

BAU

At a Glance

2019



BIRSA AGRICULTURAL UNIVERSITY

KANKE, RANCHI - 834006, JHARKHAND (INDIA)

Website: www.bauranchi.org

MAJOR HIGHLIGHTS

- The existing intake capacity in UG courses has been increased from 116 (2015-16) to 490 (2018-19). 7 new colleges in Agriculture, Horticulture, Agril. Engineering, Fisheries Science & Dairy Technology has been started in last 3 years. University also started UGC approved 16 courses of diploma, advanced diploma, certificates and B. Voc. in various subject with 25 intake capacity in each course in 2018-19.
- Under UG programmes of Agriculture, Veterinary, Forestry, Horticulture, Agril. Engineering, Fisheries Science & Dairy Technology, altogether 922 students admitted against intake capacity of 1003 and 208 students obtained degree during last 3 years.
- Under PG programmes of Agriculture, Veterinary & Forestry, altogether 300 students admitted against 513 intake capacity and in Ph. D. programmes 31 students were admitted against intake capacity of 61 and 170 PG & 22 Ph. D. students obtained degree during last 3 years.
- Under M.Sc. in Biotechnology programmes, altogether 46 students were admitted and 36 students were obtained degree during last 3 years.
- Under M.Sc. in Agribusiness Management programmes, altogether 34 students were admitted and 28 students were obtained degree during last 3 years.
- University organized its 6th convocation in Feb., 2019, in which altogether 501 students received their UG, PG & Ph. D. degrees in Agriculture, Veterinary & Forestry. Out of which 20 were given University Gold medals for obtaining highest OGPA in their respective faculties.
- Students of the University every year participated in ICAR sponsored national level AGRISPORTS & AGRIFEST. University organized 1st Chancellor Table Tennis Trophy Tournament. Also organized 4-days 1st Jharkhand Inter University Youth Festival & about 300 students from 8 Universities in 19 events of music, dance, literary, theatre & fine arts were participated.
- University developed two new varieties of Linseed viz. Divya (BAU-06-03) & Priyam (BAU-2012-1), which is released & recommended by CSRC. University also developed one variety of Ragi (Birsam Marua -3), two varieties of Soybean (Birsam Soybean -3 & Birsam soybean -4) & one variety of Groundnut (Birsam Groundnut -4) in 2019. University also developed & released Jharsuk breed of Pig & Jharsim breed of Poultry, which has become very popular among rural peoples of Jharkhand state. University has hosted 5 Annual Group meet/Workshop of ICAR sponsored AICRP projects & about more than 700 National & International scientists were participated. University adopted tribal people dominated Nagri & Ekaba village of Kanke block of Ranchi for developing as model village and established Aloe vera vilage at Deori of Nagri block of Ranchi by distributing 6 thousand planting materials & other inputs under TSP programme.
- Seed producing centres (DSF, NSP, ZRS, KVKs & Gauria Karma, Hazaribag) of the University producing altogether 228703.22 q. Breeder seeds, Foundation seeds & Certified seeds of Cereals, Pulses, Oilseeds & Commercial crops in last 3 years. Altogether 264 samples of seeds were tested in Seed testing lab. & on an average 83 per cent samples found satisfactory.
- 16 KVKs of BAU conducted 330 On Farm Trials (OFTs) and 31,678 front line demonstrations (FLDs) on crops and 12,429 FLDs on livestock and other activities and altogether 47,927 farmers were benefitted. Altogether organized 4263 training courses for rural youth, practicing farmers/farm women and extension functionaries in which about 1,46,171 beneficiaries were participated. Also organized 478 training programmes on ARYA, Livestock, Bee Keeping, Integrated Farming system, Nutrition & Home Garden, Value Addition, Lac Cultivation and Protected Cultivation and 42,514 farmers were participated.
- 16 KVKs of the University organized altogether 426 programmes on PPV & FRA, World Soil Health Day, Swachhta Hi Seva, Sankalp Se Siddhi, Mahila kisan Divas, Kisan Divas, PM Kisan Samman Nidhi, Kisan Sammelan, PMFBY & Agricultural Knowledge in Rural School, in which 93,484 farmers are participated.
- 64700 soil samples were tested covering 3631 villages and distributed 264333 soil health cards and about 3,90,292 advisories were send to farmers of the state through SMS portal and 26,98,569 farmers are benefitted.
- Efforts were made on 16 interventions by KVKs in ICAR-NICRA project. 4604 demonstrations were conducted in an area of 1,929 ha. 163 demonstration on Poultry (Jharsim), Goat (Black bengal), Pig (Jharsuk), Duck (Khakhi campbell) and fish (Rohu & Mrigal) were conducted and 1929 farm families were benefitted.
- Also organized 5074 preventive vaccination, 198 animal health camp and established 431 seed bank, 35 fodder bank, 556 commodity groups and 1209 custom hiring centre.
- 2281 farmers benefitted from veterinary advisory services, 21,494 cases of livestock were treated and 6,439 diagnostic test services were provided to the farmers. University produced 1,30,841 pkts. of Rhizobium culture, 1,13,042 pkts. of PSB culture, 40,782 pkts. of Azotobacter culture, 114 kg BGA and 10 q. of Azolla to meet the demand of State Govt., NGOs and farming community.

Smt. Droupadi Murmu

Governor of Jharkhand



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Message

It gives me immense pleasure to know that Birsa Agricultural University (BAU), Ranchi is bringing out new edition of Information Brochure named as "BAU at a Glance-2019".

Birsa Agricultural University (BAU), Ranchi is one of the prestigious Agricultural Universities in the country which has all the infrastructure and expertise to emerge as a pioneer of agricultural development in Jharkhand. This University is committed for pursuing quality education so as to create and maintain academic excellence in the field of Agriculture & Allied sciences. The emphasis on research pertaining to development of high yielding varieties of agricultural crops, agro-forestry models, hybrid breeds of pig, chicken & integrated farming system and dissemination of technology and knowledge at grass root levels for adoption of new and innovative technologies aiming at doubling farmer's income should be the top most priority.

I commend best wishes for successful publication of "BAU at a Glance-2019" and also to the Vice chancellor and his team for their efforts.

Ranchi: Nov, 1st, 2019.

(Droupadi Murmu)





Dr. R.S. Kureel
Vice – Chancellor



Birsa Agricultural University
Kanke, Ranchi – 834 006 (India)



Foreword

Birsa Agricultural University the only agricultural university of Jharkhand, it was established in 1980 with mission to develop human resource in agricultural and animal sciences and appropriate technologies for Socio – economic development, social emancipation, skill development, technological advancement, food and nutritional security, employment & income generation and environmental sustainability.

We are producing around 55.00 lakh tonnes of food grains as against the requirement of 65.00 lakh tonnes. There is deficit of 10.00 lakh tonnes of food grains. However, we are vegetable surplus state. Therefore, transformational changes are required to bridge the gap and benefitting small and marginal farmers especially tribals and other weaker sections in the society are possible by utilizing unfolded immense opportunities in the field of agricultural sectors. The cultivable land is 38.00 lakh ha area, while cultivation is held in 28.00 lakh ha area and state has about 14.61 lakh ha Rice fallow area. Therefore, about 25.00 lakh ha area is to be brought under cultivation. The State has very high potential of oilseeds & pulses particularly, rapeseed, mustard, chickpea & soybean. Similarly minor millets like Marua, Jowar & Bajra have excellent potential. Besides, there are numerous opportunities for enhancing production, productivity and profitability in agricultural sectors through technological interventions, knowledge empowerment and timely availability of inputs support services.

The strength of Jharkhand in horticultural crops (fruits, vegetables, flowers & medicinal plants), livestock (goat, pig, sheep and poultry) and fishery need to be tapped by diversification of agriculture, cluster approach with value addition, food processing & marketing etc.

