis
	Soil Science		
1.	Mr. Vinay Kumar	Dr. Mukesh Kumar	Mulching in relation to phosphorous nutrition in planted sugarcane
	Agronomy		
2.	Manoj Kumar	Dr. I.B. Pandey	Effect of sowing dates on growth and yield of newly released wheat varieties under irrigated condition of North Bihar.
3.	Pankaj Kumar	Dr. Vinod Kumar	Response of fine aromatic rice (*Oryza sativa* L.) to moisture regimes and NPK levels.
4.	Manohar Kumar	Dr. N.K. Choudhary	Effect of methods of sowing and levels of fertilizer on growth, yield and quality of wheat.
5.	Sri Rajan Kumar	Dr. D.K. Dwivedi	Response of aromatic rice (*Oryza sativa*) varieties of organic source of nutrients.
6.	Rakesh Kr. Ranjan	Dr. V. Kumar	Response of summer maize (*Zea mays* L.) to irrigation and nitrogen.
7.	Awadhesh Kr.	Dr. K.K. Sinha	Effect of FYM nitrogen & zinc on growth

S. No.	Name of the Student	Name of the Advisor	Title of the Thesis
	Singh		& yield of Rajmash (*Phaseolus vulgaris* L.)
	Entomology		
8.	Ashok Kumar	Dr. R. K. Akhauri	Management of mustard aphid, *Lipaphis ergsimi* kait through varietal selection, Botanical and chemical insecticides in Brassica crop under late sown crops
	Extention Education		
9.	N. K. Sharma	Dr. A. K. Singh	A study of attitude of farm Youth towards artificial insemination
10.	Snehlata	Dr. A. K. Singh	Socio–economic and behavioural correlates of toddy seller: An exploratory study
11.	Deepak Kumar Patel	Dr. A.K. Chaudhary	Adoption Behaviour of Bee keepers about honey production technology in Samastipur district
12.	A.S. Tigga	Dr. Madan Singh	Women empowerment through local self governance
	Horticulture		
13.	P.N. Mandal	Dr. I.D. Prasad	Effect of the Growth Regulators on growth, yield and quality of hybrid Okra.
	Plant Pathology		
14.	Ms. Neelima	Dr. M.M.Jha	Stusies on the management of Late Blight of Potato caused by *Phytophthora infestans*(Mont.)DeBary
15.	Mr. Ran Avay Kumar	Dr.J.P. Upadhyay	Studies on mass multiplication and formulation of *Trichoderma viride*
16.	Ms. Neetu Bharti	DR.N.B.Dwivedi	Studies on Leaf Blight of sunflower
17.	Ms. Prachi Jha	Dr (Mrs) B. Rai	Studies on Brown Spot disease of Boro-rice caused by *Drechslera oryzae*(Breda de Haan) Subramanian and Jain
	Soil Water Engineering		
18.	Ravi Ranjan Kr.	Dr. R. Suresh	Evaluation of composite effect of drip irrigation and different colours plastic mulch on Banana
	Genetics		
19.	Archana Rani	Dr. Harsh Kumar	In vitro studies in *Chlorophytum borivilianum*(Safed musli)
	Plant Breeding		
20.	Shri yadubansh Narayan Rajpal	Dr. A.K.Singh	Character association and selection indices in Lentil

2.1.4. New Programme Initiated

M.B.A.(Agri Business Management) Programme has been started from June 2006.

2.2 Research

2.2.1 Numbers of Trial Conducted

2.2.1.1 Crop improvement section

S. N..	Crop	IVT/IHT/ IET	AVT/AHT/ AET	Others	Total	Lines tested	No. of entries promoted
1.	Rice	12	10	5	27	1144	5
2.	Maize (Kh.)	6	3	3	12	436	
3.	Maize (Rabi)	3	1	1	5	19	12
4.	Wheat	6	3	5	14	743	6
5.	Millets	1	5	4	10	160	-
6.	Pigeonpea	2	-	-	2	38	2
7.	MULLaRP	7	8	-	15	151	-
8.	Chickpea	5	2	8	15	226	-
9.	Tuber crops	1	-	2	3	26	-
10.	Potato	-	-	6	6	-	5
11.	Oilseeds	3	1	-	4	-	-
12.	Spices	2	-	5	7	449	-
13.	Vegetables	-	-	14	14	117	-
14.	Sugarcane	-	4	1	5	98	30
15.	Mango	-		8	8	74	-
16.	Guava	-		3	3	10	-
17.	Litchi	-		2	2	17	4

2.2.1.2 Crop Production Section

Sl. No.	Crop	Varietal trial nitrogen level	SRI/ Other cropping system	Weed management	Inter-cropping	Date of sowing	Phosphorus + Biofertilizer	Rhizobium	Others	Total
1.	Rice	6	2	2						10
2.	Maize (kharif)	5								5
3.	Maize (rabi)	3								3
4.	Wheat	2								2
5.	Chickpea	2	2			2		2		8
6.	Pigeonpea				1	1	1	3		7
7.	MULLaRP	1		1	2			2	4	10
8.	Tuber crops	1			1					4
9.	Potato	1			1		1		1	4
10.	Spices						1			3
11.	Vegetables						3			3
12.	Sugarcane					4			2	6
13.	Mango						1			1
14.	Guava						1		2	3
15.	Litchi									

2.2.1.3 Plant Protection Section

Sl. No.	Crop	Disease resistance screening	Insect pest screening	IPM/ IDM	Nematology	Others	Total
1.	Rice	4	5	6		13	28
2.	Maize (Kharif)	10	1	1		1	13
3.	Maize (Rabi)	10	1	1		1	13
4.	Wheat	1					1
5.	Pigeonpea	5	2	1	1		11
6.	Chickpea	1	4		1		7
7.	MULLaRP	4	7	1	3		19
8.	Tuber crops	2	1	7	1		11
9.	Sunflower	4					4
10.	Castor	4					4
11.	Vegetables	1		4	4		9
12.	Mango			2	7		9
13.	Litchi				3		3

2.2.1.4 Allied Field Research Section

Sl. No.	Discipline	Trials conducted
1.	Micronutrinets in soils & plants	12
2.	STCR	18
3.	Seed technology	16
4.	Betelvine	04
5.	Weed science	19
6.	ECF	03
7.	Honeybee	07
8.	Cropping system	11
9.	Soil survey & land use planning	17
10.	Water management	09
11.	Agroforestry	11
12.	Agrometerology	02
13.	Food Science & Technology	05
Home Science		
14.	Food & Nutrition	04
15.	Family Resource Management	01
16.	Textile & Apparel Designing	01
Basic Science Research		
17.	Botany & Plant Physiology	03
12.	Microbiology	04
13.	Genetics & Molecular Biology	03
14.	Biochemistry	01
Veterinary Science & Animal Husbandry Research		
15.	Animal Breeding & Genetics	02
16.	Parasitology	01
17.	Microbiology	02
18.	Surgery & Rediology	

Sl. No.	Discipline	Trials conducted
19.	Veterinary Physiology	03
20.	Pharmacology & Toxicology	01
21.	Animal nutrition	03
22.	L.P.T.	02
23.	L.P.M.	02
Agriculture Engineering Research		
24.	Farm Machinery	03
25.	PHT	07
26.	Soil Water Conservation	13
27.	Irrigation and Drainage Engg.	03
28.	Farm Power & Renewable Energy	01

2.2.2 Major Findings & Salient Features of Research Programme

2.2.2.1 Crop improvement section

I. Crop Research

Rice

- **Germplasm and Breeding materials:** About 1080 germplasm, 162 crosses and 279 breeding materials are presently available in the project.
- Production of breeder seed 21 varieties was done during the year.
- Three aromatic rice cultures are in the pipeline for release I Boro-Basmati (110 days/ 40 q in kharif and 60 q in Boro season), RAU-3036 (122 days/ 40 q in kharif) and RAU-3055 (110 days/ 40 q in kharif and 60 q in Boro season)

Maize

- Altogether 24 experimental single cross hybrids were evaluated under station trial 1 and 2 on the basis of superiority of hybrids over best check & promising experimental hybrids for common maize and 2 promising experimental hybrids for QPM maize were identified.
- The 5 kg seeds of each 9 experimental hybrids (4 QPM + 5 Common Maize) were produced and their seed had sent to DMR, New Delhi for inclusion in IET testing.
- 256 germplasms of different maturity groups were evaluated, 20 inferior germplasms of late maturity group were discarded and rest were maintained for further evaluation.
- 13 advanced generation white and yellow QPM lines were evaluated and maintained by hand pollution.
- 24 promising inbreds were evaluated and selfed at S_5 stage and their progenies would be further evaluated and advanced by artificial selfing.
- 1000 new inbred were derived from QPM-Pool-17, QPM Pool-16 and Pop-64 and Pop-65. These derived inbred lines would be evaluated and advanced by control pollination.
- Breeder seeds of Dewaki, Suwan, and parental line of QPM hybrids were produced by control pollution.

- 5 kg nucleus seeds of 36 genotypes consisting inbred lines, populations and pools were produced by hand pollination.

Pulses

- Bahar & NDA-1 varieties of pigeon pea performed better under delayed planting condition.

Oilseeds

- IAVT 11 (1111.1 kg/ha) was highest and at par in yield to IAVT 2 (1089.7 kg/ha) and IAVT-7 (1004.3 kg/ha)
- IAVT -7 (38%), followed by IAVT 2 (37.6%) and IAVT – 11 (37%) were the highest oil possessing entries.
- IH 663 (1923.2 kg/ha) was highest and at par in yield to IH 673 (174.5 kg/ha) and these two were significantly superior to all other hybrids in yield.
- IH 673 was highest in Oil content (34.2%) whereas IH 663 was having medium oil content (34.2%)

Vegetable

- Varietals trial on Brinjal long group, variety Raj. Baigan-II produced the highest yield of 276.04 Q. /ha.
- Variety Brinjal round group, DBR-8 recorded the highest yield (296.26 Q. /ha).
- In Dolichus bean varietal trial HADB-3 produced the highest yield of 86.53 Q/ha.
- Sponge gourd variety KSG-14 gave the highest yield (113.13 Q/ha) which was similar to Rajendra Nenua-1 (110.33 Q/ha).
- In Brinjal hybrid long group, BSS-513 produced maximum yield of 348.23 Q/ha which was at par to ARBH-201 (335.21 Q/ha) & Pusa Hy.-5 (310.08 Q/ha).
- Hy. Brinjal round group, Pusa Hy. -6 produced the highest yield of 346.87 Q/ha which was alike to HABH-17 (318.45 Q/ha).
- Ridge gourd hybrid BSS-580 noticed the yield of 91.51 Q/ha.

Tropical Fruits

- A total of 86 accessions belonging to different genomic groups are being maintained in a field gene bank at Pusa.
- In a variety trial, FHIA-1 & FHIA -3 produced consistently better yields in 3 crop cycles. The yield ranged from 60-70 t/ha/cycle.

Tuber Crops (Other than Potato)

- Altogether 1489 accession of different tuber crops are being maintained at Dholi centre. As compared to ten other centres of AICRP on tuber crops, Dholi centre maintained highest number of germplasm in Sweet potato (1166), Yambean (137) Colocasia (75), Elephant foot yam (18). Dioscorea

esculenta (10), Fur (12), Cassava (22) Winged bean(20) , Kanda (25) Coleus (01) ,White yam (02) and Katchu (01)

- Seventeen clones received from different coordinating centre were evaluated. The genotype D.O.P.92-93 recorded the highest marketable yield (17.7 t./ha) followed by S-594 (13.6 t/ha).
- Ten clones including check were evaluated. The clone D.O.P. -92-93 out yielded with mean marketable tuber yield of 18.5 t/ha against the check variety R.S.47 (15.2 t/ha)

Small Millets

Finger millet (*Elecine coracana L.*)

- In white seeded ragi trial none of the genotype found superior than VL - 149. In the station trial of ragi Rajendra Marua -4 gave higher grain yield (1509 kg/ha) followed by genotype Sitamarhi (1480 kg/ha) in 86 and 81 days only.

Foxtail millet *(Setaria itabica)*

- Foxtail millet trial AVT, 20 entries were tested among them FAVT -7 of produced (12.96 q/ha) grain yield with 80 days maturity periods.
- In the station trial of Setaria RAU-2 and RAU-9 genotype were found superior than checks variety PS 4.

Barnyard millet *(Echinochloa frumentacii))*

- In BAVT genotype BAVT 15 recorded highest grain yield 21.91 q/ha with the maturity period of 65 days only out of 25 tested entries.

Prosomillet (*Panicum miliaceum)*

- In this trial 13 entries were tested none of the genotype found better than BR 7 in Kharif trial.Two entry of Ragi , 3 entries of prosomillelt, two entries of Setaria and one entry of Barnyard millet were contributed for coordinated trials.Breeder/ Nuclear seeds were also produced for the varieties/ entries which are under testing in the coordinated trail and where performance has been found satisfactory.

Sugarcane

- Varieties Released: Two sugarcane varieties namely BO 145 (early group) and BO 141 (mid-late group) were released for commercial cultivation in Bihar.
- 29913 Sugarcane Seedlings were generated form biparental, FC's, self's and GC's of Pusa and Coimbatore hybridization programme. Out of these 17337 seedlings were carried to the second ground nursery.
- In Advanced Varietal trial on mid-late varieties, B O 137 and B O 136 were found superior varieties in respect of cane yield and CCS t/ha in plant as well as ratoon crop.
- In Initial varietals Trial on early varieties with 10 entries, CoP 02181 produced maximum cane yield as well as CCS t/ha followed by CoSe 02235, BO145

and CoSe 95422. These entries alongwith others are being tested under advanced varietal trials.

- In Initial varietal trial on mid-late varieties with 10 entries, BO 147 (99.34 t/ha) produced significantly higher cane yield than others except BO 146 (89.73 t/ha) and CoP 02182 (88.85 t/ha). In respect of CCS t/ha same trend was observed for these varieties. These varieties alongwith others are being tested under advanced varietal trial.
- On the basis of three years experimentation, in the early group CoX 98120 (68.83 t/ha) was significantly superior to CoX 98160 (59.46 t/ha) though statistically similar to standard B.O. 130 (62.24 t/ha) whereas in the mid-late group, CoX 98253 (76.11 t/ha) significantly outyielded standard B.O. 110 (62.10 t/ha). There were no marked differences in their juice quality. Genotypes CoX 98120 and CoX 98253 have been named CoP 051 and CoP 052 and put under co-ordinated testing for further evaluation.

II. Crop Production Section

Pulses

- Bahar and NDA-1 varieties of pigeon pea were more suitable for intercropping with Urd bean.
- Rhizobium strains from Varanasi, Gulberga & Dholi appeared to be better for nodulation in pigeon pea
- Pigeon pea germplasm screened against wilt showed 38 germplams promoising out of 480 and 162 germplasm against sterlity mosaic disease out of 459 germplasm.
- Pigeon pea+ Sesamum intercropping is useful for nematode management

Oilseeds

- 50% N and Seed Treatment with Azospirillum and Azatobactor combined or alone gave good yield of sunflower and 40 – 50% saving of Nitrogenous fertilizers.

Tuber Crops (other than Potato)

Whole mother tuber when used as planting material recorded maximum cormel yield (18.2 t/ha) which was statistically at par with planting of whole side tuber yield (17.0 t/ha).

Sugarcane

- In pre planting tillage experiment in sugarcane, conventional tillage i.e., one ploughing + 4 harrowing (80.22 t/ha) and twice ploughing by rotavator (75.37 t/ha), both were similar and significantly superior to two harrowing (64.17 t/ha) and no preparatory tillage (58.23t/ha). Pre planting tillage practices did not cause significant difference in sucrose % juice.
- Autumn planting produced higher cane yield and sucrose % juice than spring planting. Early genotypes BO 140, B.O. 139 and CoLK 94184 recorded 80.9, 75.5 and 65.8 t/ha cane yield and 16.69, 16.94 and 17.55% sucrose % juice respectively in autumn season whereas their cane yield were 69.9, 67.3 and 55.3 t/ha and sucrose % juice 16.31, 16.62 and 16.92 and 16.90% respectively during spring season. Genotypes B.O. 140 and BO 139 were

significantly superior to CoLK 94184 in cane yield in both autumn as well as spring planting. 125 and 100% fertilizer level both similar recorded cane yield of 80.9 and 75.5 t/ha cane yield respectively in autumn planting and 69.9 and 67.3 t/ha in spring planting and both the levels of fertilization were significantly superior to 75% fertilizer level during both the planting seasons respectively. Fertilizer levels did not cause significantly variation in sucrose % juice.

- In sugarcane + toria/sarson intercropping trial, sowing of 1 and 2 rows yellow sarson (Rajendra Yellow Sarson I) with sugarcane produced cane equivalent yield of 74.9 and 73.7 t/ha respectively than sole sugarcane (73.3 t/ha). The net profit was higher in sugarcane + 1 row and 2 rows yellow sarson than sole sugarcane and it was significantly higher than sugarcane + 1 row toria and sugarcane + 2 two rows toria.

III. Crop Protection Section

Pulses

AICRP on Pigeonpea

- Pigeon pea+ Sesamum intercropping is useful for nematode management

Vegetable

- In resistant varietals trial on Bhindi against Y.V.M.V. Pb-266 and NOH-303 were rated as resistant having less than 10% disease intensity at 90 DAS and yielding 80.5 and 78.6 Q/ha, respectively.
- Integrated management of soil Borne diseases of brinjal trial revealed that Green manuring + Neem cake + Trichoderma viride were most effective recording minimum incidence of 3.5 percent and maximum yield of 274.60 Q/ha.
- In seed treatment against pest complex of bhindi trial, seed treatment with imidacloprid @ 2.0 g/kg recorded lowest jassids population (4.27/3 leaves), shoots (6.22 %) and fruits (7.32%) with highest yield (81.52 Q/ha).
- Sex pheromone based IPM technology for brinjal shoot and fruit borer trial revealed that the damage of shoots and fruits was less than 10% as compared to control 15.2% shoots and 26.3 % fruits.

Tropical Fruits

- In acid lime, citrus canker & twig blight were observed in orchards of all age groups, while gummosis was encountered only in old orchards.
- Incidence of Scarring beetle was observed to be maximum during second fortnight of September & minimum in first fortnight of December.

Tuber Crops (other than Potato)

- By applying mulching with dried seesum leaves after planting in arvi with one spraying of neem leaves extract prepared by 1 kg neem leaf powder in 10 litre water gave minimum disease intensity of phytophthora leaf blight and maximum yield with muktakeshi (MR) compared to while gauria (MS).