The University with its faculties of Agriculture, Veterinary Science & A. H., Forestry, Biotechnology, Agricultural Engineering in University campus and 7 other constituent colleges spread over in Godda, Hansdiha (Dumka), Deoghar, Gumla, Garhwa, Khuntapani (Chaibasa), three Zonal Agricultural Research Stations at Darisai (East Singhbhum), Chianki (Palamu) and Dumka and 16 Krishi Vigyan Kendras working in different districts with the support of Indian Council of Agricultural Research is constantly promoting agricultural education, research & extension mechanism and input support services from State Govt. to bring significant improvements in livelihoods and food security.

The booklet of BAU at a Glance-2019 includes the overall work of the university, its essential features, institutional setting with future thrust. I thank all my colleagues immensely, who have contributed to bring this booklet.


(RS Kureel)



CONTENT

Sl. No.	Particulars	Page No.
1.0	Introduction	1
2.0	Mission, Mandate, Goal and Set up	2
3.0	Academic Programme	4
4.0	Doubling Farmer's Income Programme	13
5.0	Visits & Recognitions	14
6.0	Research Highlights	15
7.0	Extension Activities	25
8.0	Seed Production	29
9.0	Model Village	30
10.0	Centre for Agribusiness Management (CABM)	30
11.0	Business Planning and Development Unit	31
12.0	Rural Agricultural Work Experience(RAWE) Programme	31
13.0	Student Amenities, Programmes & Activities	33
14.0	Seminars/Workshops/Conferences	34
15.0	Awards & recognitions	35
16.0	Publications	36
17.0	Colloboration and Linkages	36
18.0	Future Thrust	37
19.0	Name, Designation, Telephone no., Mobile no. & E. Mail ID of Senior Officers/Officials of Birsa Agricultural University, Ranchi	38



1.0: Introduction



Agricultural education was first started in Bihar in 1945 with the establishment of Bihar Agricultural College at Sabour in the district of Bhagalpur. Later on, it was realized that the agricultural situation and features of the plateau region of South Bihar is different from the rest of Bihar. Hence there was a need of a second college for this region. Ranchi Agriculture College was established in 1955, Ranchi Veterinary College in 1961 and College of Forestry in 1980. Considering the importance of agricultural education for the agricultural development of the state, the first Agricultural University in Bihar – Rajendra Agricultural University was started in 1971 with its headquarters at Pusa, Samastipur (Bihar). In 1980, Birsa Agricultural University (BAU), Ranchi was established through an act of the legislature of Govt. of Bihar and formally inaugurated by the then Prime Minister of India Late Smt. Indira Gandhi on 26th June, 1981, which was later adopted by the Govt. of Jharkhand.

The University was named as Birsa Agricultural University (BAU) in the honour and memory of the outstanding and well known freedom fighter, Bhagwan Birsa Munda, who rendered remarkable selfless service for the benefit of poor tribal people.

The University has 11 Colleges on various disciplines like Agriculture, Horticulture, Agricultural Engineering, Forestry, Veterinary Science, Biotechnology, Dairy Technology & Fisheries Science, three Zonal Research Stations at Dumka, Darisai (East Singhbhum) and Chianki (Palamu) and 16 Krishi Vigyan Kendras in 16 districts of the state. The University also has a Seed Production Farm at Gauriyakarma, Hazaribag and Center of Agribusiness Management under Faculty of Agriculture in University campus, Ranchi.





2.0: Mission, Mandate, Goal and Set up

2.1: Mission

To develop human resources in Agricultural and allied sciences, and generate appropriate technology to reduce poverty and hunger through enhanced food and nutritional security, income generation and ecological sustainability.

2.2: Mandate

1. Develop academically qualified human resources through graduate, post-graduate & doctoral programmes and other academic programmes.
2. Conduct basic, strategic and need – based, area – specific research in Agriculture, Veterinary Sciences & Animal Husbandry, Forestry, Biotechnology, Dairy Technology and Fisheries Sciences to develop and refine technologies relevant to the farming community of Jharkhand state for livelihood security and increase in farm income and profits.
3. Help the State to optimize the use of inputs and exploit the genetic potential of crops, tree species and livestock resources.
4. Encourage and promote the application of need based and farmer friendly agricultural technologies through entrepreneurship development for significant improvement in farmer's income through various extension education and training programmes.
5. Organise need based training programmes for officials & extension functionaries of state departments, progressive farmers, private and non-governmental organisations (NGOs).
6. Develop and actively associate in collaborative linkages with state Government, National and International Organisations for improvement of the current scenario of agriculture & allied activities.
7. Provide need-based technical guidance and training for the development of modern agriculture practices in the state.

2.3: Goal

To develop, refine and implement improved farmer-friendly technologies through basic, strategics, applied and adaptive research in Agriculture, Veterinary & Animal Husbandry & Forest Sciences to enhance production & productivity, nutritional security and profitability without causing any adverse effect on natural resources and environment by fostering multi-disciplinary approach.

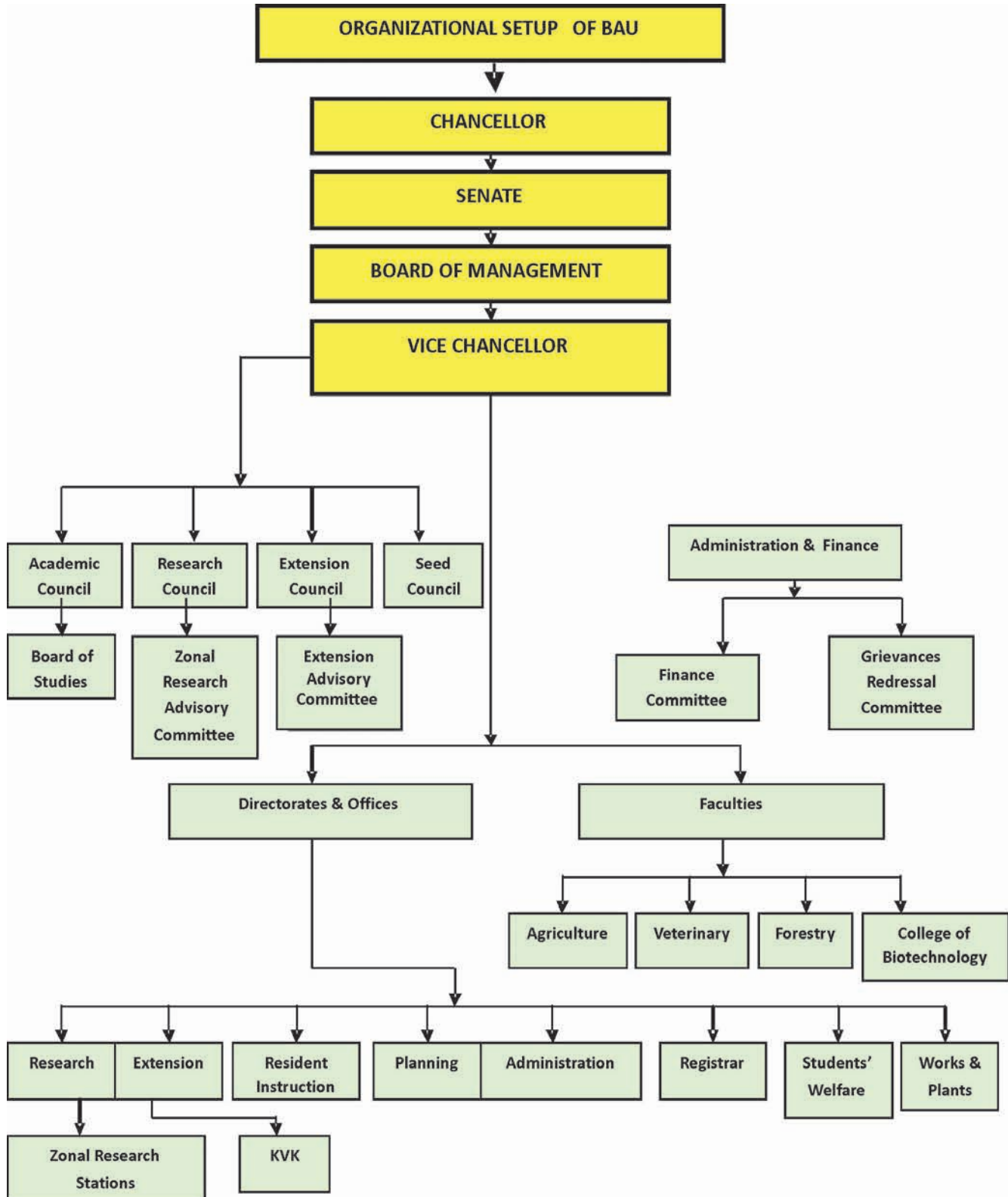
2.4: Organisational set up

The Organisational set up of Birsa Agricultural University is depicted in Fig. - 1

BAU with its headquarters at Kanke, Ranchi has five colleges i.e. Agriculture, Veterinary Science & A. H., Forestry, Agricultural Engineering and Biotechnology, which are spread over an area of 606 ha. Six new colleges of Agriculture (Deoghar, Godda and Garhwa), Horticulture Sciences (Khuntpanu, West Singhbhum), Fisheries (Gumla) and Dairy Technology (Hansdiha, Dumka) are also set up in last three years under the jurisdiction of the University. In addition to this , the University has altogether 1437 ha of land including 850 ha at Gauria Karma Farm, Hazaribag. It has about 160 ha of land at different KVKs and 168 ha at three Zonal Agricultural Research Stations.



Fig. 1 - ORGANISATIOJNAL SET UP OF BAU





3.0: Academic Programme:

3.1: Colleges & Intake

Sl.	Name of College & Place	Intake Capacity		
		U.G.	P.G.	Ph.D.
Faculty of Agriculture				
1.	Ranchi Agriculture College, Kanke, Ranchi	80	62	16
2.	College of Agriculture, Garhwa	50	-	-
3.	Rabindra Nath Tagore College of Agriculture, Deoghar	50	-	-
4.	Tilka Manjhi College of Agriculture, Godda	50	-	-
5.	College of Agricultural Engineering, Kanke, Ranchi	40	06	-
6.	College of Horticulture, Khuntpani, W. Singhbhum	50	-	-
7.	College of Biotechnology, Kanke, Ranchi	-	12	-
8.	Center of Agribusiness Management, Faculty of Agriculture, Ranchi	-	30	-
Faculty of Veterinary & A.H.				
9.	Ranchi Veterinary College, Kanke, Ranchi	60	35	06
10.	College of Fisheries Science, Gumla	30	-	-
11.	Phulo Jhanho College of Dairy Technology, Hansdiha, Dumka	30	-	-
Faculty of Forestry				
12.	Ranchi Forestry College, Kanke, Ranchi	50	24	01
Total Intake Capacity		490	169	23

3.2: Degrees Offered

3.2.1: Undergraduate Programmes

Sl. No.	Faculty	Programmes
1.	Agriculture	(a) B. Sc. (Hons.) in Agriculture (b) B. Sc. (Hons.) in Horticulture (c) B. Tech. in Agriculture Engineering
2.	Veterinary Science & Animal husbandry	(a) B.V.Sc. & A.H. (b) B.Tech. in Dairy Technology (c) B.F.Sc.
3.	Forestry	(a) B. Sc. (Hons.) in Forestry

3.2.2: Post-Graduate Programmes :

I. Doctoral Degree Programme (Ph.D.)			
A. Faculty of Agriculture (Ph.D. Agril.)			
1.	Agricultural Economics	6.	Plant Pathology
2.	Agricultural Extension Education	7.	Genetics & Plant Breeding
3.	Agronomy	8.	Soil Science & Agril. Chemistry
4.	Horticulture	9.	Entomology
5.	Agriculture Physics & Meteorology		
B. Faculty of Veterinary & A.H. (Ph.D. Vety.)			
1.	Livestock Production & Management	6.	Veterinary Pharmacology & Toxicology



2.	Veterinary Gynaecology & Obstetrics	7.	Veterinary Physiology
3.	Veterinary Medicine	8.	Veterinary Surgery & Radiology
4.	Veterinary Anatomy	9.	Veterinary Animal Husbandary Extension Education
5.	Veterinary Pathology		
C. Faculty of Forestry (Ph.D. Forestry)			
1.	Silviculture & A-gro-forestry		
II. Master's Degree Programme			
A. Faculty of Agriculture (M.Sc. Agril.)			
1.	Agricultural Economics	7.	Genetics & Plant Breeding
2.	Agricultural Extension Education	8.	Horticulture
3.	Agricultural Entomology	9.	Mycology & Plant Pathology
4.	Agronomy	10.	Soil Science & Agril. Chemistry
5.	Agriculture Physics & Meteorology	11.	M. Tech. (Agriculture Engineering)
6.	Agriculture Statistics	12.	MBA (Agribusiness)
B. Faculty of Veterinary & A.H. (M.V.Sc.)			
1.	Animal Genetics & Breeding	9.	Veterinary Parasitology
2.	Animal Nutrition	10.	Veterinary Pathology
3.	Livestock Production & Management	11.	Veterinary Pharmacology & Toxicology
4.	Veterinary Biochemistry	12.	Veterinary Physiology
5.	Veterinary Gynaecology & Obstetrics	13.	Veterinary Public Health & Epidemiology
6.	Veterinary Medicine	14.	Veterinary surgery & Radiology
7.	Veterinary Anatomy	15.	Veterinary Extension Education
8.	Veterinary Microbiology		
C. Faculty of Forestry (M.Sc Forestry)			
1.	Basic Science & Humanities	3.	Natural Resource Management
2.	Forest Product & Utilization	4.	Silviculture & A-gro-forestry
D. College of Biotechnology (M.Sc. Biotechnology)			
1.	Plant Biotechnology	3.	Forest Biotechnology
2.	Animal Biotechnology		

3.3 Students Obtained degrees upto March, 2019

Sl. No.	Courses/ Programmes	No. of Students obtained the degree (Upto 31st March, 2019)				
		Upto 2015-16	Upto 2016-17	Upto 2017-18	Upto 2018-19	Total
Under Graduate Programme						
1.	B. Sc. (Hons.) Agriculture	1280	31	35	41	1387
2.	B.V.Sc. & A.H.	1049	17	13	14	1093
3.	B. Sc. (Hons.) Forestry	466	16	18	23	523
Total		2795	64	66	78	3003
Post Graduate Programme						
4.	M.Sc. (Agril.)	533	16	19	28	596



Sl. No.	Courses/ Programmes	No. of Students obtained the degree (Upto 31st March,2019)				
		Upto 2015-16	Upto 2016-17	Upto 2017-18	Upto 2018-19	Total
5.	M.Sc. (Forestry)	45	06	10	06	67
6.	M. V.Sc.	452	07	01	11	471
7.	MBA (Biotech)	73	11	13	12	109
8.	M.Sc. (Agribusiness)	57	06	11	11	85
9.	M.Tech. (Agril. Engg.)	04	01	-	01	06
10.	Ph. D. (Agril.)	144	05	05	07	161
11.	Ph. D. (Vety.)	91	05	-	-	96
12.	Ph. D. (Forestry)	-	-	-	-	-
Total		1399	57	59	76	1591

3.4 Bachelor of Vocational Programme (B. Voc.) (Diploma/Certificate Courses):

Under Skill Development programme of National Skill Qualification Framework (NSQF) of University Grant Commission, Birsa Agricultural University started 16 Certificate, Diploma, Advanced Diploma and B. Voc. Courses with total intake capacity of 800 students for the residents of Jharkhand state during the session 2018-19. The Diploma programme are of 06 months duration followed by one year duration courses of Diploma, two years courses of Advanced Diploma and three years courses of B. Voc. Programme.