IV. Allied Field Research:

1. AICRP on Weed Control

- Ethnobotanical survey of weeds: The whole plant infusion of Sahadevi (Vernonia cinerea) was found very effective in malaria and eleplantiasis, leaves of the plant was found effective in eczema and ring worm. Root decoction was observed in use of diarrhea and stomachache. Leaves powder of Sarphonka (Tephrosia purpuria pers) was found to be use in asthema and cough.
- A new weed record of Bihar: A new weed, Thithonia divaricata belonging to family Asteraceae was observed as road side weed in North Bihar. The plant was a tall, semi woody shrub growing to a height of 2.0 to 7.0 meter. The weed posses thickened stem at the base serving as hard rhizomatous portion, which facilitate re-growth of the weed very fast during the monsoon. It attained flowering during November and under go in senescence during February- March months. In the month of May-June, the aerial part of the plant became dry. The flower was bright yellow resembling Niger flower.
- Permanent trial on tillage in rice-wheat cropping system: In rice, data revealed that tillage practices and weed management significantly reduced the weed indices, lower weed indices were recorded in the conventional and bed system tillage, which were significantly superior to zero tillage practices. Hand weeding recording significantly lower weed indices than weedy check and was at par with recommended herbicide (Anilofos 0.4 kg/ha). Conventional system gave significantly higher grain yield than all the system. Like wise, bed system also produces significantly higher grain yield of rice than zero tillage practices.
- Weed management in upland rice: Mean performance of the treatment during kharif 2005 observed that use of butachlor 1.0 kg ai/ha (7 DAS) in cowpea intercropped rice followed by incorporation of cowpea (35 DAS) fb.mechanical weeding (DAS) and Anilophos 0.40 kg/ha (7 DAS alone + H.W.) gave paddy yield comparable with hand weeding twice and compared equal in regard to control of all weed types in upland rice. Butachlor, pretilachlor and Anilophos were better in lowering the growth and emergence of grasses. Cost wise the use of herbicides along with mechanical weeding (20-25 DAS and 40-45 DAS) or intercropping with cowpea or its incorporation appeared to be economical and saved the weeding cost considerably compared to hand weeding. Grasses by virtue of its higher competition offered greater suppressing ability than broad leaved weeds, although the BLWs density was higher in upland rice specially Caesulia axilllaris.

2. AICRP on Water Management

- Improved water management practices for rice generated at R.A.U.,Pusa were tested in 5 farmers' fields at Barkagaon sub-distributory. In study block, improved water management practices consisting of 3 days drying after disappearance of 7 cm of ponded water and recommended dose of NPK for rice variety (Rajshree) and local (Bakol) were used. In control Block, farmer's own practices of water management and prevalent dose of fertilizer as used by farmers with both the varieties.
- The yield in study block with improved rice variety ranged between 24.4 to 30.7 q/ha with a mean value of 27.4 q/ha, whereas in case of control it was

between 15.3 to 21.6 q /ha with a mean value of 18.5 q/ha. The yield of local variety Bakol was lower under both study (10.5 q/ha) and control (15.1 q/ha) blocks. Farmers applied more water in their own practices as compared to improved water management practices. The saving in irrigation water was 14 and 7 cm in case of respectively HYV and Local varieties due to improved water management practices.

- In case of HYV, Water-use-efficiency was 55.9 kg/ha-cm with improved water management practices as compared to only 29.4 kg/ha-cm in case of control. Considering local variety, WUE was found to be 41.8 q/ha-cm with improve water management practices, which reduced to 27.0 q/ha-cm in case of control.

Response of Kharif maize-paddy inter-crop to drainage

- The experiment as a pilot trial was started with three Cropping patterns viz. Maize on raised beds, maize on raised beds and paddy in furrow, and maize using conventional (farmers') technique which was considered as control. There were three moisture regimes – surface drainage, water application after 7 days of disappearance of ponded water (partial drainage) and rainfed (partial drainage).
- Attempt was made to conduct the trial under irrigated condition due to failure of rain during the season. Although, effort was made to maintain different moisture regimes as per treatment, but it was felt that it was too difficult to maintain. In total, six irrigation were applied, each application ranged between 5-6 cm.
- It was found that the maize crop developed very well. There was vegetative growth of paddy also, but despite six, irrigation applications there was negligible grain setting. Consequently, paddy crop was considered failed. In case of maize, the yield ranged between 45.85 q/ha to 61.32 q/ha, the average being 51.66 q/ha.
- From this pilot trial, it was come to light that due to unpredictable weather conditions, inter-cropping system comprising of water sensitive and water loving crops has a promise. At least one crop will come up, rather total failure of crop from the area.

3. AICRP on Betel vine

- Germplasm collection, Maintenance, Evaluation and cataloguing: Twenty cultivars of betel vine from different regions of state and different states of the country were collected and maintained in the betel vine conservatory. Cultural practices and manurial schedules were followed uniformly.
- Efficacy of bio-fertilizers in Betel vine: It is evident from result that bio-fertilizer alone or in combination with inorganic fertilizers had significant effect on plant growth characters i.e. no. of consumable leaves/ha, nutrient content in plants, nutrient uptake by the plants and finally soil nutrient status. Shelf life (days to 50 per cent rotting) of betel vine were superior in control plot which was at par with application of Azotobactor @ 5kg + 100 kg P2O5 100 kg K2O/ha, Azotobactor @ 10 kg + 100 kg P2O5 + 100kg K2O/ha, Phosphobactor 5 kg + 200 kg N + 100 kg K2O / ha and vermicompost 12 t/ha. Percent disease incidence was comparatively low in the control plot but found at par with T3 (Phosphactor 5 kg + 200 kg N + 100 kg K2O/ha) and application of 12 t/ha vermicompost. Soil application of vermicompost also

had marked increase in the nutrient content of the soil (Statistical analysis of the data are under process).

- Integrated crop management (IPM + INM) of Betel vine crop. The result revealed that recommended plant population (1.50 lakh/ha) and recommended nutrients 200:100:100 N: P2O5 : K2O kg/ha as organic + 4 application of Trichoderma viride with sanitation + recommended insecticide application was found at par with recommended plant population + RD of nutrients through organic + 3 dreading of Bordeaux Mixture (1.%) followed by 6 sprays of B.M. (0.5%) over farmer's practice in term of plant growth, leaves yield, shelf life, percent disease index, dry matter production, nutrient content, nutrient uptake by the crop. However final nutrient status of the soil was unaffected. (The data are under statistical analysis).
- Nutrient uptake study in Betel vinelt is evident from the result that the recommended i.e. 200 kg N, 100 kg P2O5 and 100 kg K2O/ha was found superior than the reduced dose of NPK (150 kg N, 50 kg P2O5, 50 kg K2O/ha) either applied in form of organic and inorganic in ratio of 1:1.The higher dose of NPK recorded higher response in respect of plant growth, leaves yield/ha, nutrient content of the crop, nutrient status of the soil.

4. Cropping System Research Project, BAC, Sabour

- Diversification of existing rice-wheat cropping system: Among the fourteen rice based cropping system tested, rice – potato-onion+ maize (cob) gave the highest REY (333.8 q/ha) followed by rice- potato – onion (310.72 q/ha) and rice- garlic – maize (280.53 q/ha). However, rice- garlic- onion was identified. Most remunerative cropping system with net return of Rs. 95, 716/ha. Rice-maize + Potato system was found to be most promising energetically producing 59.748 cal/ha.
- Development of organic farming package for system based high value crops (Basmati rice – potato- onion): First year data revealed that application of 100% recommended dose of nutrients through inorganic fertilizers produced the highest REY (226.09 q/ha) and net monetary return of Rs. 82,045 /ha, followed by the treatment receiving 50% NPK through fertilizers having corresponding value of 219.79 q/ha and Rs. 75,531/ha. Application of 100% recommended dose of nutrients through organic sources recorded the lowest productivity and profitability.
- Tillage and planting management technique in rice-wheat cropping systems to improve crop productivity and soil properties: Transplanting of rice by self propelled transplanter and sowing of wheat by strip till drill provided the maximum rice- equivalent yield and net monetary return of the system.
- Site-specified nutrient management in rice- wheat cropping system: Application of 150 Kg N/ha along with a dose 30 Kg P_2O_5 and 50 Kg K_2O/ha in rice and wheat and 40 Kg S/ha only in hybrid rice is adequate for achieving higher yields and net profit from rice-wheat cropping system.
- Integrated nutrient management in rice-wheat cropping system: Application of moderate doses of FYM (40 to 80 Q/ha), wheat straw (30 to 60 q/ha) and green manuring with Sesbania aculeata (47 to 94 q/ha) in rice can reduce the recommended dose of inorganic fertilizers from 25 to 50% to maintain their productivity, soil health and sustainability in rice –wheat system.
- Comparative performance of different period bound rotations.

- Induction of a oilseed (Mustard) or a pulse (Lentil) crop in place of wheat once in four years have helped in increasing the productivity as well as profitability of rice-wheat system.

5. Medicinal and Aromatic plants

- Lemon grass oil obtained form the leaves of stem less perennial aromatic grass-lemongrass is a natural source of citral used in cosmetic, disinfectant and pharmaceutical industry.
- In the third year of planting, the crop gave a maximum herbage yield of 242 q/ha with 40 x 60 cm intra-spacing and four annual cuttings. The yield was 17.3% more than that obtained in three cutting only, and 11.5% more than the average herbage yield of 40 x 40 cm spacing.

6. AICRP ON Agro forestry

- Comparative performance of promising poplar clones under agro forestry system: Growth performance of two-year-old plantations of six promising poplar (Populus deltoids) clones procured from Pantnagar revealed that height was maximum in L-52 (5.57 m) followed by PP-5 (4.86 m), L-188 (4.50 m), G-48 (4.40 m), Udai (4.26 m) and L-49 (4.16 m). Diameter at breast height (dbh) was also superior in L-52 (7.62 cm) followed by PP-5 (5.57 cm) and the lowest by G-48 (3.25 cm).
- Effect of sulphur application on the survival and growth performance of Jatropha curcus: Data on survival, height and collar diameter of 1.5-year-old Jatropha as affected by six levels of sulphur viz.; 0, 20, 40, 60, 80 and 100 kg ha-1 showed that there was 93% (100 kg S ha-1) to 100% (40 kg S ha-1) survival. Height and collar diameter varied from 1.00 m (0 kg S ha-1) to 1.39 m (40 kg S ha-1) and 5.46 cm (0 kg S ha-1) to 6.83(40 kg S ha-1), respectively. Both the growth parameters showed the increasing trend up to the level of 40 kg S ha-1 and after that they started to decrease.
- Improvement of Development of Jatropha and Karanja based Agro forestry System in Wasteland Development of Bihar: Among the Jatropha accessions the best performance with maximum germination percentage and poor performance with minimum germination percentage was recorded 45.0 in T6 (RJ-H7 Ganjam Rahuri, Maharastra) and 1.67 in T7 (PKVJ-DHWI Jalana, Maharastra), respectively. The maximum and minimum height (cm), diameter (cm) and number of leaves was recorded 28.63, 2.10, 24.67 and 18.93, 1.26, 11.00 and 0.33 respectively.
- Among the Karanja accessions the best performance with maximum germination percentage and poor performance with minimum germination percentage was recorded 71.67 in T1 (RAK-22) and 1.67 in T3 (Bihapur) respectively. The maximum minimum height (m) Dbh (cm), number of branch and sub-branch, number of fruiting branch, number of flowering branch and number of fruits of the plus trees varied from 4.55-6.14, 23.0-34.0, 2-4, 21-30, 5-8, 2-12, 7-38 respectively.

7. AICRP ON Agromet

- Under response of rice varieties transplanted on different dates, the period required for different phenophases, maturity & grain yield decreased with subsequent delay in planting time.
- The crop planted on June 06 produced the maximum grain yield while minimum grain yield was associated with the crop planted on August, 2005.
- Among the varieties, Rajendra Mansuri produced the highest grain yield followed by Nata Mansuri & Rajendra Sweta.

8. AICRP on Soil Test Crop Response Correlation

- Long term experiment on crop residue management indicated that compost + crop residue cold save 50% of the recommended dose of fertilizer. Among different organic sources compost + crop residue was found to be best.
- Basic data targeted yield equations and fertilizer recommendation schedule to produce desired yield targets of potato, winter maize, garlic, turmeric and German chamomile were developed.
- The targeted yield equations developed for different crops were validated at farmers field. The results indicated a variation of + 10% between actual yield obtained and yield target.

9. All India Coordinated Scheme of Micro and Secondary Nutrients and Pollutant Elements in Soil and Plants

- Reassessment for nutrient status in seven districts of Bihar (viz. Muzaffarpur, Vaishali, Samastipur, Khagaria, Madhepura, Saharsa and Purnea) indicated more prevalence of multinutrient deficiency in calcareious belt of Muzaffarpur, Vaishali and Samastipur as compared to non-calcareous belts of Saharsa, Khagaria, Madhepura and Purnea. The deficiency of Zn was found to be most prevalent.
- Results of long-term experiment conducted under rice-wheat-sorghum (RWS) and rice-mustard-moong (RMM) showed declining yiled trends with time at all fertility levels upto 10th cropping cycle. Addition of 10 kg Zn + 10 t FYM/ha in alternate cycle from 11th cropping cycle arrested decline in yield. The magnitude of yield response and micronutrient uptake was found to be more in RWS rotation as compared to RMM.
- Effect of crop residue recycling in long term experiment on rice-wheat system indicated that application of 5 kg Zn/ha once in 1st crop and 50% residue of every crop was mulch effective as 100% crop residue alone. The total Zn recycled increased with increasing Zn levels as well as increasing crop residue levels.
- The long term experiment conducted on green manuring indicated that among green manuring crops Dhaincha appeared to be most effective when applied eac year. But green gram along with 5 + FYM/ha was found to be best which was as good as Zn application as inorganic fertilizer.

10. AICRP on Honeybee

- Maximum propolis was extracted in the month of rainy seasons i.e. August, September and October. Among the different methods of propolis collection, maximum production was obtained in scrapping followed by plastic net

placed on stick and lowest in plastic net placed on bottom board. Thus from the colony one can extract propolis on an average of 22.03 g in a month in a year.

- The data recorded clearly indicate that on an average 42.00 mg bee venom can be obtained from one colony of Apis mellifera in a year.
- Pollen was harvested in the colonies i.e. 16.33 g and 15.00 g / day in the peak season of mustard flowers in Apis mellifera honey bee colonies. Though pollen harvest showed slightly lower development but harvesting of pollen has not much effect on development of colony.
- About 15 q litchi honey, 7 q mustard honey and 3 q jamun honey was extracted during the year.

V. Departmental Research (Agriculture)

1. Nematology

- Root–knot nematode (Meloidogyne incognita, M. javanica) & Reniform nematode (Rotylenchulus reniformis) were the major nematodes in kharif vegetables and pulses.
- Root-knot nematode (M. graminicola) was prevalent among endoparasitic nematode causing galls in rice.
- Population of Tylenchorhyncous sp (T. nudust + T. mashhoddi) dominated over other nematodes followed by Hoplolaimus indicus, Helicotylenchus sp and Tylenchus in Rice field.
- Ufra disease of rice and white tip disease of rice caused by Ditylencvhus angustus and Aphelenchoides besseyi respectively were not found in any sample.

2. Seed Technology

(A) Seed Production

- Grow out test: Seven breeder seed lots of rice varieties with their standard sample were subjected to grow out test to ascertain their genetic purity. No off type plant were observed in three varieties (i.e. Sugandha, Pusa-834 & Pusa 677). In four other variety (Turanta, Sita, Rajshree, Prabhat), the per cent off type varied from 0.07 to 0.09 %.

(B) Seed Physiology:

- To standardize the method of estimating seed vigour in paddy: Twelve seed lots of four paddy varieties (Rajshree, Prabhat, Sita, Gautam) were used in laboratory. The seed vigour of Rajshree var. with lot no. 7 was highest among all the seed lot of same var. as well as in case of other var. The data shows that the sample having max. 1st Count & seedling length was good indicator of field emergence.
- To identify the var. with early seedling vigour suitable for aerobic rice cultivation: The results of all 7 var. of rice tested for early seedling vigour shows that the speed of germination was good indicator of field emergence. The max. field emergence was observed in var. Sita (24 .00) where as of was minm. var. Sugandha (18.30).

3. Food Science and Technology

- Cape gooseberry used for making squash, RTS and Jam. Fruit contain higher T S S (12.5 B) Vit. C 5 mg/ 100 g. pulp and acidity (0.2%). They maintain their TSS and Vit. C even after six month of preparation, though the flavour of RTS was slightly deteriorated even with highest B:C ratio 1:3.1.
- Utilization of guava waste for making Vinegar- The guava waste initially contain TSS (5.7'B), acidity (0.31%) and Vit.C (36 mg/100 g. of pulp). Acidity increased to 2.7% only after six months of storage.
- Utilization of water chestnut (Singhara) as dried nut and flour. Powers were used to prepare halwa with the ratio of 25%, 75% and 100% Singhara flour mixed with wheat flour. Wheat flour alone 100% was also used as a check. The crispiness, flavour and taste were found superior with 100% and 75% Singhara flour in comparison to other ratio with wheat flour for high nutritive value.

VI. Agricultural Engineering Research

Post Harvest Technology

- Experiments conducted for grading of maize seeds of five varieties (Laxmi, Deoki, Suwan, Shaktiman- 1, Cargil) using Lab. Model of two screen cleaner-cum-grader (AGROSAW) with the fixed top screen size of 10.00 mm round hole sieve and four variable bottom screen sizes of 6.5, 7.,5, 8.5, 9.5 mm round hold sieves at three different feed rates (79.8, 88.1 and 98.5 kg/h).
- The overall maximum machine capacity 87.96 kg/h with the maximum percent seed recovery 97.56 % for Laxmi variety.
- The optimum sieve size for grading maize seed was found to be 6.5 mm round hole with 79.8 kg/h feed rate.
- In order to evaluate the process Variables for Seed Processing of different Maize Varieties, experiment was conducted, which included specific gravity separation.
- Objective of the experiment is to study the gradual positive improvement in seed quality in multistage modern seed processing.
- Same experiment as above with addition of specific gravity separation of graded lots of five varieties mentioned above at three different feed rates and three oscillating desk speeds.
- It was found that Maximum recovery of grade III seeds (79.52 % for cargil) among all fractions followed by grade II seeds (54.84% for Laxmi and light seeds (46.76 % for Shaktiman-1) in that order in all varieties.
- CIAE pedal-cum-power operated cleaner tested for cleaning and grading of wheat (1744), pigeon pea grains (Sharad) and maize grains (Shaktiman-1 and Cargil) at different feed rates manually (Pedal operated) as well as with electric motor (Power operated).
- Physical properties (1000 seed mass, moisture content, length, breadth thickness, GMD, sphericity) were also measured for uncleaned/ un-graded seeds and cleaned / graded seeds.

- Effect of different feed rates (4/3 levels) and motor speed (2 levels) was seen on percent recovery of different fractions after cleaning/ grading, machine capacity and specific energy consumption.
- Experiments was conducted for grading and separation of paddy seeds of three varieties (Kishori, Prabhat and Rajshree) using Lab. Model of two screen cleaner-cum- -grader and specific gravity separator (AGROSAW).
- Maximum seed recovery as 86.945 % for Kishori, 91.685 % for Prabhat, and 96.933 % for Rajshree variety of paddy seed during grading.
- Maximum recovery of grade II seed (46.98% for Kishori) ,Grade III seed (86.16% for Kishori) and Light seeds (10.48% for Rajshree) during specific gravity separation.