The details of courses are as follows:

Sl. No.	Courses	Departments	No. of Seats
Certificate Courses (Duration 06 months) Eligibility – 10+2, No Age bar			
1. Faculty of Veterinary Science & A.H.			
i.	Animal Health	Veterinary Medicine	25
ii.	Animal Husbandary	LPM	25
iii.	Artificial Insemination in Livestock & Poultry	Vet. Gynaecology & Obst.	25
iv.	Aquaculture	Aquaculture	25
v.	Poultry Farming	LPM	25
2. Faculty of Agriculture			
i.	Nursery Management in Horticulture	Horticulture	25
ii.	Food Processing	Home Science	25
iii.	Quality Organic Manure Production & Soil Testing	Soil Science	25
iv.	Bee Keeping and Honey Processing	Agril. entomology	25
v.	Mushroom Cultivation	Plant Pathology	25
vi.	Farm Equipments Operation and Maintenance	Agril. Engineering	25
vii.	Human Nutrition and Dietetics	Home Science	25
3. Faculty of Forestry			
i.	Bamboo and Cane Production and Processing	Silvi. & Agro-Forestry	25
ii.	Herbal Resource Technology	Forest Prod. & utilization	25
4. College of Biotechnology			
i.	Plant Tissue Culture	Biotechnology	25



Sl. No.	Courses	Departments	No. of Seats
Diploma Courses (Duration 01 Year) Eligibility – 10+2 Science, No Age bar			
1. Faculty of Veterinary Science & A.H.			
i.	Animal Health Technology	Veterinary Medicine	25
ii.	Animal Husbandary	LPM	25
iii.	Poultry Farming	Vet. Gynaecology & Obst.	25
iv.	Artificial Insemination in Animal Production	Aquaculture	25
v.	Aquaculture	LPM	25
2. Faculty of Agriculture			
i.	Nursery Management in Horticulture	Horticulture	25
ii.	Food Processing	Home Science	25
iii.	Quality Organic Manure Production & Soil Testing	Soil Science	25
iv.	Bee Keeping and Honey Processing	Agril. entomology	25
v.	Mushroom Cultivation	Plant Pathology	25
vi.	Farm Equipments Operation and Maintenance	Agril. Engineering	25
3. Faculty of Forestry			
i.	Bamboo and Cane Production and Processing	Silvi. & Agro-Forestry	25
Advanced Diploma Courses (Duration 2 Years) Eligibility – 10+2 Science, No Age bar			
1. Faculty of Veterinary Science & A.H.			
i.	Veterinary & Animal Health Technology	Veterinary Medicine	25
2. College of Biotechnology			
i.	Plant Tissue Culture	Biotechnology	25
B. Voc. Programme (Duration 03 Years) Eligibility – 10+2 Science, No Age bar			
1. Faculty of Agriculture			
i.	Human Nutrition and Dietetics	Home Science	25
2. Faculty of Forestry			
i.	Herbal Resource Technology	Forest Prod. & utilization	25

The students enrolled in 1st & 2nd semester of B. Voc. in Herbal Resource Technology is 37 and B.Voc. in Human Nutrition & Dietetics is 30. 25 students are admitted in each certificate courses like Aquaculture, Poultry Farming, Mushroom Cultivation, Quality Organic Manure production & Soil Testing.





3.5 : Establishment of New Colleges

3.5.1: Tilka Manjhi Agriculture College, Godda

Sri Randhir Kumar Singh, Hon'ble Minister of Agriculture, Animal Husbandry and Cooperative, Govt of Jharkhand and Sri Nishi Kant Dubey, Hon'ble Member of Parliament, Godda, jointly inaugurated the College on November 21, 2018. The college located in Punasia mouza of Sadar block of Godda district and has on roll 93 students, at present.



3.5.2: Rabindra Nath Tagore College of Agriculture, Mohanpur, Deoghar

Sri Randhir Kumar Singh, Hon'ble Minister of Agriculture, Animal Husbandry and Cooperative, Govt. of Jharkhand and Sri Nishi Kant Dubey, Hon'ble Member of Parliament, Godda jointly inaugurated the College on November 22, 2018. The College located under Mohanpur block at a distance of about 10 kms from Deoghar district headquarters in a picturesque and serene environment has on roll 90 students at present.



3.5.3 College of Fisheries Science, Gumla

College of Fisheries Science, Gumla was established in the year 2017. The college awarded B.F.Sc. degree on fisheries science. At present, college is running in the building of Ranchi Veterinay College. There are 10 faculty members and 54 students in which 25 are in 1st batch and 29 in 2nd batch.

3.5.4 : Phulo Jhanho College of Dairy Technology, Hansdiha, Dumka

College of Dairy Technology was started at Ranchi Veterinary College campus on 29th August, 2017 with 30 students. Recently this college was shifted to Hansdiha, Dumka on 17th December, 2018. This college spreads over an area of approximately 12 acres.

The college has five departments i.e. Dairy Technology, Dairy Engineering, Dairy Chemistry, Dairy Microbiology And Dairy Business Management. The intake capacity is 30 students per year and currently 48 students are studying 1st year and 2nd year.





3.5.5 : College of Agricultural Engineering, Ranchi

The foundation stone of this college was laid by former Chief Minister of Jharkhand, Shri Arjun Munda on 19th of June 2012. The college offers 4 years B.Tech. degree in Agricultural Engineering discipline. The college comprises of six departments. The intake capacity is 40 students per year and currently 77 students are studying 1st year and 2nd year.



3.5.6 : College of Horticulture, Khuntpani, West Singhbhum

College of Horticulture was started at Ranchi Agricultural College campus in 2018-19 sessions. This college offers 4 years B. Sc. (Hons.) in Horticulture discipline. The college comprises six departments. The intake capacity is 50 students per year and currently 81 students are studying 1st year and 2nd year.

3.6 : 6th Convocation of the University

Smt. Droupadi Murmu, Hon'ble Governor and Chancellor of the Universities of Jharkhand addressed the 6th Convocation of Birsa Agricultural University (BAU) on January 29, 2019. She stressed on the new integrate animal husbandry, poultry, fishery, bee keeping and horticulture into the farming system for ensuring round the year sustainable income to the farmers. Scientists would have to devise effective strategies to retain the existing farmers and attract new youths in agriculture profession.





Delivering convocation address Dr. Narendra Singh Rathore, Deputy Director General (Agricultural Education), Indian Council of Agricultural Research, New Delhi said that the future of Indian agriculture lies in the hands of girls because 57 per cent of the total students studying in the 75 agricultural universities. BAU Vice Chancellor Dr Parvinder Kaushal outlined the achievements of the institution.



Sirasani Jimmi Prasanti, a student of Dept of Entomology in the Faculty of Agriculture bagged Chancellor Gold Medal from Hon'ble Governor of Jharkhand for obtaining highest OGPA 9.101 in the PG programme of Birsa agricultural University, Ranchi.



Altogether 501 students received their graduation, post graduation and doctoral degrees on 6th Convocation, out of which 20 were given University Gold Medals (UGMs) for obtaining highest OGPA in their respective faculties.



3.7 : Biotechnology

College of Biotechnology was established in 1997. The college offered M.Sc. degree programmes in Plant Biotechnology, Animal Biotechnology, Forest Biotechnology and General Biotechnology.

Regular short training programmes on Plant tissue Culture to the sponsored graduates and post graduates students of different Universities and institutes of the country are also being organized.



3.8 : Library

Central library and three faculties libraries and library of college of biotechnology cater to the needs of students and teachers. Besides every department has a departmental library.



3.9 : Experiential Learning Programme





Nine Experiential Learning Units have been established with the support of the ICAR to impart entrepreneurial training of the students, they are Upgradation of Nurseries, Establishment of Model Processing Plant, Upgradation of Engineering Workshop, Establishment of Technical Support Service Centre, Establishment of Farming System Model, Poultry Processing Plant, Medicinal and Aromatic Plants, Forest Products & their Utilization & Milk Processing Plant.

3.10 : Memorial Lectures & Annual Events

1. Professor S.C. Mandal Memorial Lecture
2. Sri Kartik Oroan Memorial Lecture
3. Foundation Day
4. World Soil Day
5. World Veterinary Day
6. World Milk Day
7. Agriculture Education Day
8. Environment Day &
9. Swachta Divas etc.



3.11 : Summer Internship & IIRS Programme

3.11.1 : Summer Internship

Summer Internship started by the department of Soil Science and Agricultural Chemistry of the University from 2017. Every year students from several Universities are joining the Summer Internship Training Program. Students from 8 Universities viz. Central University, Ranchi, Rama University, Kanpur, Quantum University, Roorkee, Dr. Shyama Prasad Mukherjee University, Ranchi, Government Autonomous College, Rourkela, Ranchi University, Ranchi, Dun Business School, Dehradun and Himgiri Zee University, Dehradun have successfully completed the programme.



3.11.2 : IIRS Distance Learning Outreach Programme

Birsa Agricultural University, Ranchi conducted IIRS distance learning outreach programme in collaboration with Indian Institute of Remote Sensing (IIRS), Indian Institute of Technology (IIT) from November, 2017. Under Indian Space Research Organisation, Govt. of India is a premier Training and Educational Institute set up for developing trained professionals in the field of Remote Sensing, Geo informatics and GPS Technology for Natural Resources, Environmental and Disaster Management.



On - line classes of the course organized at RB Prasad Memorial Lecture hall of Faculty of Agriculture, BAU, Ranchi. BAU is the nodal centre of the Jharkhand state.

Birsa Agricultural University successfully conducted 11 programs in the last two years. 294 PG Students of the BAU & other University of Jharkhand & faculty members were benefited from these courses.



4.0 : Doubling Farmer's Income Programme

Under the Chairmanship of Vice-chancellor, Birsa Agricultural University, Ranchi, Coordination Committee for Jharkhand state on doubling the farmer's income was constituted by the Secretary (DARE) & DG, ICAR to analyze the present scenario, identifying the gaps and devise the viable strategic plans.

Based on the problems and priorities in the state, strategic plan needs to be framed to coordinate the activities from all sectors including animal husbandry, fisheries, poultry, horticulture, cereal crops, medicinal plants, financial institutions, etc., with a greater priority to achieve the goal. A series of meetings / workshops / Brainstorming sessions / informal group discussions were conducted for through discussion and to formulate agro-ecology specific action plan based on recommended technological interventions for doubling the income of farmers by March, 2022.

Recommendations:

1. **Increase Net Sown Area:** The State suffers from high levels of current fallow, even during *Kharif*, mainly due to deterioration of soil status, erratic rainfall and lack of seeds. It is proposed to bring 2.10 lakh ha of current fallow into cultivable land.
2. **Convert waste land to cropped area:** It is recommended that watershed based development may be extensively encouraged to bring large areas of cultivable waste into cropped area. It is envisaged to convert 50,000 ha of waste land through watershed development, bunding, land terracing, moisture conservation measures, water harvesting links etc.
3. **Soil management:** The soil of state mainly suffers from extreme to high acidity (50% of TGA), low to medium organic carbon (47% of TGA), low available N (20% of TGA), low available P (66%), low available potassium (18% of TGA), low available sulphur (38% of TGA), zinc deficiency (7% of TGA), and boron deficiency (45% of TGA). The problem of toxicity of iron and aluminium pose serious problem in moisture deficient regime. Multipronged strategy combining short-term and long-term approaches is fundamental for agricultural development of the State.
4. **Soil and water conservation:** Some of the recommended systems for different situations are: i) Micro level water resource development through tank cum well system which works on drainage line in a watershed is recommended for plateau areas having slope of 2 to 5%; ii) Check-dams built across the direction of water flow on shallow rivers and streams for the purpose of water harvesting; iii) The farm ponds constructed at the lower side of the fields and the runoff from the higher side of the fields are channelized into the pond. Further facilitation of micro-irrigation through promotional schemes, setting up of demonstration-cum-training centers at district level is needed to bring in improved practice for water use efficiency. Similarly, promotion of integrated nutrient management and use of slow-release fertilizers and micronutrients are needed for improving fertilizer use efficiency. Balanced use of major nutrients (NPK), provision of micronutrients like sulphur, zinc and boron can help to increase yield by over 50% in dryland farming areas.
5. **Soil Health Cards:** Lack of soil health cards has given lot of stress on the soil reserves of nutrients on account of unwanted use of fertilizers without soil testing. While soil health care would have to be given utmost care in any agriculture development plan, it is envisaged that each farmer need to be given 'Soil Health Card' for his land which would contain all required information relating to pH factor, nutrient status, soil depth, texture and structures, organic matter.
6. **Improve SRR:** Seed replacement rate is around 10-15% currently. It should be possible to increase SRR initially to 30% and eventually to 50 or 75% by the end of the current plan by ensuring timely availability of certified seeds for which the state can assist the formation of seed villages in each district, arrange to supply foundation seeds and other infrastructure for seed production and processing. The state seed farms also can be gainfully utilized in a public-private partnership mode for seed production.
7. **Animal Health Clinics:** New / strengthening AI Centers proposed @ one AI Center for every 1000 adult female cattle population. Community pasture / *Gauchar* land / Silvipasture / Grass land @ one per 50000 Adult Cattle Units have been proposed.



8. **Agricultural Prices:** The terms of trade in agriculture are adverse. This calls for extra support in price and / or integrated farming through better implementation of Minimum Support Price to the farmers.
9. **Electricity for Agricultural Purposes:** The share of consumption of electricity for agricultural purposes was estimated at a very low 0.62% against all India coverage of 20.95% with increasing requirements for energizing pump-sets, operating gender friendly farm equipments, heat and light requirements for birds and animals etc. it is recommended that the State Government may take steps to reach electricity supply to all farm families within a stipulated time frame.

5.0 : Visits & Recognitions

5.1 : Eleven-member Chinese delegation visits BAU

An eleven-member Chinese delegation consisting of government officials and entrepreneurs visited different units of Birsa Agricultural University on November 30, 2018 to have an exposure of the ongoing research and extension activities of the University.

Vice Chancellor and concerned scientists apprised the Chinese team of the institution's activities and achievements during its visit to various departments of the University. The delegation along with BAU officials also visited Nagri and Ekamba villages under Kanke block of Ranchi district, adopted by BAU for development as model villages.



The delegation expressed its interest to have collaboration in agricultural research and food processing sector and invited BAU officials to visit China. The Chinese delegation was in Ranchi to participate in the two-day Global Agriculture & Food Summit held at Khelgaon on November 29-30, 2018.

5.2 : Parliamentary Standing Committee on Agriculture visits BAU

Sri Hukmdev Narayan Yadav, Former Union Minister and Hon'ble Chairman of Parliamentary Standing Committee on Agriculture and two members of the committee Sri C.L.Ruala, Congress MP from Mizoram and Sri Harnath Singh Yadav, Rajya Sabha Member of BJP from Uttar Pradesh visit BAU on July 8, 2018. Dr AK Vashisth, Assistant Director General, ICAR and officials of Union Ministry of Agriculture & Farmers Welfare were also present on the occasion.



Sri Yadav addressed the scientists and officials of Birsa Agricultural University (BAU), Ranchi after visiting different units of the University. He stressed on utilizing the modern agricultural science and technology for refinement, modification and upgradation of farmers' traditional knowledge, skill and experience. The team visited the different department & units, of the university.



5.3 : Award to BAU for Highest Seed Production

Indian Institute of Seed Science, Mau of Indian Council of Agricultural Research (ICAR) has awarded Birsa Agricultural University for best performance in seed production among all agricultural universities. This award was presented to BAU at the 12th Annual Review Meet of ICAR Seed Project (Seed production of Agricultural Crops) held at Mahatma Phule Krishi Vishwavidyalaya (MPKV), Rahuri (Maharashtra) on July 29-30, 2017. BAU Seed Scientist Dr Ravi Kumar received the certificate of best performance.