Irrigation & Drainage Engineering

- Ground Water Recharge estimation for Muzaffarpur district showed recharge during Monsoon season was 85349 ha-m. Recharge during non-monsoon season was 18152 ha-m. Recharge contribution due to floods was 5649 ha-m. The total annual recharge was 109150 ha-m .Ground water balance of the areawas 57488.9 ha-m.
- High concentration of Ca++ + Mg++ (15.6) and (11.5 me/L) was observed in Barauni industrial area.
- At Patna the values of pH, EC, Na+, Ca++ Mg++,CO3-- + H CO3-, Cl- and SAR were found to be within permissible limits.

Soil & Water Conservation Engineering

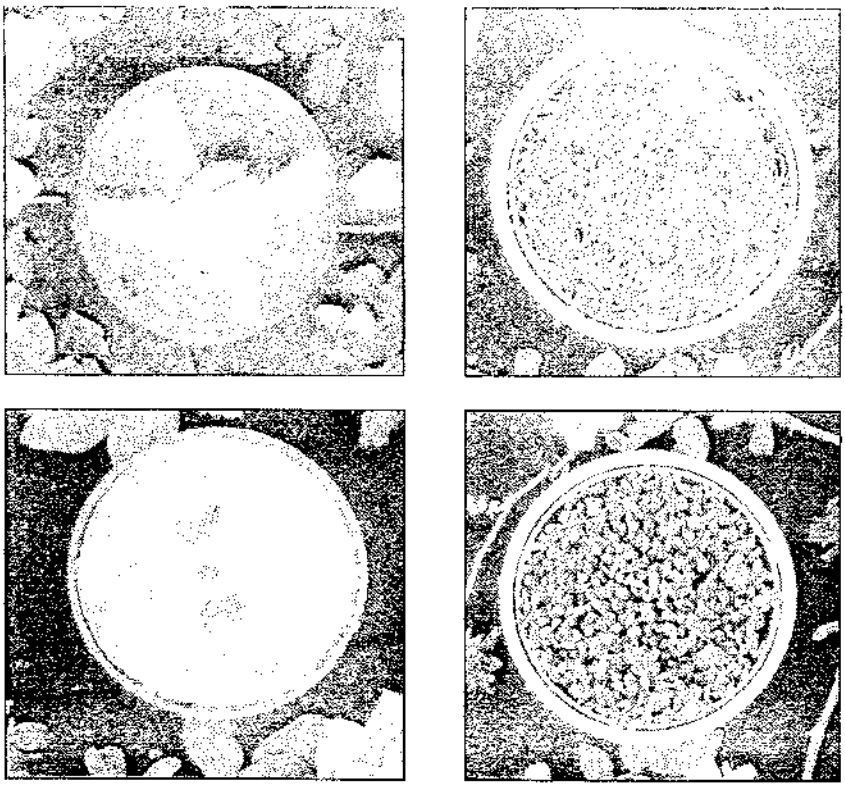
- Fertigation and mulch on banana intercropped with cowpea showed that amongst different treatments of fertigation without mulch, 100% fertigation gave highest vegetative growth and yield (78.62t/ha) while 100% fertigation with mulch resulted the yield of 79.64 t/ha. The yield of intercrop cowpea was found to the tune of 13.06 t/ha.

VII. Home Science

- A total of 11 recipes from newly developed mungbean varieties have been developed. The protein content per 100 K.cal was the highest (11.53 g) in cutlet followed by mung dal mixture (7.04g), chhole (6.51g), chokha (6.24g), bread roll (6.0g), sev (4.64g), bundi (4.17g), makuti (3.49g), sabji 93.46g) and halwa (2.29g). In all the products the contribution of mung for protein content was above 80 per cent (except cutlet).

Quality assessment and marketing potential of value added Quality Protein maize based food products.

- The study on food consumption pattern of maize in Bihar shows that maize is being utilized in human food in the form of popped maize, roasted cob, maize chura, dalia, sattu and roti.
- Some families use tender maize in dessert preparation. But, these products are generally used by whole families. Maize products were not specifically prepared for the consumption by vulnerable groups' i.e. preschool children, pregnant and lactating women and elderly persons.



Value added products from Moong

- Generally, the consumption of maize in daily routine diets has gone down in Bihar even in lower strata of families. Now-a-days, maize products are being consumed to change the taste by most of the families. The reason for not using maize in daily diet is its hardness and lower shelf life of maize flour.
- Occasionally consumed products were health mix, laddo, toffee, and kheer. Utilisation of maize in form of health mix, laddo and toffee were found in the area where training was imparted by the department for development of value–added products under All India Coordinated Research Project on Maize.
- A total of six products were developed by RAU Pusa center. These products are bun, ladoo, rusk, papad, chatani powder, biscuits. Development and evaluation of the products are in progress

VIII. Basic Sciences Research

Genetics

Plant Genetic Recourses management:

- Large number (1200) of land races of various crop species/medicinal and aromatic plants including rare land races of rice were collected and deposited in NBPGR under conservation and management of biodiversity financed by ICAR/NATP.
- Identified genetically diverse entries through evaluating 140 rice accessories for developing a core collection of entries in early, medium and late maturity groups.

Pre-Breeding For Genetic Enhancement of Rabi Pigeon Pea:

- Genotypes RAUP-3, RAUP-15, RAUP-10, RAUP-2, VKS/SCC-10/57, IC-274730, VKS/SCC-12/19, RAUP-34, Pusa-9, Bahar and Muzaffarpur Local showing tolerance to cold and high rate of biomass accumulation in early growth stage were identified as potential donors for these traits.
- RAUP-14, RAUP-34, VKS/SCC-2/8, Pusa-(B)-35 and ICPL-7 showed comparatively less infection was identified as tolerant to pod borers. ICPL-7 and Pusa-(B)-0137 showed lowest (25% and 27% respectively) pod fly infestation
- Five entries namely RAUP-32 and RAUP-34, Pusa-(B)0137, Pusa (B)-0136 and ICPW-98008 were identified as resistant to Alternaria blight. 25 entries showed moderately resistant reaction, sixty-one entries showed moderately susceptible reaction and twenty-one entries were susceptible. None of the entries showed highly susceptible reaction. The disease intensity in control var. Bahar was 53%.

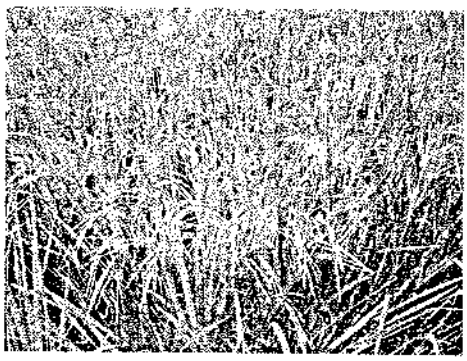
Pigeon pea Improvement:

- Donors have been identified for different traits desirable for rabi cropping system for their utilization in crop improvement programme.
- Different accessions of cultivated and wild Cajanus species were characterized for isozyme pattern of peroxidase, amylase and poly phenol oxidase. Interspecific variation was observed only for peroxidase.
- Interspecific variation observed in isozyme pattern of peroxidase, acid phosphatase and esterase indicates their use as marker in identification of interspecific hybrids.

2.2.3 Varieties Released

I. Rice

a) **Rajendra Suwasni** : Variety having long slender grain, highly aromatic has been developed from cross between Katarni x Pusa Basmati. It is an early group variety which matures in 110-115 days. It's yield potential is 45-50 q/ha. Variety is moderately resistant to sheath blight and brown plant hopper.



b) **Rajendra Kasturi** : Variety having short aromatic grain has been developed from cross between Kasturi x Sugandha. It is a medium group variety which matures in 125-130 days. It yield potential is 40-45 q/ha. Variety is moderately resistant to sheath blight and brawn plant hopper.

II. MUSTARD

Rajendra Sufalam (Indian Mustard)

Rajendra Sufalam (RAURDL 02-01) released in 2006 by SVRC for Rice-Fallow Agro-ecosystem and flood prone areas of whole Bihar, is a late sown Indian Mustard (*Brassica juncea* L. Czern & Coss) variety suitable from 15th November to 15th December sowing under irrigated condition after paddy harvest and has wider adaptability with better plasticity for late sowing dates. This variety gives an attractive average yield of 1631 kg/ha with potential yield of 2250 kg/ha under good agronomic management and favourable weather conditions. With an attractive plant type and basal branches its plant bear good bold siliqua filled with bold seeds (1000-seed weight 6.0 g). The variety is of medium plant height (145 cm), medium maturity duration (107-115 days) and around 40 per cent oil content. It also has better tolerance to biotic stress particularly stag-head and downey mildew.

Rajendra Sufalam with its excellent yield potential under late sown conditions and bold seeded character is very remunerative and attracted farmers response, resultantly cultivated on a large acreage in the State. It offers 43.32 to 87.50 per cent yield over farmers practice (YIOFP); 3.13 to 8.15 Incremental Benefit : Cost Ratio (IBCR) and Rs. 8366/ha Additional Net Return (ANR) i.e. additional Net Return over Net Return obtained from farmer's practice.

Very popular among farmers of the State, this variety has enough potential to benefit farmers and its share towards edible oil requirement of the State, as it offers opportunity for horizontal expansion of mustard after late mature paddy harvest (Rice-Fallows), flood prone areas and also in limited irrigation potential tail-end canal areas with vertical yield boost in late sown agro-ecology of Bihar State.

III Fruits

Rajendra Sapota - 1

A superior variety named **Rajendra Sapota-1** has been released as a seedling selection from cv. Cricket Ball. Its fruits are round, large in size measuring 7.5 cm to 8.0 cm in diameter. Pulp is sweet, gritty and granular with 46 seeds. The TSS is 18-19%. The average fruit weight ranges between 140 g and 160 g.

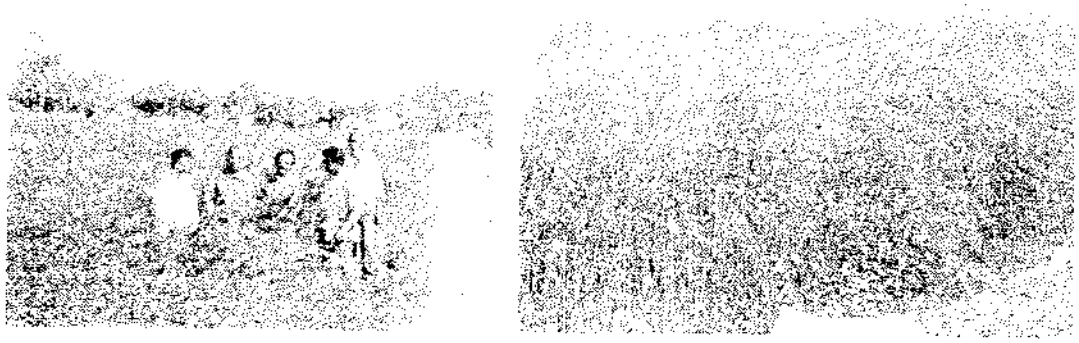
IV. Sugarcane

B. O. 145

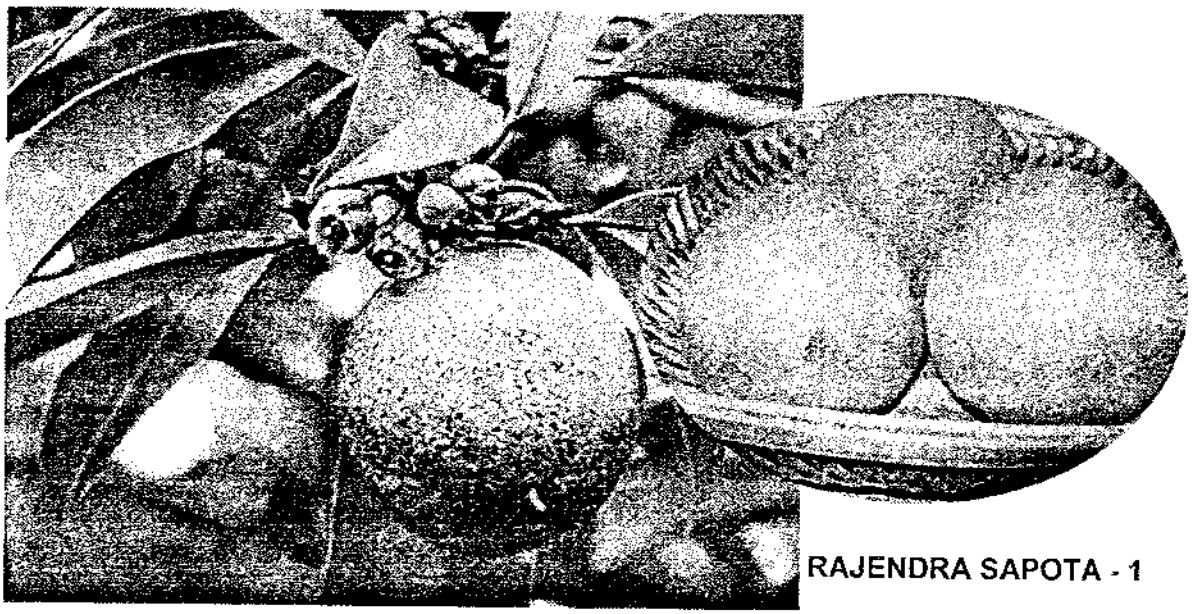
Straight to slightly *zig-zag* alignment, medium long cylindrical purple green internodes, small to medium ovate bud without bud groove, green with purple tinge without spines leaf sheath, one lanceolate other dentoid auricles, medium broad green leaves with semi-spreading carriage, suitable for all types of soil of Bihar, produces an average yield of 82 .0 t ha^{-1} with average 17.42% sucrose in juice, becomes ready for harvest in second fortnight of November, resistant to all major diseases and has low incidence of insect-pests.

B.O. 141

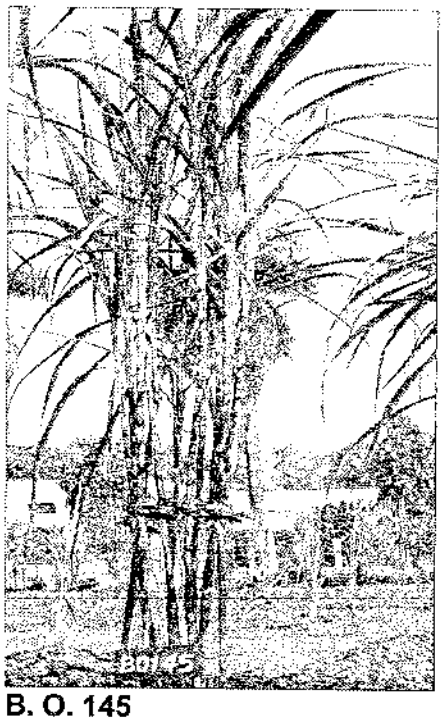
Straight green stalk which turns light purple on exposure, medium thick cylindrical medium long internodes, small round ovate bud, light green without spines leaf sheath, medium broad light green leaves with semi spreading carriage, tops remain green till harvest, suitable for all types of soil of Bihar, produces an average yield of 88.00 t/ha with average sucrose of 16.35%, moderately resistance to major diseases and has low incidence of insect-pests, becomes ready for harvest from second fortnight of January.



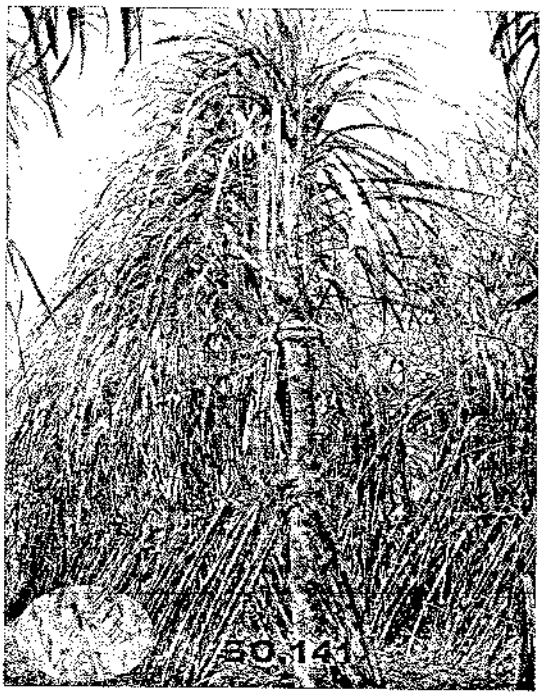
RAJENDRA SUFLAM (RAURDL-02-01)



RAJENDRA SAPOTA - 1



B. O. 145
Parentages: B. O. 110x B. O. 121
Maturity group: Early



B.O. 141
Parentages: B.O. 89 FC
Maturity group : Mid-late

EXTENSION ACTIVITIES

2.3.1 Training Conducted by the KVKs

During the year 2006-07 a large number of trainings have been conducted by KVKs for practicing farmers, rural youths, rural womens and extension functionaries on various aspects of agriculture and allied branches. Deatails of these trainings have been given below.

Trainings conducted (KVK wise)

Name of KVK	Thematic Area	No. of Participants		
		Male	Female	Total
Araria	Crop production	771	60	831
	Horticulture	0	44	44
	Plant Protection	108	0	108
	Plant Breeding	46	0	46
	Agril. Engineering	510	50	560
Begusarai	Crop production	468	189	657
	Horticulture	18	43	61
	Animal Science	201	22	223
	Home Science	78	202	280
	Plant Protection	812	56	868
	Plant Breeding	62	0	62
Darbhanga	Crop production	340	460	800
	Plant Protection	298	0	298
	Plant Breeding	55	0	55
Madhepura	Crop production	360	0	360
	Plant Protection	243	0	243
Munger	Crop production	1118	430	1548
	Horticulture	39	102	141
	Animal Science	212	0	212
	Home Science	0	195	195
	Agril. Engineering	325	60	385
	Plant Protection	579	109	688
	Plant Breeding	107	0	107
Muzaffarpur	Crop production	541	967	1508
	Home Science	84	1065	1149
	Plant Protection	1157	0	1157
Patna	Crop production	1001	975	1976
	Horticulture	72	93	165
	Plant Protection	1417	129	1546
	Home Science	467	540	1007
	Animal Science	189	111	300
	Agril. Extension	362	38	400
	Agril. Engineering	570	20	590
Rohtas	Crop production	393	141	534
	Horticulture	45	38	83

Name of KVK	Thematic Area	No. of Participants		
		Male	Female	Total
	Agril. Engineering	18	0	18
Samastipur	Crop production	1335	6440	7775
	Horticulture	6	67	73
	Plant Protection	1457	7	1464
	Home Science	0	107	107
	Plant Breeding	879	2	881
	Animal Science	275	1	276
Vaishali	Crop production	0	160	160
	Horticulture	0	23	23
	Home Science	10	15	25
	Plant Protection	0	24	24
	Animal Science	46	0	46
W. Champaran	Crop production	4069	138	4207
	Horticulture	12	58	70
	Plant Protection	274	26	300
Gaya	Crop production	217	654	871
	Horticulture	72	305	377
	Plant Protection	122	0	122
	Home Science	10	15	25
	Plant Breeding	22	0	22
Gopalganj	Crop production	1167	0	1167
	Horticulture	0	42	42
	Plant Protection	222	6	228
	Plant Breeding	390	22	412
	Agril. Extension	9	12	21
Aurangabad	Home Science	95	364	459
	Agril. Extension	45	5	50
Saran	Crop production	485	147	632
	Horticulture	0	2	2
	Plant Protection	31	0	31
Sheohar	Crop production	167	176	343
	Horticulture	32	25	57
	Plant Protection	85	0	85
	Plant Breeding	98	12	110
Lakhisarai	Crop production	515	0	515
	Horticulture		32	32
Kishanganj	Crop production	201	212	413
	Plant Protection	190	0	190
Jehanabad	Crop production	302	312	614
	Plant Protection	286	0	286
	Total	**26192**	**15550**	**41742**

2.3.2 FLDs conducted

Name of the KVK	Technology demonstrated	Area in ha	No. of particip ant	Crop
Purnia	Micronutrient use Groundnut Crop	2.0	10	G/N (AK-24)
	Introduce new varieties of lentil	5	13	Lentil (K-75)
	Introduce new Pulses crop of Rajma	04	10	Rajma (PDR-14)
	Introduce new varieties of Moong	05	14	Moong (Pusa Vishal)
Gopalganj	QPM	03	07	Maize
	PBW 343	2.40	3.0	Wheat
	PBW 373	1.6	2.0	Wheat
Samastipur	Varietal Performance	5	31	Sarson (Pusa Jaikishan)
	Varietals Performance	5	31	Lentil (Arun)
	Varietals Performance	4	37	Arhar(P-9)
	Varietals Performance	5	50	Moong (SML -668 P.Vishal)
	Varietals Performance	4	21	Wheat HD-2733/2824
	Varietals Performance	10	230	Rice (Rajendra Sweta)
	Varietals demonstration	15		Brinjal + IPM Kit
	Varietals demonstration	10.6		Marigold Pusa Red and Pusa Basanti
Begusarai	P-9	2.5	8	Pigeon pea
	Sufla	10.0	18	Mustard
	PDR 14	2.5	15	Rajma
	Arun	5.0	20	Lentil
	Yellow Satabar	16.0	40	Asparagus
Saran	Production of Gladiolus	0.93 8	45	Gladiolus
	Production of Marigold	15.3	102	Marigold
Banka	Seed	2.0	10	Redgram (P-9)
	Seed	4.5	15	Lentil (K-75)
	Full Package	4.0	12	Mustard (P Jai Kisan)
Bikramganj	HYV	5.0	30	Wheat
	HYV	5.12	50	Mustard, Termeric, Paddy
Jehanabad	Rai(R.Sufalam)	10.0	16	Rai
	Lentil (Arun)	10.0	16	Lentil

Name of the KVK	Technology demonstrated	Area in ha	No. of participant	Crop
	Paddy (R.Sweta)	10	12	Paddy
	Sunflower (Modern)	05	09	Sunflower
Vaishali	Varietal	05	15	Mustard (R. Sufalam)
	Varietal	0.18	2	Pegon pea (Bahar)
	Varietal	20.0	26	Shaktiman 4
	Varietal	2.0	7	Wheat (PBW343)
	Varietal	0.5	4	Elephant foot yam Gajendra)
	Seed Production	2.0	12	Cauliflower (Early Kuari)
	Varietal	0.5	10	Papaya
	Varietal	10.5	61	Marigold (P-Narangi)
	Income generation	0.27	26	Gladulus
Madhepura	Varietal test	16.0	38	Rai, lentil, summer moong
Muzaffarpur	HYV	5.0	21	Mustard
W. Champaran	Improved variety	4.0	11	Mustard/ Toria (RAUTS-17)
	Do	4.0	35	Linseed (Parwati)
	Use of Rhyzobium Culture plus phosphate fertilizer	4.0	20	Pulse, Lentil (Arun)
	Rhizo + phosphatic fertilizers+HYV	4.0	10	Red gram (Bahar)
	Use of HYV kharif	5.5	11	Paddy
	Use of zero-tillage m/c	1.0	8	Wheat
	Medicinal plant cultivation	1.5	38	Satawar
	Floriculture	1.0	18	Merrigold/ gladolus
Aurangabad	Packages and practices of Gram through ZTD	3.5	10	Gram
	Packages and practices of lentil through ZTD	10.0	20	Lentil
	Packages and practices of Rice HYV, Hybrid	20.0	93	Rice
	Packages and practices of wheat through ZTD	10.0	24	Wheat
Siwan	Crop Production	2.0	23	Pigeon Pea
		2.0		Toria
		2.0		Lentil
		2.0		Lin Seed

Name of the KVK	Technology demonstrated	Area in ha	No. of particip ant	Crop
Darbhanga	Full Package	1.0	5	Paddy
		1.0	4	Mustard
		2.0	20	Whaet
		2.0	43	Moong
		15.0	15	Fish
Munger	Varietal	5.0	48	Arhar (P-9)
	Do	2.5	17	Lentil
	Do	5.0	16	Toria (PT-303)
Arariya	HYV	5.0	10	Paddy (R. Mansoori)
	Improved variety (UP 2425)	3.0	9	Wheat
	Rai (Jagnath and Pusa Bold)	5.0	10	Rai
	Lentil(K75)	5.0	13	Lentil
Patna	Caster	5.0	12	Caster
	Rai	75.0	323	Rai
	Linseed	10.0	27	Line seed
	Pigeon-pea	3.0	15	Pigeon-pea
	Gram	3.5	10	Gram
	Lentil	10.0	20	Lentil
	Green gram	2.0	5	Green Gram
	Maize (QPM)	55.0	145	Maize
	Rice (HYV), Hybrid	20.0	93	Rice
	Wheat	10.0	24	Wheat
	Okra	1.0	6	Okra
	Cowpea	6.0	13	Cowpea
	Onion	10.0	25	Onion
	Marigold	5.0	35	Marigold
	Rose	0.4	5	Rose
	Mentha	3.0	7	Menthe
	Sugarcane	5.0	20	Sugarcane
Sheikhpura	Varietal (P9)	2.0	20	Arhar
	Arun	2.0	10	Lentil
	Laxmi	5.0	20	Mustard

2.3.3 OFT conducted

Technology tested	No. of trials	Crop	Result	Feed back
KVK, Purnea				
To find out the optimum dose of N-fertilozer for Rajma Production	04	Rajma	On the basis yield data ($N_{125}P_{50}K_{30}$) give highest yield 16.4q/ha then Comparison to Recommended does $N_{80}P_{50}K_{30}$ yield 13.9 q/ha	Introduce high yielding varities of Rajma those fixing Nitrogen in Soil. Pulses crop of Rajma varieties PDR-14 have no capacity for atmoshpheric Nitrogen fixation. The seed production is necessary for increasing area of Pulses crop of Purnea District
To find out the suitable varieties of turmeric	03	Turmeric	RS-5 give highest yield 368 q/ha as compaired to local varieties 186 q/ha.	Testing of different dose of nutrients like NPK and Micro – nutrients for higher yield The seed production is necessary for increasing area
To find out the suitable Hybrid varieties of Boro-Rice for Kosi region Zone –II	20	Boro-rice	KRH-2 hybrid variety of Bro-rice gave highest yield 66.4 q/ha as compared to local variety – 25-45.6 q/ha	KRH- 2 hybrid varieties of Boro-rice cold tolerance than other varieties of Boro-rice
KVK, Samastipur				
Short duration high yielding varietals search	4	Potato (k. Ashoka K. Jyoti K.Pukhraj K. Chipsona K.Arun)	Variety K.Arun excel over other varieties followed by (k.Ashoka, K. Jyoti, K.Pukhraj, K. Chipsona)	K.Ashoka is a short duration variety (70-80 days). It produced better yield so this is the solution of this problem.
Varietals evaluation of scented	5	Rice (R. Subhasini R. Kasturi , Sugandha - 4, Sugandha -5 , NP-49	Variety R.Subhasini and Sugandha -3 recorded highest yield and maximum percentage increase over the local variety.	R.Subhasini and Sugandha - 3 are the best scented variety for the locality.
Local specific varietal evaluation	3	Summer moong .	SML- 668 was recorded highest	SML 668 was suitable variety for

Technology tested	No. of trials	Crop	Result	Feed back
of summer moong.		(Pusa Vishal, SML – 668, NP – 18)	yield (14.29/ha) than the variety Pusa vishal (11.69/ha).It was also found that SML-668 had125.4 % higher yield than yield of check variety.	this locality.
Seed Treatment testing	2	Lady's finger (Bhindi)	It was found that the *Trichoderma* treated seeds as well as *Trichoderma* as soil application gave significantly higher results than the untreated seeds.	Seed Treatment and soil application with Trichoderma is suitable for bhindi as it gives higher results.
KVK, Begusarai				
New pesticides for the management of rust in lentil	08	Lentil	Crop gave max. yield with twice spray of Propiconazol @ 1ml/ lit	Farmer's shown inclination of Propeconazole over copper-oxy-chloride and Mancozabe
Irrigation during fruiting in Litchi	08	Litchi	Two irrigation during fruiting saved upto 64% splitting where splitting was 6.25 % in control	The irrigation during fruiting not only reduces splitting. It also enhances size and quality of litchi
KVK, Banka				
Different chemicals for pod borer of gram viz. spinosad. Endosuphan, profenofos	12	Gram	Profenofos(0.15%) resulted in maximum yield	Endosulphan proved least effective hence new chemicals be used to control Helicoverpa.
KVK, Jehanabad				
Management of wilt by non-chemical method	07	Lentil	-	-
KVK, Vaishali				
Varietal	15	Onion	Agri-found light red is superior then local	Adopted by farmers
YVM resistant varietal trails	10	Ladies finger	Arka Anamika is more resistance to YVM	
Aphid control through adjusting date of sowing	07	Mustard	Late sowing is better	
Varietal	03	Redgram	NDA 1 is superior	

Technology tested	No. of trials	Crop	Result	Feed back
			than local	
KVK, Madhepura				
Application of Rhyzobium culture in Pulses	07	Lentil	26.01% more yield	
Application of vermocompost	07	Wheat	25.37% more yield	
KVK, Muzaffarpur				
To test the performance of paddy cultivar in low land eco system	10	Paddy		
Effect of balanced fertilization in wheat under late sown condition	10	Wheat		
To assess the green gram cultivar for high yield	10	Greegram		
To assess the mustard cultivar under delayed condition	10	Mustard		
KVK, W. Champaran				
Control of yellow mosaic in green gram by IPM	04	Green gram	Satisfactory	Farmers (25%) have acquainted with the use of IPM
HYV of wheat	07	Wheat	Max. yield of Raj - 3765 was obtained	
KVK, Siwan				
Weed management in transplanted Rice with herbicides and new chemicals	01	Padyy	Pendimithadin @ 1kg/ ha pre-emergence was found superior over other treatment	75% farmers was benefited
KVK, Darbhanga				
Varietal Evaluation	08	Moong	Crop is at post harvest stage	
KVK, Munger				
Varietal trails of redgram against wilt	05	Redgram	Maximum yield (15.15q/ha) with less wilt intensity	Short duration HYV was preferred
IPM in Arhar seed treatment with Carbendazym	05	Arhar	Maximum yield (17.85q/ha) with less wilt infestation (10.42%)	Short duration HYV was preferred
IPM in Mustard	04	Mustard	Maximum yield (1585q/ha) with less disease infestation (9.15%)	Short duration HYV was preferred

Technology tested	No. of trials	Crop	Result	Feed back
IPM in Mustard against desease incidence	04	Do	2 spray of dimethoate at 0.1% at 10days interval and 2 spray of imidachlorpid @ 0.03% at 10 days interval in mustard gave high yield(15.70q/ha)	
KVK, Patna				
Control of DBM in cauliflower through intercropping	20	Cauliflower	Better yield	
Control pod borer in gram	15	Gram	Better yield	
Control of wilt and rust	18	Lentil	Cantaf and chlorothalonil most effective	
Control of vegetative grougth	12+12	Gram and lentil	50kg phosphate and 40 kg potash gives highest yield and minimizes wilting	
Response of nutrient NPK in RW cropping system	20	RW	Recommended dose of NPK	
Intencification of rice wheat cropping system	18	rice-potato-wheat rice – wheat-maize	Rice3- potato-wheat –maize cropping system is most beneficiary	
KVK, Sheikhpura				
Varietal trails	01	Cereal	-	Farmers appreciate the disease free varieties
Do	01	Oilseed	-	Farmers appreciate the disease free varieties
Do	01	Pulses	-	Farmers appreciate the disease free varieties

2.3.4 Farmer's Club Established

Name of KVK	No.	Village	Block
KVK, Samastipur	12	Madanpur, Somnaha, irauli, agdishpur, annchrukhi, Bhagwanpur,Shasan, Chakhaji, Balha,Kothia	Pusa
KVK, Sheohar	02	Jahangirpur, Dhankaur	Dumare , Katsari, Piprahi
KVK, W. Champaran	03	Dubwalia, Dhumnagar, Lal Saraiya	Majhaulia
KVK, Siwan	05	Rampur, Birabankat, Mahmadpur, Majhari Sindhurha	Bhagwanpur , Siwan, Basantpur Panchrukhi
KVK, Patna	03	Berha,Chaknawada, Moldia tola	Barh, Mokama

2.3.5 Seed villages formed

Name of KVK	No.	Seed Produced	
		Crop	Quantity In Quintal
KVK, Gopalganj	01	Potato	540
		Wheat	185
KVK, Samastipur	02	Paddy	-
	04	Potato	1210
	07	Wheat	3060
KVK, Begusarai	06	Wheat	1277.10
KVK, Lakhisarai			
KVK, Madhepura	05	Wheat	1101
KVK, Muzaffarpur	04	Wheat	135
KVK, W. Champaran	02	Sugarcane	685
		Wheat	90
		Satawar	0.55
KVK, Aurangabad	01	Rice	1050
KVK, Siwan	03	Paddy	150
		Wheat	200
KVK, Darbhanga	01	Wheat	100
KVK, Munger	07	Wheat	300
KVK, Araria	05	Wheat	1714
KVK, Patna	01	Rice	450

2.3.6 New KVKs established

Name of KVK/ Unit	Place	District	Date of establishment
KVK, Gopalganj	Sipaya	Gopalganj	April, 2006
KVK, Sheohar	Sheohar	Sheohar	March, 2006
KVK, Gaya	Manpur	Gaya	March, 2006
KVK, Aurangabad	Siris	Aurangabad	July 2006

2.3.7 Radio talks/ TV programmes

Our scientists / teachers regularly give radio and TV talks from various radio/ TV stations of the state on various topics related with agriculture and its allied branches. These talks are mainly of the farmers interest.

2.3.8 Kisan mela/ Field days organized

Name of KVKs	Kisan Mela		Field days	
	Number	No. of participants	Number	No. of participants
KVK, Purnea	4		2	
KVK, Samastipur	10	2637	09	396
KVK, Begusarai	01		04	
KVK, Saran				
KVK, Banka			03	157
KVK, Kishanganj			01	22
KVK, Bikramganj	01	175	03	
KVK, Vaishali	14	2499		
KVK, Gaya	02	1200	02	75
KVK, Madhepura	02	847	03	
KVK, W. Champaran	02	2460	03	
KVK, Aurangabad	01	500	01	100
KVK, Siwan	02	200		
KVK, Darbhanga	02	285	01	
KVK, Munger	09	7502	05	166
KVK, Araia			01	38
KVK, Patna	02	1123	10	

2.4 Seed Production

2.4.1 Total raw seed produced at Seed Processing Plant, Dholi of different Crops during, 2006-07

Quantity in Qtls.

Crop	Category of Seed				Total
	B/S	F/S	C/S	T/L	
Paddy	88.21	742.23	444.19	633.38	1908.01
Wheat	260.44	662.60	576.20	92.80	1592.04
Maize	-	61.80	157.90	-	219.70
Rape-Mustard	06.49	76.45	-	12.60	95.54
Linseed	01.00	02.43	-	-	03.43
Sunflower	00.98	-	-	-	00.98
Til	-	10.20	-	-	10.20
Arhar	-	01.50	-	-	01.50
Lentil	03.75	13.00	04.85	-	21.60
Moong	02.30	01.46	-	29.25	33.01
Chickpea	00.20	02.55	-	-	02.75
Peas	00.35	06.12	-	-	06.47
Urd	00.28	-	-	-	00.28
Rajmah	00.50	01.45	-	-	01.95
Cowpea	-	-	-	00.90	00.90
TOTAL	**364.50**	**1581.79**	**1183.14**	**768.93**	**3898.36**

2.4.2 Total quantity of seed sold from Seed Processing Plant, Dholi during Kharif, 2006-07

Quantity in Qtls

Crop	Breeder Seed	Foundation Seed	Certified Seed	Truthful Seed	Total Seed Sold
Paddy	22.055	0308.610	808.820	510.124	1649.60
Lobia	-	-	-	00.795	00.795
Naize	-	03.155	05.127	00.800	09.073
Urd	00.27	-	01.845	0	02.115
Arhar	04.20	14.027	10.393	02.290	30.910
Moong	02.25	01.410	-	26.775	30.435
Sunflower	01.552	01.215	-	00.130	02.897
Til	-	09.010	-	0	09.010
TOTAL	**30.327**	**337.427**	**826.185**	**540.914**	**1734.835**

2.4.3 Total quantity of seed sold from Seed Processing Plant, Dholi during Rabi 2006-2007

Quantity in Qtls

Crop	Breeder Seed	Foundation Seed	Certified Seed	Truthful Seed	Total Seed Sold
Wheat	247.870	593.810	549.970	122.710	1514.360
Rai/tori	02.953	35.705	0	11.047	49.705
Maize	0	53.355	96.945	07.320	157.620
Pea	00.345	05.855	0	0	06.200
Rajmah	00.500	01.415	0	0	01.915
Gram	00.200	02.490	0	0	02.690
Lentil	03.750	13.110	02.390	0	19.790
Linseed	01.270	02.475	0	0	03.745
TOTAL	**256.888**	**708.215**	**649.305**	**141.077**	**1756.025**