6.0 : Research Highlights

6.1 : Current thrust areas

1. Perfection of improved crop production technologies for the state.
2. Development of improved varieties of crops grown in the State.
3. Promotion of SRI & Hybrid Rice Cultivation in the State through on farm trials & training of farmers.
4. Use of improved farm implements such as cono-weeder, plastic drums seeder, multi crop vertical reaper, zero seed drill and others.
5. Development of pest & disease resistant crop varieties.
6. Water saving and improved rain water management technologies for crops.
7. Site specific farming system research.
8. Protected cultivation of vegetables & flowers.
9. Integrated fish farming.
10. Integrated plant nutrient management systems for crops.
11. Management of Acidic soils for enhanced productivity & soil health.
12. District/ Block level soil resource inventory for the State.
13. Research on Bio-fertilizer production & Organic inputs.
14. Long term effect of manures & fertilizers on soil health and crop productivity.
15. Jharsuk variety of pigs developed which are 4-5 times more remunerative than desi.
16. Local Black Bengal goat improvement by selective breedings standardised.
17. Non-conventional locally available feeds like seed cake of Karanj, Niger, Sal, Kusum, Damaged Apple, Marua, and Tamarind Seed developed as livestock feed.
18. Garlic, Mullethi and satawar tested for treatments of Mastitis.
19. Therapeutic regimen against blood protozoan disease standardized Cryo surgery for management of oral, ocular and proctogenital lesions.
20. Package for control of paramphistomiosis, fasciolosis and G.I. nematode.
21. Package for tick and lice control and desired time parturition technique for saw.
22. Improved technique for induction of parturition in goat.
23. Technique for percutaneous transfixation of long bone fracture.
24. Epidemiological studies on prediction of haemoprotozoan disease in cattle.
25. Development of in-vitro technique for effective selection of antibiotic in the treatment of mastitis. The time of antibiotic selection could be reduced by 40 hours.

6.2 : Important Technologies

6.2.1 : Natural Resource Management

Soil application of Borax @10-15 kg/ha enhances crop yield and quality of pulse crop in acid alfisol of Jharkhand. Soil application of sulphur through phospho gypsum @ 110 kg /ha prove beneficial for oilseed and pulse crop. Zinc application level (5.0 to 7.5 kg/ha) in hybrid rice has been established and its verification was done on



farmers field through 46 trials in Ranchi, Khunti and Lohardaga districts of Jharkhand. Farmers are getting better response to Zn application in low-land rice with higher profits.

Critical limit of boron in soil has been established on 0.48, 0.50, 0.47, and 0.42 mg kg⁻¹ for hot water, hot calcium chloride, salicylic acid, and ammonium acetate extractable B, respectively. This is helping the Soil Test Labs to delineate B-deficient soils.

0.2% borax with 0.2 % urea solution spray have been introduced among farmers through FLD programme. Now, farmers particularly in vegetable growing areas regularly using borax in their fields to control Boron deficiency in crops.

Indigenous and high yielding rice cultivars accumulated higher Zn in grain and straw as compared to hybrid genotype of rice. Thus, agronomic bio-fortification should be tried in indigenous and HYVs of rice for greater success. Considering higher recovery of added Zn fertilizers in rice and wheat with soil + foliar application as compared to soil application alone, this should be promoted among farmers for better results and for higher economic ben.

Furrow application of lime @4 q/ha with FYM and recommended dose of fertilizers results in higher crop yield and soil quality in Acid soils (pH <5.5) of Jharkhand.

Re-utilization of accumulated phosphorus by cutting the dose of added P fertilizers to the tune of 50 % in case of high build up P soil resulted no yield loss with higher P-use efficiency in soybean – wheat system in Acidic soils.

6.2.2 : Agroforestry & Agri - silvicultural Systems

Gamhar based agroforestry system: This technology is based on utilization of fallow and uplands by gamhar (*Gmelina arborea*) with leguminous intercrops of groundnut and also improves the growth of trees through nutrient sharing mechanism. The cultivation of groundnut at initial age of gamhar (*Gmelina arborea*) is successful upto three years. It can be taken further with marginal economy upto fifth year. The overall net income ha⁻¹ yr⁻¹ with gamhar + groundnut system is approx. Rs.1.2 lakh from degraded land.

Chakundi based agri silvicultural system: The Chakundi based agroforestry is very useful for fuel and small timber based system. The inter space between trees is utilized for growing groundnut under irrigated conditions. The cultivation of groundnut in initial age of chakundi (*Cassia siamia*) upto three years is successful. It can be taken up further with marginal economy upto fifth year. The cost of cultivation of groundnut in ha⁻¹ yr⁻¹ is about Rs. 30,213/-. Output in terms of net profit per unit area is Rs. 17,216/- ha⁻¹ yr⁻¹ from degraded land. The overall net income ha⁻¹ yr⁻¹ with chakundi + groundnut system is approx Rs. 1.11 lakh from degraded land.

Subabool based agri silvicultural system: Subabool (*Leucaena leucocephala*) based agroforestry system is very useful for the improvement of degraded and wastelands which involves plantation of subabool for fodder, fuel wood and for increasing soil fertility due to its ability for nitrogen fixation. The intercrops such as colocassia can be grown successfully. Cultivation of shade loving crops colocasia with 3 old subabool tree was done successfully. The yield of intercrops of colocacea was 1.55 t ha⁻¹. Besides this, fertility of soil is enhanced. The biomass yield of subabool produces 150.0 t ha⁻¹. The cost of cultivation of Colocacea in ha⁻¹ yr⁻¹ is about Rs.42, 789. Output in terms of net profit per unit area is Rs.30,111/- ha⁻¹ yr⁻¹ from degraded land. Besides this, predicted income from 7 years old standing tree is approx. Rs. 8.40 lakhs ha⁻¹ i.e., 1.20 lakh ha⁻¹ yr⁻¹ from Agri silviculture system. The overall net income ha⁻¹ yr⁻¹ with Colocacea with subabool system is approx.1.5 lakh from degraded land.

Bamboo based agroforestry system: Bamboos are integral component in most of the agroforestry systems in the Jharkhand and plantation of bamboo species on farm or pond boundaries is very remunerative. The integration of bamboo in agroforestry systems offer significant opportunity for livelihood improvement through nutritional and economic security particularly for the tribal farming community of the state. The integration of intercrops crops such as ginger and turmeric is beneficial under bamboo based agroforestry system. The cost of cultivation of turmeric in ha⁻¹ yr⁻¹ is about Rs. 37,200/-. Output in terms of net profit ha⁻¹ yr⁻¹ from bamboo based agroforestry is Rs.1.45 lakhs ha⁻¹ yr⁻¹ from degraded land. The overall net income ha⁻¹ yr⁻¹ with turmeric based agrisilviculture system is approx. Rs.1.45 lakh from degraded land. Technology has been popularized and transfer the technology to the farmers through extension activities.



6.2.3 : Technologies on Animal Husbandry

The farmers of Jharkhand and other states like West Bengal, Bihar, Odisha, Assam, Meghalaya, Mizoram etc. have fully adopted Jharsuk breed of Pigs developed by BAU. There is a heavy demand for improved Jharsuk breed of Pigs by the farmers.

Development of a suitable genotype of goat by selective breeding of Black Bengal goat for meat production with higher rate of growth accompanied with technologies on feeding, housing, disease control measures and meat characteristics have largely been instrumental in large scale adoption by goat farmers of this state.

BAU under AICRP on poultry, has developed Jharsim breed of poultry. This variety of Chicken with multicolour plumage colour resembles the native chicken and produces 2 times more meat and three times more eggs than the native breed.



Based on 10 years data on chemical pathology and haematology, several disease prediction for hemoprotozoan disease in dairy cattle has been developed. Highest incidence of hemoprotozoan infection like theiliosis, babesiosis and hemonichettsial organism anoylasmos has been recorded between May to October with peak incidence diseases predicted in the month of August.