2.4.4 Seed Produced by KVKs

Name of KVK	Crop	Quantity in quintals		
		Foundation	Certified	T/L
Purnea	Wheat (WH – 911)			22.10
	Rajma			0.85
	Til (Krishna)			5.00
	Rajendra Oal – 1			1.80
	Turmeric (RH – 05)			1.80
	Turmeric (Rajendra Sonia)			1.63
Gopalganj	Lentil	20.00		
	Mustard	10.20		
	Wheat	97.00		
Samastipur	Potato(K.Ashoka, K.Pukhraj, K.Jyoti, K. chipsona, K.Arun)			151.40
	Pea (Azad P1)			2.92
Begusarai	Paddy			42.71
	Pigeon Pea			15.00
	Wheat			143.91
	Lentil			2.68
	Rajma			6.77
	Moong			1.50
	Rai			20.02
	Dhaicha			3.22
Banka	Paddy			204.00
	Wheat		33.00	00.00
	Potato			13.00
Bikramganj	Wheat	41.00	44.70	
	Rai		0.50	
	Paddy	125.05	59.00	134.00
	Wheat	101.00	156.00	
	Rai		1.50	
	Paddy	538.28	170.62	68.05
Vaishali	Cowpea (BR4)			2.44
	Mustard (R.Sufalam)			5.00
Bhagalpur	Wheat		107.00	
Madhepura	Paddy		225.92	
	Wheat		147.53	
	Potato		56.00	
	Oal			5.00
Muzaffarpur	Paddy		8.41	
	Mustard			0.87
W. Champaran	Rice (Rajshree)	62.00		
	Prabhat	45.00		
	Wheat (NW 2036)	25.00		
	Sugarcane	1375.00		

Name of KVK	Crop	Quantity in quintals		
		Foundation	Certified	T/L
Siwan	Wheat	109.00		
	Paddy	198.00		
Darbhanga	Paddy			50.00
	Wheat			45.00
	Lentil			8.00
	Gram			3.00
	Mustard			0.80
Araria	Paddy	90.40		
Patna	Lentil		3.31	1.07
	Gram		3.02	0.92
	Pea		2.90	
	Rai		4.80	
	Line seed		3.54	10.42
	Wheat		8.14	

2.5 PLANTING MATERIAL PRODUCED

KVK	Plant	Variety	Quantity
Purnea	Mango	Amrapali	31
		Neelam	10
		Alfanso	03
		Dashhari	01
		Langara	07
	Guava	Lalot	12
		Sangam	12
		L- 49	04
		Allahabadi Safeda	04
	Amla	Chakaiya	20
		NA	10
		NA	12
	Lemon	Kagaji	15
		Seedless	12
		Panth – C	15
	Litchi		05
Samastipur	Mango	Amrapali	2935
	Guava	A. Safeda, L.49	1300
	Litchi	China, Rose scented	18000
	Bel	NB-5	50
	Aonla	NA- 7, NA - 10	215
	Karaunda	Local	50
	Citrus	Kagji	70
	Banana	Alpan, Harichal	587
	Banana fruits	Alpan, Harichal, Malbhog	784 dozen
Vaishali	Elephant Yam	Gajendra	150q
	Mango		5058
	Litchi		200
	Guava		200
	Lemon		200

KVK	Plant	Variety	Quantity
	Banana		200
W. Champaran	Sugarcane		650q
	Mango		500
	Litchi		350
Munger	Mango		550
	Guava		07
	Litchi		41
	Lemon		06
	Jackfruit		04

STUDENTS' WELFARE ACTIVITIES

3.1 Sports Activities

During the year the sports activities in the colleges were organized under out door and indoor games as done in the previous session over and above the students (Boys and Girls) have taken the keen interest in sports activities and regular classes of games and sports are also organized and students participated in the tournament of Inter College and Inter University games at different places. The various games and sports activities during the period had the following distinctions:-

- Students of the various colleges of RAU participated the RAU, Inter College Volleyball (Men), Table tennis (Men and Women) and Athletic meet (Men and Women), held at Sports Complex, RAU, Pusa during the reported year. Two players selected in volleyball team of the University and were participated in 7th All India Inter Agricultural University Sports & Games meet held at MPUA & T., Udaipur, Rajasthan during the reported year.

- On the basis of selection trial ten players of the college, six boys and four girls were participated in the selection trial held at RAU, Pusa from 12-14th February, 2007 for selecting the University team of volleyball (Men), Table Tennis and Badminton (Men & Women) team, in which to players in Badminton (Women) has been selected and participated in 8th All India Inter Agricultural University 23-26th, February, 200.

- Nine players of the college six boys and three girls were participated in All India Veterinary Colleges Annual meet of Badminton and T.T. at Govind Ballabh Pant University of Agriculture and Technology, Pantnagar, Uttaranchal from 14_16th March, 2007 and showed their good performance

3.2 Student's Activities on the University Foundation Day 03, December, ,2006

Power point based presentation of the students of RAU Pusa was conducted on the topic "In the Technology-led agricultural development the role of RAU for the Country" in which First Prize won by Sri Pramod of CAE, Pusa, IInd prize by Ms. Rina Kumari of TCA, Dholi and IIIrd Prize by Sri Amarendra Kumar of TCA, Dholi.

3.3 Student's Activities on the World Food Day-2006

In the Elocution contest organized by RAU, Rina Kumari of TCA Dholi won First Prize and Pinky Rani of SGIDT, Patna won IInd prize.

3.4 NCC Activities

The 6/12 COY NCC Unit of Rajendra Agril. University, Pusa is running with an authorized strength of fifty five cadets and one NCC Officer. This is the only Youth organization of the University which develops character comradeship, the ideal of service and capacity for leadership in youth and energetic students providing opportunity for the cadets to participate in various activities and trainings entrusted to them. Apart from regular class and parades in which cadets were trained in the relevant course content, they also took active part in the following activities.

- Independence day celebration
- Republic day celebration
- Kisan Mela
- In different function of the Colleges and University.

3.4.1 NCC Camp Attended by cadets:

Name of the camp	Place	Period	Strength
CATC	J.N.K.V., Birawali	14-24th June,2006.	4
CATC	Darbhanga	7-18th October,2006	3

SUO Pran Mohan Kumar 'Suman' was awarded with certificate and medal for securing 2nd position in Quize competition during combined Annual Training Camp held at Darbhanga.

3.4.2 NCC Camp Attended by Officer:

i) Combined Annual Training Camp held at J.N.K.V., Birwali from 14-24 June, 2006.

ii) Combined Annual Training Camp held at Darbhanga from 7-18th October, 2006.

3.4.3 Certificate Examination

- Cadet Sandeep Kumar appeared for 'B' certificate of NCC and was declared successful.
- Officer : The NCC Officer of this Unit actively participated in conducting NCC 'B' certificate examination as member of the examination conducting committee.

3.5 NSS Works Activities at College of Agril. Engineering , Pusa.

Co-curricular activity related to Games/Sports, cultural and NSS works are regularly organised at College of Agril. Engineering. Female students are assigned the work of NSS while Male students are engaged for NCC works.

In 2006-07 six female students were assigned to study the socio economic condition of their concerned locality with regard to literacy child education, child care, Nutrition availability. They were also assigned to suggest the way of improving the drawbacks. After careful study of the locality, they were of the view that in present days most of the people are giving due attention towards child care. Only drawback was with regard to economic condition of the people, which compel the person not to give due care to their children.

3.6 Developmental Works in Hostels:

The Hostel along with accommodations, common rooms and Mess facilities have been provided to all students for Boys and Girls students separately in all campuses of Rajendra Agril. University, Bihar viz. Bihar Agril. College, Sabour, Bihar Veterinary College, Patna, Sanjay Gandhi Instt. Of Dairy Technology, Patna, Tirhut College of Agriculture, Dholi, College of Fisheries, Dholi, Mandan Bharti College of Agriculture, Saharsa, College of Horticulture, Noorsarai (Nalanda) under the control of concerned Associate Deans of the College with Warden and Hostel Superintendents.

During the reported year renovation of Hostel at Rajendra Agril. University, Pusa with PVC flooring, white washing & beautification of hostel along with plantation work has be done and plan to develop the above facilities to other colleges hostels of RAU.

3.8 Placement Cell

3.8.1 Functions of the cell

Registration of pass out U.G. and P.G. students of R.A.U. is done from various disciplines of Agriculture, Veterinary and Animal Sciences, Agricultural Engineering, Basic Sciences and Humanities, Fisheries and Dairy Technology, to facilitate them for various jobs offered by private, corporate and Government sectors and suited to their professional fields through campus interviews.

The students are trained through counselling for their confidence building and personality development. The competency for group discussion, and personal interview is cultivated among students to elevate their presentation skills during selection interviews.

Degree programmes of our university make the students technically and professionally competent and the Training and Placement cell brushes them to develop confidence, improves personality and make them socially more responsible to accept the challenges in their respective chosen field.

3.8.2 Achievements

Advertisement and registration for unemployed U.G. and P.G. pass out students of Rajendra Agricultural University, Bihar has been published in the leading Hindi and English News Papers , twice , once in June'06 and the other in July'06.

The cell has registered the students free of cost. So far 357 students in Agriculture , 116 in Veterinary and Animal sciences, 25 in Dairy Technology, 17 in Home Science,1 in Basic sciences, 27 in Agricultural Engineering and 6 in Fisheries have been registered in the Training and Placement cell.

A number of companies are in contact with the cell. Our students are getting jobs in Govt. of Bihar, Banks, Central Govt. organizations and other Universities directly. Some of the students who got job through placement cell by campus interview have been listed on the next page.

3.8.3. Placement record of students during 1.4.06 to 31.3.07

S.N..	Name of the organization /company	Name of successful students	Name of the post
	Florence Flora Lang for Garden, Banglore	1. Krishna Singh, M.Sc. Genetics 2. Dipti Srivastava, M. Sc. Genetics 3. Sulakshna Kumari	Officer Trainee, 'Marketing'
	NCMCL,Bombay	1. Kaushalendra Kumar,M.Sc.Ag., 2. PriyaRanjan ,M.Sc.Ag, 3. Deepak Kumar Patel,M.Sc.Ag. 4. Md. Izhar Alam,B.Sc.Ag. 5. Vinod Kumar,B.Sc.Ag. 6. Narendra Kumar,B.Sc.Ag. 7. Ranavay Kumar,M.Sc.Ag. 8. Sunil Kumar, B.Sc.Ag. 9. Smit Ranjan, M.Sc(Ag.)	Officer Trainee
	PRADAN	1. Anurag Kumar,Ag.Engg. 2. Niraj Kumar,M.Sc.(Ag.) 3. Thakur Prasad Mahto,M.Sc.(Ag.). 4. Amit Kumar, M.Sc.(Ag.).	Trainee Executive
	K.G.V.K.Usha Martin Tatisilwai, Ranchi	1. Vinod Kumar Singh Ag.Engg. 2. Narottam Prasad.,M.Sc.Ag.	Officer Trainee
	Dhanuka Group	1. Sanjeet Kumar,M.Sc.Ag. 2. Parshuram Yadav,M.Sc.Ag.	Officer Trainee

S.N..	Name of the organization /company	Name of successful students	Name of the post
		3. Vinay Kumar,M.Sc.Ag.. 4. Chandrashekhar Azad,M.Sc.Ag. 5. Anand Kumar Singh Arun, M.Sc.Ag. 6. Shanta Kumar Choudhary M.Sc.Ag. Ashok Kumar,M.Sc.Ag. 7. Jitendra Kumar Roy,M.Sc.Ag.	
	Excel Crop Care	1. Rabi Shankar Kumar,B.Sc.Ag. 2. Ashok Kumar, M.Sc.Ag.. 3. Sanjeet Kumar,M.Sc.Ag.	Officer Trainee 'Marketing'
	Pest Control India Limited	1. Gajendra Pd. B.Tech.Engg. 2. Alok Verma,B.Tech.Engg. 3. Veena Kumari, B.Sc. H.Sc. 4. Anil Kumar,M.Sc.Ag.Stat. 5. Narendra Kumar Singh, M.Sc. Ag. Genetics 6. Sardar Sunil Singh,Ph.D.Plant Breeding 7. Priti Kumari, M.Sc. Ag.Ento. 8. Birendra Kumar Kamat, B.Tech	Short listed for the post of Trainee
	Ranbaxy Fine Chemical Limited	1. Ravi Shankar Kumar, B.Sc.Ag. 2. Yaduvansh Narayan,M.Sc.Ag. 3. Ashwani Kumar, B.Sc.Ag. 4. Himanshu Kumar,M.Sc.Ag. 5. Ashok Kumar,M.Sc. Ag. Ento. 6. Arun Kumar,B.Sc.Ag. 7. Chndra Shekhar Azad, 8. M.Sc.Ag.Plant Pathology 9. Muzazafar Iman,B.Sc.Ag. 10. Sardar Sunil Singh,M.Sc. Ag.Genetics 11. Ganesh Kumar Bharti,B.Sc.Ag. 12. Rajnikant Pritam,B.Sc. Ag. 13. Manish Kumar,B.Sc.Ag. 14. Manoj Kumar,B.Sc.Ag. 15. Narendra Kumar,M.Sc.Ag. 16. Janki Raman, M.Sc.Ag. 17. Rajeev Kumar, B.Sc.Ag. 18. Devendra Mandal, B.Sc.Ag. 19. Mukesh Kumar, B.Sc.Ag. 20. Binod Kumar, B.Sc.Ag. 21. Satyendra Kumar Rathour, B.Sc. Ag. 22. Deo Sharan ,B.Sc.Ag. 23. Kumar Gautam Rana,B.Sc.Ag. 24. Jitendra Kumar Roy,M.Sc.Ag. 25. Prem Kishor Prasad,B.Sc.Ag. 26. Amit Kumar,B.Sc.Ag	Officer Trainee

UNIVERSITY LIBRARY

University Library, Pusa has been catering to the needs of Scientists, teachers, extension specialists, students and staff of the main campus of the university as well as scientific staff of the Research stations, Sub-stations and KVKs of the University.

I. Documents in the Library as on 31.03.2007 **55310**

II. Additions during the year: **735**

1. Books on 31.03.2006 54575
2. Books by purchase **368**
3. Documents on Gratis **324**
4. Theses by Students **43**

III. Indian Journals Subscribed in 2006: **125**

IV. Foreign Journals Subscribed in 2006: **NIL**

V. CD ROM Databases Available: **7**

1. CAB Abstracts (1984 – Present)
2. CROP CD (1973-2003)
3. CABPEST CD (1973-2004)
4. AGRIS CD (1991 – 2003)
5. AGRICOLA (1984 – 2003)
6. CABSAC (1973 – 1997)
7. Food & Human Nutr. CD (1975 – 2004)

VI. Circulation of books: **6054**

1. Books issued: **3095**
2. Books returned: **2959**

VII. No. of Readers registered during the year: **359**

1. Teachers/ Scientists : **102**
2. Students : **076**
3. UG Students : **108**
4. Staff : **073**

VIII. No. of visitors during the year:

1. Teachers/ Scientists: **2253** **14494**
2. Students and others: **12241**

IX. No. of Photocopies produced: **10125**

X. Services provided:

1. Reference & Information Service
2. Book Bank Textbook service
3. CD-ROM Based Bibliographical Ser
4. Reprographic Service
5. Users' Education

XI. Courses offered: **TW – 501 (Compulsory for PG students)**

Achievements:

1. 16 more Computer nodes for surfing INTERNET and CDROM Databases provided.
2. CD ROM Database Reference service to readers.

UNIVERSITY HOSPITAL

5.1 Number of Patients treated in University hospital

S.N.	Particulars	Numbers
1	Patients treated - Male	4287
	- Female	1795
2	Patients treated per day	25
3	Patients recommended for specialized treatment	37
4	Blood grouping/	40
5	Mass immunization	312
6	Other programmes	03
7	Dressing	605
8	Minor Operation	56
9	X-ray	45

5.2 Pathological Tests carried out

S.N.	Name of the Test	Number
1	ESR	17
2	Haemoglobin estimation	17
3	Total Leucocyte Count	56
4	Differential Leucocyte Count	56
5	Malaria Parasite	01
6	Bleeding Time	03
7	Clotting Time	03
8	Urine Routine	10
9	Stool Routine	01
10	Blood Sugar	124

5.3 Facilities Available

Sl.	Facilities available	Remarks
1	Oxygen Cylinder	Functional
2	X-Ray Machine	Functional
3	Routine Pathological Lab	Functional
4	Ambulance – One	Functional

Three special Medical camps were organized during the period under Report:

- Health Camp for Medical Checkup by Apollo Hospital, Patna
- Camp for Eye-Checkup by IGIMS, Patna
- Camp for Dental Check-up by Dental Expert from Darbhanga

DIRECTORATE OF ADMINISTRATION

- During the year under report a total of 23 Junior Scientists/ Assistant Professors were appointed under Non Plan/ Plan.
- A total of 30 non-teaching employees (14, III Grade and 16, IV Grade) were by direct recruitment.
- Seven, III Grade and 10, IV Grade employees were appointed on compensate ground during the year.

AWARDS, DISTINCTIONS AND RECOGNITIONS

- Dr. B. B. Mishra, Assoc. Prof. has been recognized as Council Member by International Union of Soil Science, in 2006 (Date of announcement July, 2006)
- Dr. B. B. Mishra, Assoc. Prof. has been recognized as Vice-Chair by Commission 1.4, IUSS In 2007 (Nominated in March, 2007)
- Dr. Chandramoni, Associate Professor has been recognized as FANA by Animal Nutrition Association, IVRI, Izatnagar in 2006 (Date of announcement 15th Sept. 2006)

ANNUAL ACOUNT OF THE UNIVERSITY

(all figures in Rupees)

Particulars	Receipts	Expenditure
State Non Plan	41,43,82,834.00	46,40,19,642.12
State Plan	8,00,13,000.00	5,90,30,620.44
ICAR	21,43,01,652.00	14,02,72,425.91
Krishi Vigyan Kendras	7,70,58,300.00	6,42,15,279.62
Miscellaneous Schemes	6,72,90,257.00	3,07,56,671.26
Other Schemes	2,07,28,119.16	1,13,01,802.69
Revolving fund	1,91,82,992.08	1,30,52,752.21
Group Insurance Scheme	21,80,064.29	22,62,386.00
University Internal Receipts	1,98,33,730.95	43,83,495.06
Remittance		1,85,46,001.86
Catch Up		15,82,498.00
TOTAL	**91,49,70,949.48**	**80,94,23,575.17**
Opening balance of the Year	22,40,39,375.39	
Closing Balance of the Year		32,95,86,749.70
GRAND TOTAL	**113,90,10,324.87**	**113,90,10,324.87**

SEMINAR / SYMPOSIUMS/ CONFERENCES/ SHORT COURSES/ TRAININGS/ WORKSHOPS ORGANIZED

- **Workshop** of *ALL INDIA CO ORDINATED PROJECT ON MICRO AND SECONDARY NUTRIENTS AND POLLUTANT ELEMENTS* from 16.8.06 to 19.8.06 organized by RAU, Pusa and sponsored by ICAR

- **Training** on *SOIL TESTING & FERTILIZER RECOMMENDATION BASED ON TARGETED YIELD EQUATION* from 31.08.06 to 14.09.06, organized by Deptt. of Soil Science, Pusa & sponsored by Deptt. of Agriculture, Govt. of Bihar

- **Training** to soil testing officers, Govt. of Bihar on *SOIL TESTING & FERTILIZER RECOMMENDATION BASED ON TARGETED YIELD EQUATION* drom 22.09.06 to 12.10.06, organized by Deptt. of Soil Science, Pusa & sponsored by Deptt. of Agriculture, Govt. of Bihar

- **Training** on *SOIL-WATER- PLANT ANALYSIS FOR KVKS PERSONAL* from 22.05.06 to 05.06.06 organized by MNS, Deptt. of Soil Science, RAU, Pusa and sponsored by ICAR

- **Workshop** on *MICRO AND SECONDARY NUTRIENTS AND POLLUTANT ELEMENTS* from 27.01.07 to 30.01.07 BVC Patna organized by RAU Sponsored by Govt of Bihar

- **Training** on *SOIL TESTING ON MICRONUTRIENT* from 4-4-06 to 6-4-06 sponsored & organized by Department of Soil Science and A.R.I.,Patna

- **Training** on *SEED PRODUCTION OF OIL SEED & PULSE* from 22.05.06 to 05.06.06 sponsored & organized by ISOPOM Sponsored Govt of Bihar and ICAR

- **Training** on *FARMERS EXTENSION WORKERS SCIENTIFIC INTERFACE* held on 9.12.06 organized by S.R.I, Pusa, Samastipur

- **6th Annual conference of Veterinary Pharmacology & Toxicology** of Indian Society of Veterinary Pharmacology & Toxicology from 23 – 25 Nov., 2006 at B.V.C., Campus organized by Bihar Veterinary College and Indian Society of Vety. Pharmacology & Toxicology (ISVPT)

- Training *on KNOWLEDGE MANAGEMENT & SKILL UP GRADATION* from 20-06-06 to 28-06-06 organized by Dr. S.P. Singh Co-ordinator MBA (Agri-Business) Programme, sponsored by NHM, Govt. of Bihar

- **Training** on *SOIL TESTING FOR MICRONUTRIENT* from 4-4-06 to 6-4-06 by A RI, Patna

- Training on *SEED PRODUCTION OF OIL SEED & PULSES* from 27 -30 Jan.,07 organized by ARI, Patna and Sponsored by Govt of Bihar

- In addition to above a large number of trainings on Beekeeping, Mushroom Cultivations, Medicinal & Aromatic Plants, Water Conservation, Farm Machines, Post Harvest Management Crop Production, Crop Protection, Seed Productions, Dairy, Fisheries, Home Science Animal Health and other Veterinary aspects are being conducted in various campuses of the University

- More than 1600 farmers have been trained for beekeeping during 2006-2007.

PARTICIPATION OF SCIENTISTS IN NATIONAL / INTERNATIONAL SEMINARS / SYMPOSIUM / CONFERENCES

- Dr. Ashok K. Singh Univ. Professor Extension Education participated in ***2nd International Rice congress*** held on October 9-13, 2006 at ICAR, New Delhi
- Dr. Ashok K. Singh Univ. Professor Extension Education participated in *International Seminar on Entrepreneurship held on* Feb,20-22, 2006 at IIT, Bombay
- Dr. B. B. Mishra, Assoc. Prof. Soil Science participated in **18th World Conference of Soil Science** held on 09-15 July, 2006, at Phillipenes,
- Dr. B. B. Mishra, Assoc. Prof., Soil Science participated in **National Seminar on balance fertilization** held on 17-18 Nov. 2006 at CSK HPKV, Palampur
- Dr. B. B. Mishra, Assoc. Prof., Soil Science participated in **UNISCO Chair in Water Resources** and held on 11-15 Nov., 2006 at Khortoun, Sudan
- Dr. C. Singh, Kukesh Kumar, B. B. Bachchoo and Dhananjay Kumar participated in **National Symposium on Buffalo For Rural Upliftment and Annual Convention of Indian Society for Buffalo Development. Mumbai** held on May 27th -30th, 2006 at Indian Society for Buffalo Development, Mumbai
- Dr. I. P. Singh, Univ. Prof. & Chairman, Dr. M.L.Agarwal, Univ. Prof., Dr. S.C. Gupta, Univ. Prof & Dr. S.P.Singh, Associate Prof Deptt. of Entomology participated in **National Seminar on sustainable Beekeeping Development and Honey Festival** held on April. 7-9, 06 at RAU, Pusa
- Dr. J. P. Singh, Sr.Scientist & Dr.M.A.aftab, Jr.Scientist participated in **workshop on Post harvest & value addition** held on 19-20 Jan'07 Horticulture Mission Tarapur, Munger
- Dr. K. Mohan, Head, Agronomy, participated in workshop on **Krishi Baniki ki upyoigita** held on July, 2006 at RC & AEB, Yadavpur University, Culcutta.
- Dr. K. Mohan, Head, Agronomy, participated in workshop on **Rain water harvesting and recycling** held on March. 2007 at Cenral Ground Water Board, Patna.
- Dr. M. K. Wadhwani, Head, Agril. Economics participated in **International conference on indigenous vegetables** held on 15-18th Dec.'2006 at ICRISAT, Hyderabad

- Dr. M. N. Jha, HOD, Microbiology, and Dr. V.K. Sharma Assoc. Professor, Genetics participated in **International Rice Congress** held from 9– 13, Oct. 06 at New Delhi
- Dr. N. Chattopadhayaya, Jr. Soil Scientist participated in **National Symposium on Soil Testing and Crop Response** organized by Project Directorate STCR, Bhopal and OUAT, Bhubaneshwar at OUAT, Bhubaneshwar from15-16 March, 2007
- Dr. P. K. Jha, Junior Scientist ,Plant Pathology attended National Symposium **on "Plant Pathogens:Exploitation and Management"** from 16-18th Jan.,07 at Rani Durgavati University, Jabalpur
- Dr. R. K. Sinha, Sr. Scientist Soil Sc., Dr. Dilip Kumar, Jr. Scientist & Dr. Brajesh Shahi, Jr. Scientist participated in **Workshop on micro nutrient** held on 15-20-Sept.06 at Department of Soil Sc. R.A.U. Pusa.
- Dr. R. P. Pandey, B. Singh, M. P. Singh, M. P. Sinha, R. Yadav participated in **National Symposium** and XXII Annual Convention on Innovative Technologies for Fertility enhancement in Livestock in 2006.
- Dr. R. P. Sharma, S. K. Pathak, R. N. Jha K. R. Raman and N. Chattopadhyaya participated in National symposium on conservation and management of agro-resources in accelerating the food production for 21st country held at IGKV, Raipur (Chhatishgarh) from 14 -15 Dec..2006
- Dr. R. P. Sinha & Dr. S.P.Gupta, Sr. Scientists participated in **2nd ,Bihar Science Congress** held on 24-27 Feb 07 at I-G-Planetarium, Patna organized by Science and Technology Department, Govt. of Bihar
- Dr. S. K. Chaudhary, Asstt. Professor, Agronomy participated in **Second International Rice Congress held on** October 9-13, 2006 at ICAR New Delhi
- Dr. S. K. Pathak, Sr.Scientist participated in **National Symposium on conservation and management of Agro-resource in accelerating the food production for 21st century** held on 14-16 Dec., 2006 at Indira Gandhi Krishi Visvavidyalaya (IGKV), Raipur (Chhattisgarh)
- Dr S. K. Singh, Junior Scientist, Plant Pathology, attended **National Seminar on Integrated production and Post – harvest Management of Tropical Fruits at** BCKV Kalyani (WB) from11-12 April, 2006
- Dr. S. P. Gupta, Sr. Scientist participated in **All India seminar on " Development of Agro-based chemical Industries"** held on 17-18 Feb.,07 at Patna organized by The Institution of Engineers (India), Bihar

- Dr. S. P. Gupta, Sr. Scientist participated in Focus Bihar Food Processing **Industries-Back ward & forward linkage** held on 22-23 Dec, 2006 at B.I.A, Patna organized by BIA, Patna
- Dr. S. P. Gupta, Sr. Scientist participated in **National seminar on environment protection & sustainable development** held on 10-11 March, 2007 at Hotel Maurya, Patna organized by Pollution control board, Patna & Deptt. of Environment, Govt. of Bihar
- Dr. V. K. Sharma Assoc. Professor participated in **National Symposium on Enhancing Agril. Production in region** at IARI, Pusa held on 17th October, 2006
- Dr. V. Kumar, Sr. Scientist, Agronomy participated in **Seminar on Participatory irrigation management on efficient water management** held on April 27-28, 2006 at Koshi CADA, Saharsa
- Dr. V. Kumar, Sr. Scientist, Agronomy participated in **Seminar on Rojgar Unnayan men jal prabadhan ki bhumika** held on December 22-23, 2006 at WTCER, Bhubaneswar
- Dr. V. P. Singh, Director, Dr. P. K. Singh, Sr. Scientist, Plant Breeding & Dr. S.S. Pandey, Chief Scientist & Head, Sugarcane Breeding participated in **All India seminar on "Development of sugar industry in Bihar and sugarcane planting method including intercropping and biological control of weed pest and diseases"** held on 24-25 March,2007 at Patna organized by Sugarcane Technologist association of India

PARTICIPATION OF SCIENTISTS IN SHORT COURSE/ TRAINING/ SUMMER SCHOOLS/ WINTER SCHOOLS/ REFRESHER COURSES

- Dr. B. B. Mishra, Assoc. Prof. participated in **Training on GIS and Remote Sensing** held on 20.03.2007 to 9.04.2007 at NBSS & LUP, Nagpur
- Dr. B. B. P. Sinha, Sr. Sc.(Rice Pathology) participated in **Training on Rice Production Technology** held at D.RR. Hyderabad
- Dr. G. P. Dwivedi Sr.Scientist, & Dr. Birendra Kumar participated in **Establishment of mass production unit for biocontrol agents** held on 28 Nov. to 5 Dec.2006 at Directorate of Biological control (ICAR), Bangalore
- Dr. P. K. Singh, Sr.Scientist,Plant Breeding participated in **Winter school on "current strategies in sugarcane Breeding & genetics"** held on 21 Nov.to 11 Dec.2006 at S.B.I. Coimbatore (Tamilnadu)
- Dr. S. N. Prasad, Univ.Prof., Soil Science participated in **Rain water harvesting and artificial recharge to ground water** held on 08.03.2007 organized by Central Ground Water Authority and Central Ground Water Board, Patna
- Dr. S. N. Roy, Sr.Scientist, Entomology participated in **Winter School** held on 5-26th Dec.'2006, at G.B.Pant Univ. of Agril. & Tech., Pant nagar
- Dr. S. P. Gupta, Sr. Sc. participated in **Summer School** held on 5-25 Sept, 2006 at ICAR Research Complex for NEH Region, Meghalaya
- Dr. V. Kumar, Sr. Scientist participated in **Training on Technological Advances for watershed management** held on November 19-26, 2006 at WTCER, Bhubameswar
- Dr. V. K. Sharma Assoc. Professor participated in **Summer School** held on 18 Aug., -7 Sept., 2006 at GBPUA&T, Pantnagar

PARTICIPATION OF SCIENTISTS IN WORKSHOPS/ GROUP MEETINGS

- Dr. A. K. Misra, Sr. Scientist and Dr. S. K. Chaudhary Asstt. Professor participated in **Annual Rice Group Meeting** held during 14-17 April, 2006 at Directorate of Rice Research, Hyderabad
- Dr. A. P. Singh, Chief Scientist and Dr. K. Choudhary, Sr. Sci. participated in **Group Meeting** held on May, 2006 at IISS, Bhopal
- Dr. D. K. Dwivedi, Junior Scientist, Agronomy attended Group Meeting of **AINP on betelvine** From 21-23rd Nov.,06 at AAU, Jorhat
- Dr. D. K. Dwivedi, Junior Scientist, Agronomy attended **Group Meeting of AINP on Medicinal and Aromatic plants** from 30 Oct. to 2nd Nov.,2006 at PDKV, Akola
- Dr. J. Prasad & Dr. G. K. Mishra, Chief Scientist, participated in **Group meeting of STCR** held on 2-3 Nov., 2006 at IASRI, New Delhi
- Dr. K. N. Pathak participated in **45th All India Wheat & Barley Workshop** held on 21 Aug. 2006 at AICRP on Wheat / DWR Kanpur
- Dr. M. K. Wadhwani, Head participated in **Strategic live stock project's inception workshop** held on 25-06 April,06 at CIMMYT, INDIA,RWC, NARS Complex Pusa, New Delhi
- Dr. Pawan Kumar, Sr. Scientist (Pulses) participated in **Annual group meeting of Scientist working on Linseed & sun flower** held on 16-18th Augut,06 at N.D.A.U.F. Faizabad (U.P.)organized by D-O-R- Hyderabad
- Dr. Pawan Kumar, Sr. Scientist (Pulses) participated **in Annual group meeting of Scientist working on chickpea & MULaRP, Linseed** held on 12-14 Sep,06 at M.P.K.V. Rahuri (Maharastra) organized by I.I.P.R. Kanpur
- Dr. Pawan Kumar, Sr. Scientist (Pulses) participated in **New Project on seed system in legume held on** 26th May, 2006 at Krishi Bhawan I.C.A.R., New Delhi
- Dr. R. P. Sharma Chief Scientist participated in **Annual Workshop of AICRP on Cropping System** held on 26-29 June, 2006 at GBPUA&T, Pantnagar
- Dr. R. S. Choudhary, Sr. Scientist, Entomology participated in **Group Meeting of workers on AICRP on vegetables** held on 22-25th April at U.A.S., Dharwar (Karnataka)
- Dr. S. K. Chandra & Dr. S. P. Singh, participated in **4th Akhil Bhartiya Sukshma aur Poshak Tatwa Workshop** held at R.A.U, Pusa.

- Dr. S. K. Chandra, C.S.S.O participated in Bijgram Workshop held on 21.1.07 at R.A.U, Pusa.
- Dr. S. K. Chaudhary Asstt. Professor participated in **Annual Kharif Group Meeting on forage crops** held on May 03-05, 2006 at PAU, Ludhiana organized by GFRI, Jhansi
- Dr. S.K. Jain, Associate Prof. participated in Annual workshop of AICRP on GWU held at JNKVV, Jabalpur in May 2006
- Dr. S. K. Pathak, participated in 41st Annual Rice Group Meeting held on 14-17 April, 2006 at ANGRU, Hyderabad
- Dr. S. K. Thakur, Jr. Scientist, Soil Science participated in **Xxiv workshop of AICRP on micro & polluted nutrients and polluted elements in soil and plants** held on 16 to 19 Sept., 2006 at RAU, Pusa
- Dr. S. K. Singh, Junior Scientist ,Plant Pathology attended **Biennial Group Discussion of AICRP(TF)** from 7-10 April, 2006 at BCKV, Kalyani (WB)
- Dr. S. N. Roy, Sr.Scientist participated in **Group Meeting of workers on AICRP on STF** held on 2-4th Jun.'2006 at M.P. Univ. of Agril. & Technology, Udaipur (Rajasthan
- Dr. S. P. Gupta, Sr. Scientist participated in **Workshop** held on 5th June, 2006 at Hotel Chanakya, Patna organized by Confederation of Indian Industries, Patna
- Dr. S. S. Pandey, Dr. Harendra Singh, Dr. G.P.Dwivedi , Dr.Birendra Kumar & Dr. S. K. Thakur participated in **Biennial workshop of AICRP on sugarcane** held on 16-19 Oct.06 at GBPUA&T Pantnagar
- Dr. V. K. Sharma, Assoc. Professor participated in **Group Meeting** held on 15th October, 2006 at RAU, Pusa
- Dr. V.N. Sahai, Dr. R.K.P. Sinha, Dr. B.P. Sinha & Dr. Ajay Kumar, participated in **42nd Annual Rice group meeting** held on 8-11April,2006 at ANG RAU, University, Hyderabad organized by DRR & ICAR New Delhi

PUBLICATION

13.1 Research papers published

1. Alam, I., Sinha, K.K., Kumar, S and Kumar V.2006. Effect of nitrogen level on N, P and K uptake by wheat genotypes. Environment & ecology. 245 (4) : 1217-18
2. Alam, I., Sinha, K.K., Kumar, S. and Kumar, V. 2006. Effect of nitrogen level on N, P. and K uptake by wheat genotypes. Environment & ecology. 245 (4) : 1217-18
3. Alam, Irshad., Sinha, K.K. , Kumar, Sunil and Kumar, V. 2007. Effect of nitrogen levels on N.P. and K uptake by wheat *(Triticum aestivum.)*. Indian J. Agron Si(3). 193-198. 2006
4. Azmi, N. Y., Singh, A. P., Choudhary, K., and Ismail, M.2006. Effect of intensive cropping and fertility levels on depth wise distribution of available sulphur. *Ann. Pl. Soil Res.* 8, 115-118.
5. Azmi, N. Y., Singh, A. P., Choudhary, K., and Ismail, M.2006. Long term influence of fertility levels and management practices on sulphur nutrition to crops*Ann. Pl. Soil Res.*, 8, 106-111.8, 106-111.
6. Bharti, V., Nandan, Ravi and Kumar, V. 2007. Yield/Quality assessment economics and irrigation requirement of winter maize based inter cropping system. R.A.U. J. Res. 16(1-2):1-4
7. Bharti, V., Nandan, Ravi, Kumar, V and Kumar, S.B. 2007. Effect of irrigation on yield, water use efficiency and water requirement of winter maize based intercropping. Environ. & Eco.25(4).888-892
8. Bharti, V., Nandan, Ravi, Kumar, V. and Pandey, I.B. 2007. Effect of irrigation levels on yield water use effic iency & economics of winter maize *(Zea mays)* based intercropping system. Indian J. Agron.S2(1). 27-31
9. Chand, Hari, Singh, S.P.N. and Singh, R. 2007. Comparative performance of honey bees species *Apis mellifera* and *Apis cerana indica* . Proc. National Seminar, Sustainable Beekeeping Develop. & Honey Festival, 7-9. April, 2006 . 65-67
10. Chaudhary, S. and Dayaram. 2006. Influence of environmental factors or yield and contaminants of *Pleurotus sajor caju* . J. Mycol. Plant Pathol.37(1) : 127-129
11. Chaudhary, S.K., Thakur, S.K. and Pandey A.K. 2007. Response of wet land rice to nitrogen and zinc. Oryza . 44 (1) : 31-34

12. Chaudhary, S.K., Thakur, S.K. and Thakur, R. B. 2006. Effect of sources and methods of nitrogen application on growth, yield and N uptake of transplanted lowland rice and their residual effect on succeeding wheat. Indian journal of Agronomy. 51 (1) : 1-2

13. Choudhary, D.K & B. Singh 2006 *Activity and abundance of insects visiting Peach, Prunus bargica L. at Bihar* J.Root Crops Abstracts: 15 P

14. Dayaram, Jha, M. N. and Singh, J. P. 2006. Fruit rot of custard apple caused by Botryodeploidia thesbromae sacc. – A new record. Indian Phytopathology . 59 (4)

15. Deo, S. 2007. Effect of mordant on colour produced with spathedea flowers Textile trend XLIX (10) 29-30

16. Gupta, S.C. and Misra, A.K. 2006. Management of okra shoot and fruit borer, *Earias vitella* Fabr. Through bio-rational insecticides. *Pesticide Research Journal*. Vol. 18(1): 33-34.