6.2.4 : Crop based technologies developed

Use of Sulphur In oilseed and Pulses: Sixty percent of the total upland soil of Jharkhand is suffering from sulphur deficiency. Phospho gypsum @ 110 kg /ha prove beneficial for oilseed and pulse crop. KVKs working under BAU are disseminating this technology through training and demonstration.

Integrated Nutrient Management: Seventy five percent of recommended dose of the fertilizer along with 25% through organic source prove to be a better option for maintaining soil health and getting sustainable crop yield. KVKs and Zonal Research Station continuously engage in disseminating this technology among farmers.

Pigeonpea: Technologies related to improved varieties, integrated nutrient management and integrated pest management were transferred among farmers. This technology enhances yield upto 25-30% in grain yield. Farmers have adopted these technologies and benefitted in terms of yield and income.

Blackgram: Improved blackgram varieties with complete package on micronutrient and weed management related technologies were transferred to farmer's field.

Chickpea: Improved varieties like Birsa chana-1, were popularized on farmers fields. Pest management technologies were transferred to farmer's field.

Cereals: Various technologies i.e. improved varieties, integrated pest management, integrated crop management, nutrient management, etc. related to rice, wheat, sorghum and maize were transferred to farmers fields covering a large area in different district of the state. These technologies improved crop yield considerably over local check.

Vegetables: Various resource conservation, nutrient management, disease management technologies of bottle guard, bitter guard, tomato, capsicum, chilli, brinjal, vegetable pea, okra, colocasia, broccoli, cabbage and cauliflower were transferred to farmers of the state through KVKs.



6.2.5 : New Crop varieties

Birsa Soybean -3 (BAUS-40)



Features

Plant height- 60 to 65 cm, white flower, three seeded pods covered with smooth textured tawny colour hairs , Seeds yellow and elongated , maturity -115 to120 days , tolerant to drought stress as compared to checks and other promising varieties, tolerant to Rhizoctonia aerial blight, Frogeye leaf spot, Cercospora leaf spot ,Bihar hairy caterpillar and leaf roller . Protein content -37 % , Oil content -19.5 % , Seed Yield -25 -30 Q / ha.

Birsa Marua -3 (BBM-10)



Birsa Marua- 3

Features

Plant height 109-114 cm, finger incurved and pale yellow at maturity, seed round and yellow brown, maturity-110-112 days, seed weight 0.368g/100 seed, tolerant to drought stress as compared to local and national check varieties under Natural condition, tolerant to neck & finger blast, brown spot, banded sheath blight and foot rot; ear head caterpillars and stem borers. Grain yield up to 30 q/ha and fodder yield up to 12t/ha.

New Variety of Linseed

Priyam (Birsa Tisi-1)

Birsa Agricultural University has developed a new variety named Priyam and suitable for rainfed condition. This Variety is released by CVRC in 2017.

Features: Seed yield 1253 kg/ha and its potential yield 20 q/ha, Seed colour brown, oil content 37.48%, linolenic acid 52.54% (Omega 3) with maturity between 128-130 days. It is highly tolerant to rust, wilt, alternaria blight and powdery mildew, It is also tolerant to bud fly under natural condition.



Linseed variety Priyam being used as zonal check under coordinated trials in rainfed conditions for the last 2 years. DAC Indent has been received for the breeder seed production of Linseed variety Priyam (1.5q) for the year 2019-20.



Divya

Birsa Agricultural University has developed a new variety named BAU 06-03 (Divya) having yield potential of 2153 kg/ha, high oil content (41.30 %) and high linolenic acid (60.56). It was developed by pedigree method from a cross of BAU-1008 x Kiran. Average seed yield 1538 kg/ha which was 22.65% and 8.85% higher than National check. T-397 (1254 kg/ha) and Zonal check LC-54 (1413 kg/ha), respectively. Its potential yield recorded upto 2138 kg/ha.

Features: seed colour light brown, oil content 39.81%, high linolenic acid 60.56% (omega 3), with maturity between 127-130days. It is highly resistant to rust, moderately resistant to alternaria blight, powdery mildew and wilt. It is also moderately resistant to bud fly under natural and artificial condition.

This Variety is released by CVRC in 2016. This variety is suitable for irrigated condition. Linseed variety Divya being used as zonal check under coordinated trials in irrigated conditions for the last 2 years. DAC Indent has been received for the breeder seed production of Linseed variety Divya (1.60g) for the year 2019-20.



6.2.6 : Agricultural Implements/Machineries

6.2.6.1: Agricultural Implements/Machineries Technologies Developed / Adopted

- i. Birsa Ridger Plough
- ii. 10 cm MB Plough
- iii. Animal drawn puddler
- iv. Tractor drawn puddler
- v. Tractor drawn rotavator
- vi. Birsa Seed cum Ferti . Drill
- vii. Manual Rice Transplanter (CRRRI Design)
- viii. Self Propelled Rice Transplanter
- ix. Animal Drawn Inclined Plate Planter
- x. Tractor Drawn Zero Till Seed-cum-Fertilizer Drill
- xi. Tractor drawn vegetable transplanter
- xii. Dutch Hoe
- xiii. Grubber
- xiv. ConoWeeder
- xv. Power weeder
- xvi. Japanese Paddy Weeder
- xvii. Dryland Weeder
- xviii. Wheel Hoe
- xix. Tubular Hand Maize Sheller
- xx. Groundnut Decorticator
- xxi. Naveen Sickle



Birsa Ridger



Animal drawn puddler



Self propelled rice transplanter



- xxii. Vertical Conveyor Reaper
- xxiii. Reaper Binder
- xxiv. Paddle paddy thresher
- xxv. Multi Crop Thresher
- xxvi. Hold on Paddy Thresher
- xxvii. Flow through Paddy Thresher
- xxviii. Birsa Potato Digger
- xxix. Peg and Blade Type Lac Sheller
- xxx. Tractor drawn post hole digger
- xxxi. Horticultural Tools
- xxxii. Briquetting of *palash* leaves
- xxxiii. Gasification of Locally Available Wood Logs on Updraft Portable Gasifier
- xxxiv. Improved chullah
- xxxv. Biogas technologies



Tractor drawn M.B. Plough



Manual rice transplanter



Tractor drawn puddler



Multicrop thresher

6.2.6.2 : Package of Implements

- i. 10 cm M.B. Plough
- ii. Birsa Ridger
- iii. Animal drawn puddler
- iv. Birsa Seed-cum-fertilizer Drill
- v. Grubber
- vi. Dutch hoe
- vii. Dryland weeder
- viii. Conoweeder
- ix. Tubular Hand Maize sheller
- x. Naveen sickle
- xi. Self propelled vertical conveyor reaper
- xii. Birsa Potato digger



Reaper binder



Conoweeder



Self propelled reaper



Zero till seed-cum-ferti. Drill

6.2.6.3 : Equipments which have been commercialized by the BAU, Ranchi

Different Agril. Implements were manufactured by M/s R. N. Singh & Co. Pvt. Ltd., Ranchi, the approved commercial manufacturer of improved farm implements of Birsa Agricultural University, Ranchi.

S. No.	Equipments
i	10 cm MB Plough
ii	BisaRidger
iii	Birsa seed-cum-fertilizer drill
iv	Dutch Hoe
v	Grubber
vi	Tubular hand maize sheller
vii	Birsa potato digger



10 cm Animal drawn M.B. Plough



6.2.7: Integrated Farming System Model developed

Total Area: 1 ha

Components: Crops + Dairy (2 cows) + Vermi Compost + Mushroom + Apiary (5 boxes) + Fisheries (Rohu + Catla + Mrigal)

Components	Area (m ²)	Yield (kg)	Cost of cultivation (Rs)	Gross return (Rs)	Net return (Rs)	B: C ratio	Profitability (Rs. /day)
Crops	8000		35788	120078	84290	2.36	230.93
Dairy	590	2677	51474	145704	94230	1.83	258.16
Vermi-compost	265	-	2340	15940	13600	5.81	37.26
Mushroom	145	140	10352	14000	3648	0.35	9.99
Apiary	-	21	2581	6600	4019	1.56	11.01
Fishery	1000	225	5570	22500	16930	3.04	46.38
Total	10000		108105	324822	2,16,717	2.00	593.75

Result : Maximum Net obtained from system was Rs. 2,16,717 with B:C ratio 2.00 from Cropping sequence (Rs. 84,290), Dairy Unit (Rs. 94,230), Vermi compost (Rs.13,600), Mushroom (Rs. 3648) + Apiary (Rs. 4019) and Fishery (Rs. 16930).