17. Hussien, Temam., Mishra, B. B. 2006. A new parasitic weed (*Alectra vogelii*) similar to Striga on groundnut in Ethiopia. Tropical Science (UK). 46(3): 139-140

18. Idris, J. and Singh, P.P. 2007. Comparative efficiency of various synthetic insecticides and neem prdocuts against stem borer on maize in Bihar. R.A.U. J. Res. 17 (1-2): 104-105

19. Jha M.N. and Prasad, A. N. 2006. Efficacy of inexpensive Cyanobacterial biofertilizer including its self life World J. of Microbiology and Biotechnology 22: 73-79

20. Kashayap, S. N. 2007. Anthropometric data for designing interior for elderly people. The journal of Asian Regional Association of Home Sc. 14: 243-251

21. Kashayap, S. N. 2006. Ergonomics assessment of activities performed by farm women with traditional equipments in terms of heart rate and energy loss. RAU J. Res.16: 149-151

22. Kiran, Sharma, S.G. and Singh, S.P. 2006. Effect of monocrotophos and butachlor or N-fix in cyanoboctria and associated biochemical studies. *Annals of Plant protection sciences*. 14 (i), 210-214

23. Kumar ,V., Gosh, B.C., and Singh, S. K.2007. Utilization of manure and crop wastes for Augmenting crop productivity and soil fertility in ground nut rice cropping system. International Journal of Tropical Agriculture. 25 (1-2) 237-43

24. Kumar, Ajay C. Singh and A.P. Singh. Sept. 2006. Circulating concentration of Zinc in crossbred cows and heifers. The Indian Journal of Animal Science. 76(9): 700-701.

25. Kumar, Ajay; Singh, C. and Singh A.P. 2006. Circulating concentration of zinc in crossbred cows and heifers. *Indian Journal of Animal Sciences*. 76 (9): 700-701.

26. Kumar, B; Pandey, S.S. and Kamat, D.N. 2006. Choice of ideal sugarcane choice for North Bihar. Indian Sugar. 54 (11) : 43-48

27. Kumar, Binay. and Agrawal, M.L. 2006. Use of different and bait coimbinations against *Bactrocera dorsalis* (Hendel) (Diptera: Tephritidae). Shashpa .13 (1): 18-21

28. Kumar, L. Sinha, S.R.P. Sinha, S. Kumari, P and Verma, S.B. 2006. Comparative efficacy of Sulphadimidine and combination of Meteronidazole and Furazolidone against coccidiosis in kids in Patna. Indian Veterinary Journal. 83: 323-324.

29. Kumar, M. and Singh, B. 2006. *Population dynamics of insects visiting Fenil, Foenieum vulgar L.* J. Root Crops. 49-51 pp

30. Kumar, N., Singh I.P. and Singh, R. 2007. A study on floral fidelity of *Apis mellifera* nd. *Apis cerana indica*. Proc. National Seminar on Sustainable Beekeeping Develop. & Honey Festival, 7-9. April, 2006. 20-23

31. Kumar, N., Singh, R. and Singh, I.P. 2007. Quantitative and qualitative evaluation of pollen loads of *Apis mellifera* and *Apis cerana indica* Proc. National Seminar, Sustainable Beekeeping Develop. & Honey Festival, 7-9. April, 2006. 39-44

32. Kumar, P. Sinha, S. R. P. Sinha, S. Kumari, L and Jaychandran C. 2006. Effect of atoxic higher dose of different acaricides on temperature, pulse and respiration rate of tick infested dogs. Indian Journal of Veterinary Research. 15:51-56

33. Kumar, R. & R.P. Sinha (2005). Published June.06.Induced Genetic variation in Lentil J. applied. Biology.15(2):1-6

34. Kumar, Ranjeet & B. Singh 2006. *Foraging behaviour of insect visitor on spong gourd, Luffa Cylindrica L. flkowers*. J. Root Crops 43-48 pp

35. Kumar, Sunil, Agarwal, M.L. and Bharti, R.C. 2006 . Studies on the infestation of fruit fly *Bactrocera latifroins* (Hendel) toi berries of *solanum indicum* Willd . RAU J. Res. 16 (1-2): 66-69

36. Kumari, Dimple Madhurendra & N. Prasad. 2006. Effects of Anaerobiosis an activities of alcohol dehydrogenase in roots of maize. Ann. Pl. Soil Res. 8:185-186

37. Madhurendra, N Prasad & S.G. Sharma.2006. Cellulose activities in different pleurotus species under solid state fermentation of barley straw based substrate. Mushroom Research .15:41-43

38. Mandal, K. Sanjay Kr. And K. Yadav. 2007.Interaction effect of Rhizobium, VAM and phosphate levels on nutrients uptake by chick pea. Journal of Research (R.A.U.).Vol.17(1-2).85-88

39. Mandal, K., Kr., Sanjay And Yadav, K. 2007. Nodulation and revival of acid tolerant mung bean rhizobia in acid soils.Indian Journal of Pulses Research. Vol.1 19(1),121-123

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41. Mandal, S.K. and Gupta, S.C.2006. Screening of okra cultivars against *Earias vitella_PL. Protec. Sci.* 14(1): 248-249

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43. Mandal. S.K, Sah, S.B., Gupta ,S.C. 2006. Phytotonia Effect of Biopesticide and Insecticide Combination on okra *Environment & Ecology*. 245(3A) & 843-845

44. Mishra, A.K., Singh, S.P.N., Pandey, I.B., and Singh, R.S.2006. Management of sweet potato weevil (Cylass formicarious Fab). J.Root Crops. 32(2): 180-186

45. Mishra, B.B. 2006. Photopedogenesis: Concept & Application J. Food Agric.Environ (Finland) 4(2). 12-14

46. Misra, A.K; Singh, S.P.N., Pandey, I.B. and Singh, R.S.2006 Effect of Agronomic composition and mass trapping for the management of sweet potato weevi (*Cylas formicarius* Fab) J.Root Crops 32 (2): 180-186

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49. Pathak, S. K., R. N. Jha, S. B. Singh and R. P. Sharma . Effect of integrated nutrient management on productivity and energetics in maize-wheat cropping system. Journal of Farming System Research and Development. 11(2): 201-207

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52. Prasad, N. and RPK Roy. 2006. Viscometric and Volumetric studies of binary liquid mixtures of N, N-dimethylamine and halomethanes. Int. J. Chem. Sci. 4:197-806

53. Prasad, R.B., Shobha Rani & D. Kumar, &R.P. Sinha.2006.Knowledge attitude & constraints in adoption of zero tillage in wheat cultivation 16:(1-2)78-81

54. Sarkar, S. R. . 2007. Preference of apparel and dress material by the tribal girls .Textile trend XLIX (111)29-31

55. Sarkar, S. R. .2006.Laundry practices of cotton saree by the tribal women. RAU Journal of Research. 16 (1-2) 146-148

56. Sharma, R. P, K. R. Raman, S. K. Pathak and N. Chattopadhyaya. 2006 Effect of Crop establishment methods and tillage practices on crop productivity, profitability and soil health of rice-wheat cropping system Journal of Farming System Research and Development. 12(1&2):42-46

57. Sharma, R. P, S. K. Pathak, K. R. Raman and N. Chattopadhayaya .2007.Enhancing productivity and profitability of rice-wheat system through site-specific nutrient management in south Bihar alluvial plains Journal of Farming System Research and Development. 13(1):107-113

58. Shobha Rani, D.Kumar & R.B. Prasad.2006.Factors affecting acceptance of Biogas stove by rural women RAU J Res. 16:(1-2):74-77.

59. Singh, A. K. & Kumari Bhavna.2006.Identification of some physiological traits for salinity tolerance in rapeseed. R.A.U; J. Res.16 (1-2) 122-125

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62. Singh, A. P., R. S. Sah, R. B. Singh, M.H. Akthar, G.P. Roy, C. Singh and Vivek Kunj. June 2006. Response of mineral mixture, parjana and GnRH on serum biochemical constituents and conception rate in anoestrus buffalo. The Indian Journal of Animal Reproduction. 27 (1):51-54

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biochemical constituents and conception rate in anoestrus buffalo. The Indian Journal of Animal Reproduction. 27 (1):51-54

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65. Singh, Ashok K. & M.N. Ansari. 2006. Viewers preferences about different components of farm programs, *Environment and Ecology* . 2, 449-452
66. Singh, P. P. and Yadav, R.P. 2007 Effect of insecticides and phytoproducts as soil treatment on stem fly-wilt complex, nodulation and yeidl parameters in field peas .Food Legumes. 20(2):198-200
67. Singh, S. B. & Kumari, S. 2006 Genetic association of morpho-physiological traits in bread wheat RAU Journal of Research V.16(1) & 2, pp 21-25
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70. Singh, S. P. & Dwivedi, D.K. 2006. Impact of zinc, Boron and Iron on yield & economics of ginger. International Journal of Agriculture Science. V.3(1) : 136-138
71. Singh, S. P., Sanjay Kumar & N.K.Singh. 2006. Efficacy of synthetic pyrethroids against *E.Vikklla in okra* . *Annals of Plant Protection sciences.* 14(2), 473-475
72. Singh, Smriti Dhananjay Kumar and C. Singh. January- June 2007. Hemograms and other blood constituents of tigers and leopard kept in captivity.INTAS POLIVET. 8 No. 1: 39-44
73. Sinha, A. K, S. Chaudhary & A.K. Singh. 2006. Association & among yield attributes under different condition wheat (Triticum aestivuml). 2nd. Jr. of Genetics & Plant Breeding. 66(3):233-234
74. Varshney, S. K., Singh, B. and Kumar, Anil. 2007. Nutrient management in True Potato seedling transplanted crops in Bihar. Annals of biology. 12(1):27-29
75. Varshney, S. K., singh, B., Yadav, L.M., and Pandey, P.C. 2007. Performance of TPS progeny in alkaline –saline soils of Bihar plains. Annals of Agri Bio. Research. 12(1):31-33

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78. Wadhwani, M. K.. 2007. Economics and production & post-harvest management of pointed gourd under Diara eco-system of lower Gangetic plains. International Jr. of Hort. Res. Acta Horticulturae. 752. PP153-156
79. Wadhwani, M.K .2006.Production and post-harvest management of vegetable in western region of U.P.SAARC Jr. of Agriculture. 4, 2006 pp.141-157

13.2. Papers presented in seminars / symposiums

1. Anupama Kumari Evaluation of different crop Establishment Techniques for increasing the yield of transplanted rice. In National Symposium on conservation Agriculture and Environment 26-28 Oct.06 at BHU, Varanasi
2. Deo, S. & S. R. Sarkar Significance of natural dyes in preserving eco system National seminar on environmental degradation and its impact on indigenous culture and economy need at Guwahati Sep 2006
3. Hari Chand, Singh, S.P.N. & Singh, Ramashrit Comparative performance of honeybees species *Apis Mellifera* and APIS *Cerana Indica. Nat. Sem.* on *Sustainable Beekeeping development* 7-9 April,06,RAU,Pusa
4. Hari Chand; Agrawal, M.L. and Singh, S.P.N. Studies on comparative honey yield potential of Apis mellefera and Apis cerana Indica under stationary and migratory beekeeping. Nat. Sem. On Sustainable Beekeeping Development 7-9 April,06,RAU,Pusa
5. Jha, P.K. & Kumar, V. Eco friendly Management of Root-Rot & Yellow Vein Mosaic of Okra in National Symposium on "Plant Pathogen : Exploitation & Management" organized by Indian Phytopathological Society & Rani Durgavati University, Jabalpur, from16-18th Jan.,07
6. Kashayap, S. N. Assessment of environmental parameters of old age homes. International ergonomics conference of HWWE 2007 at Central Institute of Agril. Engg., Bhopal
7. Kashayap, S. N. Gender equity & sustainable development National seminar on serving farmers & saving farming Indian imperative of Global Perspective at college of Home Sc. ,Jan . 10-12

8. Kumar, Arbind Disease Scenario in rice crop established by different rice crop establishment methods. 2nd international Rice Congress jointly Organized by CRRI India & IRRI Philippines at IARI New Delhi
9. Kumar, Arbind Integrated management of diseases of some important medicinal plants. U.G.C. sponsored National Seminar on management of medicinal & Aromatic plants at R.L.S.Y. College Bakhtiyarpur Patna.
10. Kumar, Arbind Survival of *Helminthosporium sativum* P.K & B in plant debris, diseased seeds and leaves 59th Annual meeting of the Indian phytopathological Society & National Symposium on Plant Heath, Global Wealth at Rani Durgawati University Jabalpur(M.P.)
11. Misra, A.K, SPN Singh & H.Chand , Incidence of *Varroa jacobsoni and Apis mellifera* colonies in Bihar in National seminar on sustainable beekeeping development t 7-9 April,06,RAU,Pusa P-59
12. Misra, A.K, S. P. N. Singh and Vijay Kumar , Management of insect and non-insect pests of deep water rice in Bihar in 2nd International Rice Congress 2006, at NAAS, IARI, New Delhi from 9-13 Oct.,06
13. Prasad, N. Ultrasonic study of solute solvent interaction of some nitrate compound in non-aqueous media 15th National symposium on Ultrasonic, 2006 November 01-03, 2006 held at Physics Department, Allahabad University
14. Prasad, R. B.. Conversation Agriculture in 94th Indian Science Congress 2007 Chennai(TN) Jan.0 3-07-2007
15. Sahai, V. N. Genetic improvement for rain fed lowland Rice in Bihar India, 2nd International Rice Congress a-13 Oct.2006
16. Sharma, R. P. S. K. Pathak, R. N. Jha and N. Chattopadhyaya, Diversification of existing rice-wheat cropping systems for sustainable productivity under irrigated conditions National symposium on conservation and management of agro-resources in accelerating the food production for 21st country held at IGKV, Raipur (Chhatishgarh) from 4 -15 Dec.
17. Sharma, V.K., Nilanjaya and V.K.Shahi Influence of male sterility inducing cytoplasm on agronomic characters in hybrid rice 2nd International Rice Congress, New Delhi
18. Singh, A.K. P.K. Sinha Studies on performance of bread wheat genotypes under rain fed situation in Bihar 2nd Bihar Science Congress 2007 Feb.26-28-2007
19. Singh, A.K., R. P. Sinha & R. K. P. Sinha. Studies on performance of Bread wheat genotype in rainfed situation in Bihar 2nd Bihar Vigyan Congress Tara-mandal, Patna 26-28 Feb.07

20. Singh, Ashok K. Performance of compatible varieties of Rice in different land situations of North Bihar, *2nd International Rice congress* held at New Delhi, October 9-13, 2006
21. Singh, Meera Empowerment of rural women through Bee Keeping Platinum Jubilee International Conference at Lady Irwin College, New Delhi
22. Singh, R. Pesticide contamination in honey in National Seminar on Agrochemicals in Water & beverages: Myth, Reality & Remedy, Society of Pesticide Science, New Delhi 16th Nov, 2006
23. Singh, S.K. and P.K. Ray Studies on banana bunchy top virus (BBTV) in relation to climatic factors and vector population. Presented in National Seminar on "Integrated Production and Post harvest management of Tropical Fruits" Organized by AICRP (Tropical Fruits) from 11-12 April, 2006
24. Singh, S.K. and P.K. Ray Susceptibility of banana varieties to Panama wilt caused by *Fusarium oxysporum* f. sp. *cubense*. Presented in National Seminar on "Integrated Production and Post harvest management of Tropical Fruits" 11-12 April, 2006, Organized by AICRP (Tropical Fruits) at Trichy
25. Sinha, R.K.P & A.K. Singh, Disease and insect pressure in different rice crop . Establishment- an over view. Indo-gangetic plains of Bihar IN 26th (RRC, 2006) at New Delhi (9 -13 Oct. 06)
26. Sinha, R.K.P & B.K. Singh Zero tillage & reduced tillage boost up rice crop yield in Indo-gangetic plains of Bihar 26th (RRC, 2006) at New Delhi (9 -13 Oct 06)
27. Sinha, R.P. P. Kumar & R.N. Singh Performance of chickpea genotypes in tal area of Bihar 94-Session, Indian Science congress of Chennai (T.N.) Jan.03-07-2007.
28. Suman, S.N. and Thakur, S.K., Effect of sludge on sorption of cadmium in calcareous soils 71st Annual Convention of Indian Society of Soil Science and National Seminar on development of Soil Science 2006 at Bhubaneswar from 10-13 Nov., 2006
29. Wadhwani, M.K. Economics and production & post-harvest management of pointed gourd under Diara eco-system of lower Gangetic plains in International conference on Indigenous vegetables organized by ICRISAT, Hyderabad 15-18 Dec, 06.

13.3.Books published

- **Adhunik Madhumakhi Palan** by H. Chand and Ramashrit Singh Published by Kalyani Publisher
- **Beekeeping in Bihar** by Drs. H. Chand and Ramashrit Singh Published by RAU, Pusa
- **Diseases of Fruits and its control** by Dr. B.B.P. Sinha Published by Vatayan, Frazer Road,
- **Mali Margdarshika** by Mr. Anil Kumar Singh Published by KVK, Vaishali
- **Techniques of preservation** by Ms.Veena Shahi Published by KVK, Vaishali
- **Watershed Hydrology- 2nd Edn.** by Dr. R. Suresh Published by Standard Publisher Distributor, Nai sark, New Delhi
-
- फल उत्पादन बहुधा पूछे जाने वाले प्र न राय पी० के० एवं एस० के० सिंह रा० कृ० वि० , पूसा,
- केला उन्नत उत्पादन प्रौद्येगिकी एच० पी० सिंह, पी० के० राय एवं एस० के० सिंह राजेन्द्र कृषि विश्वविद्यालय, पूसा,

13.4. Book Chapters

1. Agarwal, M.L. (2006) Indian Dacini (Diptera:Tephritidae) and their management in Integrated Pest Management and Biocontrol published by Pointers Publisher., Jaipur
2. Ashok K. Singh(2007) Perceived Constraints of Rural Entrepreneurs related with their Income Generating Enterprises: A Perspective of Bihar State in Developmental Aspect of Entrepreneurship
3. Dayaram and O.P. Chaturvedi(2006) Shisham mortality in Bihar: extent cause and management In Shisham and Kikar mortality in India Published by Agro Tech Publishing Co., Udaipur
4. Kumar, M. , Kumar, H. & Dayaram (2006) Strain improvement in oyster mushroom (*Pluerotus spp.)* in Microbial diversity Published by Daya Publishing House

Our scientists have contributed numerous chapters/ articles in books and Souvenirs published by the Publication Division of the University.

13.5.Laboratory Manuals published

- Laboratory Manual for Soil-Plant-Water Analysis by A. P. Singh, R. R. Singh, J. Prasad and Ghanshyam
- Training manual of Beekeeping for beginners by Ramashrit Singh

13.6. Technical bulletins published

- A Report on Agri-Expo,2006
- Cultivation of Quality Protein Maize + Potato Intercropping
- Improve Technique of rice
- Mitti Janch Ewam Poshak Tatv Prabandhan
- Mitti Janch Ke Adhar Par Urvark Ki Anushansha
- Mushroom Production
- New method of paddy cultivation by low cost Technology
- Save crop by using Trico derma viridi
- Save crop by IPM
- Soil test Calibrated Fertilizer recommendation Schedules Based on Target Yield Concept
- Souvenir Honey Festival
- Timely Sowing of Wheat Through Zero tillage
- बिहार की जलआच्छादित एवं बंजर भूमि की उपयोगी
- फसल खस
- बिहार की नम दलदलीय क्षेत्रों में बच की वैज्ञानिक

13.7.Folders published

- Arahar ki vaigyanik kheti
- Artificial Insemination for desired breed and high milk potential
- Clean milk production Why and How ?
- Dalhano ki paidawar badhane men rhizobium culture ka mahatwa
- Dhan ki vaigyanik kheti
- Improved cultivation of rice
- Kechua khad ki uttam vidhi
- Mitti Namoona lene ka tareeka
- Mrida prikshan kyo aur kaise
- Poultry farming for self employment
- Proper feeding importance during animal breeding

- Rai, tori, sarso ki vaigyanik kheti
- Samekit Poshak Tatwa Prabandhan
- Santulit poshan prabhandan se sthai kheti ka labh
- Scientific management of Cow and buffalo
- Urea molasses mixture best feeding for growing animals
- Urea treated dry fodder is best fodder in less expenditure
- Ussar bhumi men acchhi phasal kaise ugayen
- Vermicompost utpadan taknik
- Vigyaniko dwara kheti karne ke uchit tarikon ka pramarsh
- Zero tillage machine Dware gehu ki kheti

13.8.Leaflets published (1.4.06 to 31.3.07)

- मधुमक्खी पालन
- केंचुआ खाद एवं इसकी उपयोतगिता
- गुलाब गेंदा और ग्लैडियोलस फूलों की वैज्ञानिक खेती
- जीरो टिल डि,ल से गेहूँ की बुआई
- उर्वरक में मिलावट की जॉच
- बीजोचार
- जैविक कृषि क्यों और कैसे
- ब्रायलर मुर्गी पालन : एक लाभकारी व्यवसाय
- बकरी पालन : एक लाभकारी व्यवसाय
- दूध में मिलावट एक शुद्धता की जॉच
- पशु एवं मुर्गों के लिए टिकाकरण तथा दुधारू गाय एवं भैंस के लिए दाने की मिलावट
- पशुओं के प्रमुख रोग एवं उपचार

- Amrood Utpadan Ki Suniyojit Unnat Takneek
- Aam Utpadan Ki Suniyojit Unnat Takneek
- Aam Utpadan ki vaigyanik taknik
- Chana, Moong , Masoor utpadan ke liye jaivik utpadan
- Dhan ki Adhunik Utpadan hetu SRI VIDHI
- Dhan ki krishi pranali
- Ganna ke lalsar rog: karan aur nidan
- Ghehun

- Mitti ka namoona kaise le
- Precision farming of bottle gourd crop
- Precision farming of Brinjal Crop
- Precision farming of Okra Crop
- Precision farming of pointed gourd crop
- Sabji utpadan ke adhunik kheti
- Scientific cultivation of wheat
- Zero Tillage Dwara Gehun ki Buwai

13.9. Popular articles published

1. Mishra, G.K. (2006) Samekit Poshak Tatwa Prabandhan Se Urvarak Ki Bachat. Krishi Prashikshak 27-28
2. Prasad, J. (2006) Mitti Janch Ke Aadhar Par Urvarak Ki Anusansha. Krishi Prashikshak 22-24
3. Choudhary, K. (2006) Paudhon men sukshm poshak tatwon ki kamee ke lakshan ewam sudhar ke upay. Krishi Prashikshak 29-30
4. Choudhary, K. (2006) Paudhon men sukshm poshak tatwon ki kamee ke lakshan ewam sudhar ke upay. Krishi Prashikshak 29-30
5. Yadav, K. (2006) Rhizobium ziwanu khad se urvarak ki bachat. Krishi Prashikshak 38-39
6. Kumar, M. & R. R. Singh (2007) Soil of Bihar : Physical constraints and remedies. Souvenir (36 years of excellence) RAU 73
7. Mishra, B.B. (2006) Land use planning in the productive land forms of Bihar. Souvenir on MNS Workshop 16-19 Sept, 2006
8. Pandey, R. K. (2006) Anna phasalon ke liye jiwanu khad in Kisan Mitra (Mrida Janch), Prasar Siksha Nidesalaya 18-19
9. Pandey, R. K. (2006) Micro organism – their role in agro-ecosystem in Souvenir on MNS Workshop 16-19 Sept, 2006
10. Prasad, R. (2006) Kshariye ewam lawaniye mittiyon ka sudhar in Kisan Mitra (Mrida Janch), Prasar Siksha Nidesalaya 20-24
11. Prasad, R. (2006) Ussar bhumi sudhar ki vaigyanik vidhi in Krishi Prashikshak 36-37
12. Singh, R. R. (2006) A quick look to soil science in Bihar in Souvenir on MNS Workshop 16-19 Sept, 2006
13. Singh, R. R. (2006) Amliye mittiyon ka sudhar ewam phasal utpadan in Kisan Mitra (Mrida Janch), Prasar Siksha Nidesalaya 7

14. Singh, R. R. (2006) Sukshm Poshak Tatwon Ka Mahatwa Ewam Mittiyon Ka Astar in Krishi Prashikshak 31-33
15. Singh, R.R. & B. B. Mishra (2007) Soil Science Research in Bihar in Souvenir (36 years of excellence) RAU 43
16. Laik, Ranjan (2006) Effective utilization of natural resources for organic farming in Souvenir on MNS Workshop 16-19 Sept, 2006 11-16
17. Laik, Ranjan, Dr. R.R. Singh and Kaushlendra Kumar (2007) Soil Carbon Sequestration by Conservation Agricultrue in Souvenir (36 years of excellence) RAU 69
18. Laik, Ranjan, R.R. Singh & Kaushlendra Kumar (2007) Soil Carbon Sequestration by Conservation Agricultrue in Souvenir (36 years of excellence) RAU 69
19. Tiwari, S. (2006) Mitti Janch Kyon Kaise Aur Kahan in Krishi Prashikshak 25-26
20. Tiwari, S. (2006) Mitti ke namuna lene ke tarike ewam uski taiyari in Kisan Mitra (Mrida Janch), Prasar Siksha Nidesalaya 49-50
21. Tiwari, S. (2006) Mrida Men Asantulit Poshak Tatwa Ka Prabandhan in Adhunik Kisan 2,3,4 page 37
22. Tiwari, S. (2007) Role of GIS in Agricultural Research in Souvenir (36 years of excellence) RAU 67
23. Singh, A. P. (2006) Fertility status of soils of Bihar with special reference to micronutrients in soils and their management for higher crop production.
24. Singh, A. P., Choudhary, K and Prasad, A.N. (2006) Micronutrient research in Bihar. in Souvenir, 24th Annual Workshop, AICRP on Micro- and secondary nutrients and pollutant elements in soils and plants. pp 11-16.
25. Singh, A.P and Dr. R. R. Singh (2007) 36 years of soil science research of RAU in Souvenir (36 years of excellence) RAU 47
26. Singh, A.P Singh (2006) Mittiyon men sukshm poshak tatwa ewam gandhak prabandhan. Krishi Prashikshak 34-35
27. Singh, A.P Singh (2006) Mittiyon men sukshm poshak tatwa ewam gandhak prabandhan. Krishi Prashikshak 34-35
28. Singh, A.P Singh (2006) Mittiyon men sukshm poshak tatwa prabandhan in Kisan Mitra (Mrida Janch), Prasar Siksha Nidesalaya 3-5
29. Singh, A.P. & R. R. Singh (2007) 36 years of soil science research of RAU. Souvenir (36 years of excellence) RAU 47
30. Singh, A.P., Choudhary, K. and Ghanshyam (2006) Phaldar brikshon me boron ka prabandhan. *Adhunik Kisan* 35 (2,3,4) : 64-66

31. Suman, S.N. & Thakur, S.K. (2006) Phasal Utpadan Men Gandhak Ka Mahatava . Adhunik Kisan 35 (6) : 53-55
32. Thakur, S.K. & Suman, S.N. (2006) Ekh Utpadan Men Jaivik Khad Ka Mahatva. Adhunik Kisan 35 (7) : 25-27
33. Vibha, Kumar, A. and Mishra, K.K.(2007) Mushroom : Prospects for future growth. Indian Farmer's Digest, January,07

13.10 Other publications

- Souvenir: 3 Decades of achievements of RAU
- Souvenir: World Food Day (Investment in Agriculture for food security)
- Souvenir (Agri- Fest, 2007): 36 Years of Excellence
- Audhunik Kisan Diary
- RAU News Letter
- Adhunik Kisan Patrika
- Krishi Prashikchak

DIGNITARIES AT THE STATION /COLLEGE/ UNITS

1. Dr. B. C. Mal, Professor, IIT Kharagpur visited CAE, Pusa on 17.01.07
2. Dr. D. M. Wargle, Scientist, CBRTI, Pune and Dr. MS Reddy, Gen. Secretary, AIBA, Bangalore University visited KVK, Muzaffarpur on 27/03/06
3. Dr. G. C. Tiwari, ADG, Extn, ICAR, New Delhi visited KVK, Gaya on 02/09/06
4. Dr. G. C. Tiwari, ADG, ICAR, New Delhi visited Pusa on 23.06.06
5. Dr. M. B. Verma Director Woman Institute of Technology, LNMU, Dharbhanaga visited CAE, Pusa on 19.12.06
6. Dr. Mathura Rai, Director, IIVR, Varanasi visited KVK, Muzaffarpur on 13/08/06
7. Dr. N. L. Srivastava, IAS (Retd.), Chairman, GRT visited KVK, Saran on 09/12/06
8. Dr. P Das, DDG, Extension, ICAR visited KVK, Vaishali on 25/04/06
9. Dr. P. Das, DDG, Extn, ICAR and Dr. A. K. Singh Zonal Coordinator visited KVK, W. Champaran on 27/04/06
10. Dr. Pitam Chandra, ADG visited CAE, Pusa on 17.01.07
11. Dr. Prem Kumar, Minister, PHED, Govt. of Bihar visited KVK Gaya on 22/09/06
12. Dr. Ramanand, Sr. Project Officer, Planning Commission New Delhi visited KVK Gaya on 20/02/07
13. Dr. S. Maiti, Project Director, NRC MAP & Betelvine visited RAU on 13-14th May,06
14. Dr. S. Patil, Director, IARI, New Delhi visited Pusa on 8.9.06
15. Dr. S. Prasad, Professor , IIT Kharagpur visited CAE, Pusa on 17.01.07
16. Dr. S. Tiwary, Ex. Prof. & Directore Research , Kanke, Ranchi visited CAE, Pusa on 17.01.07
17. Dr. S.P. Ghosh, Dr. N.K. Mohan, Dr. P. Parvatha Reddy, Dr. S.V. Sarode, Dr. O.P. Parekh and Dr. S. Maiti members of QRT Team of AINP on Betelvine visited on 7-9th Sept.,06
18. Dr. T.S. Rajput, Principal Scientist , WIC, IARI, New Delhi visited CAE, Pusa on 17.01.07
19. Dr. V. B. Patel, IARI, New Delhi visited Pusa on 26..8.06
20. Members of QRT team of Honeybee visited University Apiary on 7.10.06
21. Miss Vandana Preyashi, DM, Siwan visited KVK, Siwan on 24/06/06
22. Sri A. K. Singh, MLA, visited KVK Gaya on 23/12/06
23. Sri A. K. Choudhary, FGO, IFFCO Foundation visited Food Science Lab factory BAC, Sabour on 13.03.07

24. Sri Gautam Singh, Minister of Industry, Govt. of Bihar visited KVK, Saran on 23/12/06
25. Sri Gautam Singh, Ministry of State for Industries, Govt. of Bihar visited KVK, Saran on 23/12/2006
26. Sri Manik Chandra, MLA, Local visited KVK Siwan on 31/03/07
27. Sri Prabhu Singh, MP, MaharajGanj visited KVK Siwan on 28/06/06
28. Sri Pramod Singh, Technical Officer NHRDF, Patna visited Food Science Lab factory, BAC, Sabour on 24.04.06
29. Sri Prem Swaroop, Technical Officer NHRDF, Patna visited Food Science Lab factory BAC, Sabour on 26.06.06
30. Sri R. K. Roy, Sr. Inspecting Officer, FPO, Kolkata visited Food Science Lab factory BAC, Sabour on 10.12.06
31. Sri S. K Negi, Commisioner, Magadh Range visited KVK Gaya on 10/02/07
32. Sri S. Sidhoo, IAS, MD, Women development Co., Bihar visited KVK, Saran on May 12, 2006.

LIST OF RESEARCH PROJECTS IN OPERATION

15.1 List of All India Co ordinated Research Projects

S.N.	Name of the Project	Name of P.I.	Place of operation
1.	AICRP on S.T.C.R.	Dr. J. Prasad	Pusa
2.	AICRP on M.N.S.	Dr. A.P. Singh	Pusa
3.	AICRP on Rice	Dr. N.K. Singh	Pusa
4.	AICRP on Weed Control	Dr. D. Singh	Pusa
5.	AICRP on Agrometerology	Sri A. Sattar	Pusa
6.	AICRP on Tropical Fruits	Dr. P.K. Rai	Pusa
7.	AICRP on E.C.F.	Dr. N.K. Choudhary	Pusa
8.	AICRP on Agroforestry	Dr. D.K. Das	Pusa
9.	AICRP on Honey Bee	Dr. R. Singh	Pusa
10.	AICRP on Sugarcane	Dr. S.S. Pandey	Pusa
11.	A.I.N.P. on Betelvine	Dr. D.K. Dwivedi	Pusa
12.	AICRP on Water Management	Dr. A.K.P. Singh	Pusa
13.	A.I.N.P. on Biofertilizer	Dr. M.N. Jha	Pusa
14.	AICRP on Post Harvest Technology	Dr. M. Shrivastava	Pusa
15.	AICRP on Farm Machinery	Dr. A.P. Mishra	Pusa
16.	AICRP on Ground Water Utilization	Dr. S.K. Jain	Pusa
17.	AICRP on Maize	Dr. R. Prasad	Dholi
18.	AICRP on Pigeonpea	Dr. R.P. Yadav	Dholi
19.	AICRP on MULLaRP	Dr. R.P. Yadav	Dholi
20.	AICRP on Chickpea	Dr. R.P. Yadav	Dholi
21.	AICRP on Tuber Crops	Dr. C.P. Singh	Dholi
22.	AICRP on Potato	Dr. L.M. Yadav	Dholi
23.	AICRP on Spices	Dr. S.P. Singh	Dholi
24.	AICRP on Oilseeds	Dr. R.K.Akhauri	Dholi
25.	AICRP on Sunflower	Dr. R.K. Akhauri	Dholi
26.	AICRP on Small Millets	Dr. R.S. Rai	Dholi
27.	AICRP on Breeder Seed Production	Dr.S.K. Varshney	Dholi
28.	Seed Technology Research	Dr. S.K. Varshney	Dholi
29.	AICRP on Rice	Dr. A. K. Roy	Sabour
30.	AICRP on Sub-Tropical Fruits	Dr. U. S. Jaisawal	Sabour
31.	AICRP on Vegetables	Dr. D. N. Choudhary	Sabour
32.	AICRP on Wheat	Dr. Nitish De	Sabour
33.	AICRP on Cropping System Res.	Dr. R. P. Sharma	Sabour
34.	AICRP on Rice	Dr. V. N. Sahai	Patna
35.	AICRP on Castor	Dr. Pawan Kumar	Patna
36.	AICRP on Linseed	Dr. Pawan Kumar	Patna
37.	AICRP on Chickpea	Dr. Pawan Kumar	Mokama
38.	AINP on Betelvine	DR. R.K.P.Sinha	Patna
39.	AICRP on F.M.D.	Dr. C. Jaichandran	Patna
40.	AICRP on Improvement of Feed Resource	Dr. C. Singh	Patna
41.	AICRP on Jute	Dr. M. Rohman	Katihar

15.2 Ad-hoc research projects in operation

S. No.	Name of the Project	Name of P.I.	Place of operation
1.	Popularization of extra short duration Mungbean cultivars for poverty Alleviation and Improved Nutrition in Bihar and Rajashthan, India	Dr. Ravi Nandan TCA, Dholi	T.C.A., Dholi.
2.	Developing cropping systems for enhanced production of quality fodder in flood prone areas of Gangetic basin in Bihar"	Dr. R.P.Sharma, BAC, Sabour	BAC, Sabour
3.	Augmentation of pig fertility with boor semen following batch farrowing.	Dr. R.P.Pandey, BVC, Patna	BVC, Patna
4.	National Network in Integrated Development of Jatropha and Karanja financed by NOVOD.	Dr. M.S.Ali, RAU,Pusa	RAU,Pusa
5.	Adhoc Scheme entitled "Survey of Street Food, Indigenous & Imported Food Products and Consumers" under World Bank assisted capacity building project.	Dr. Meera Singh, RAU, Pusa	RAU,Pusa
6.	Networking project on wilt crops under pigeonpea,	Dr.J.P.Upadhyay, TCA, Dholi.	T.C.A., Dholi.
7.	Network project for Management of Alternaria blight in Brassica Juncea and Vegetable Crops	Dr. Ravi Nandan, TCA,Dholi.	T.C.A., Dholi.
8.	Adhoc Project on " A study on the economic of production and marketing of improvement Medicinal & Aromatic Plants in Bihar"	Dr. Om Prakash R.A.U., Pusa	R.A.U., Pusa
9.	Effect of Distillelr Effluent on Soil Crop and Ground Water.	Dr. M.Alam, S.R.I., Pusa.	S.R.I., Pusa.
10.	Centrally Sponsored Scheme-National Horticulture Mission	Dr. R. A. Choudhary T.C.A.,Dholi.	T.C.A., Dholi.
11.	Project on "Seed Production in Agricultural crops and Fisheries".	Dr. S.K.Varshney, T.C.A., Dholi.	T.C.A., Dholi.
12.	Application of Micro organism in Allied Sector.	Dr. V.K. Shahi F.B.S.H., Pusa	F.B.S.H., Pusa
13.	Tissue culture crop spices of Bihar.	Dr. V.K. Shahi F.B.S.H., Pusa	F.B.S.H., Pusa

15.3 Foreign aided projects

S.N.	Name of the Project	Name of P.I.	Place of operation
1.	The United State Agency for International Development (USAID) Project on Accelerating the tillage revolution in Indus-Ganges basin by CYMMIT.	Dr. M. Kumar	Pusa
2.	International Fund for Agriculture Development (funded by IRRI-IFAD)	Dr. Ashok K. Singh	Pusa

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