6.2.8 : Instructional Livestock Farms

Ranchi Veterinary College is having different instructional livestock farms managed by Department of livestock production & Management. This includes Poultry, varietal Birds, Rabbit, Goat, Pig and dairy farms.

6.2.8.1 : Poultry farm : In poultry farm three lines are maintained viz. Desi (Native), Dahlem Red and PB2. There is one ICAR- AICRP on poultry breeding project and the centre has developed a dual type variety for backyard poultry production named Jharsim in 2016. A total No. of 3000 chicks are maintained at the farm. One 10000 capacity incubator is placed at poultry farm.

6.2.8.2 : Varietal bird : The Ranchi Veterinary College is maintaining different varietal birds for alternate poultry farming by the farmers of Jharkhand. These are Japanese quail, Turkey, guinea fowl, duck, indigenous breeds like Kadak Nath and Emmu. A total of 500 birds are maintained at the farm.



6.2.8.3 Rabbit Farm : College is also maintaining Rabbit farm for laboratory use Some of the breeds of Rabbit maintained are soviet Chinchila and Local Rabbits.

6.2.8.4 : Goat Farm Ranchi Veterinary College is also having instructional small ruminant farm which includes goat and sheep is maintaining black Bengal, Serohi and Barbari breeds of goats and chotanagpuri sheep. There is ICAR- AICRP on Goat Improvement project on Black Bengal (field unit) having four centres in different agroclimatic zones of Jharkhand – Palajori (Deoghar), Tikko (Lohardaga), Chamguru (Ranchi), and Barabanki (East Singhbhum) for improvement of Black Bengal goat. Farm is maintaining 100 goats and 100 sheeps



6.2.8.5 Dairy farm The college has one instructional bovine farm maintaining indigenous breeds of cattle like Gir, Sahival, Tharparkar, and Red Sindhi and Murrah buffalo. A total number of 90 animals are maintained at the farm.



6.2.8.6 : Pig farm The college is also maintaining pig farm. It has developed a highly successful variety of pig named Jharsuk for the farmers of Jharkhand. There is one ICAR – MSP Project for distribution of piglets among the farmers to replace the desi pigs to improve their socio economic status. A total of 800 pigs are maintained at farm.



Pigs breeds maintained

Ghungru Female



Ghungru Male



HAMPSHIRE FEMALE



HAMPSHIRE MALE



JHARSUK FEMALE



JHARSUK MALE



LWY FEMALE



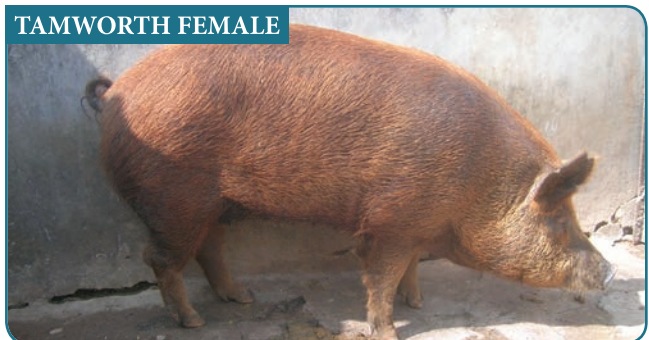
LWY MALE



RC



TAMWORTH FEMALE





6.2.9.0 Animal Health Service

6.2.9.1 College of Veterinary Science, Ranchi is running a Veterinary Hospital in Clinical complex with outdoor & indoor hospitalization facilities. Treatment facilities in the field of Vet. Medicine, Surgery, and Gynaecology is provided to the masses in general. All types of surgical procedures are performed in the clinical complex. Treatment of sick animals of all the species are provided by the specialists in the field of Vet. Medicine, Surgery & Gynaecology. The yearly foot fall in clinical complex is in excess of 20,000.

Diagnostic facilities for diseased animals is provided by departments of Pathology, Parasitology & Microbiology. Post-mortern facilities for dead animals and disease investigation in cases of disease outbreak in different species of animals is provided by department of Vet. Pathology.



6.2.9.2 : Dept. of Pharmacology is screening heavy metal contamination in animal products in different districts of the state.

6.2.9.3 : Dept. of Animal Nutrition provides technical support for computation of area specific ration for livestock & poultry industry of the state.

6.2.9.4 : College of Vet. Science has adopted Hundur & Pithoria villages to provide free Vet. services for Animal diseases.

6.2.10 : Aloe vera Village

Under ICAR sponsored TSP programme on “Promotion of cultivation, Training on Harvesting Technology and Processing of Aloe vera leaves for Socio economic upliftment among Tribal people”, department of Forest Products & Utilization, Faculty of Forestry established Aloe vera Village at Deori of Nagri



Block under Ranchi District in Jharkhand. Promotion of Aloe vera cultivation in a village has been initiated and provide green Shade net, planting materials, manures etc. during 2018-19.

Under this programme, Promotion of Cultivation and Processing of Aloe vera in Dumka District, Jharkhand has been conducted particularly among villages of Jama Block. Altogether, more than ten thousands planting materials were distributed and twelve training programme has been organized.



6.2.11 : Instructional Farm on Ethno medicinal Plants

Department of Forest Products & Utilization of Faculty of Forestry established Instructional Farm on Ethno medicinal There are collection and maintenances of more than 120 ethno medicinal plants life. This instruction farm is very much useful for students & B. Voc (Herbal Resource Technology), Scientists of Faculty of Forestry and vaidyas.



7.0 : Extension Activities

7.1 : Farmers First Programme



Under the innovative ICAR mega project on “Farmers First Programme”, over 1,000 farmers of Chipra and Kudlong village of Nagri Block of Ranchi district participated in Technology Interventions for Doubling Farmers Income through Participatory Research and Extension Approaches. Under Diversification & Intensification of cropping system on high value crops, conservation agriculture and improved technologies & practices, about 106 farm families were involved covering 13 ha area. About 100 farm families covered under Improved Poultry, Goat & Pig production and 10 families covered under IFS model interventions. Altogether 6 capacity building programme on Piggery, Poultry, Lac Cultivation, Ole Cultivation, Value Addition and Zero Tillage and 3 capacity building programme on Bamboo handicrafts for women have been organized and 325 farmers participated in the programme.

7.2 : Convergence



Under project on ‘Convergence & network analysis of extension organisations for enhancing their effectiveness in pluralistic extension regime’, 550 chicks of Divyayan Red were distributed among 50 farmers and vegetables



seeds of hybrid Tomato (Swarn Anmol and Swarn Sampada), Brinjal (Swarn Prativa), French bean (HAFB-4) and Chillies (swarn Prafulya) were distributed among 50 farmers of Chipra village. One day training programme on “Mushroom cultivation” for farmers has been conducted.

7.3 : Development of Communication

Under one collaborative project with Vigyan Prasar, Department Science & Technology on “ Development of Communication Resources on Gender Responsive Application of Science & Technology for Home Garden”, six field trials, two awareness cum workshop and four training programme were organized in which a total of 471 farmers were benefited on different component of Nutrition and Home Garden.



7.4 : Advisory Services

7.4.1 : Biofertilizers Production

Altogether 2,84,954 pkts. of Rhizobium Culture, PSB Culture, Azotobacter Culture, Blue Green Algae, Azollawere produced and generated revenue of Rs. 26,16,540/-.

7.4.2 : Vet Advisory, Diagnosis & Case treatment Services

Altogether 2,287 farmers benefitted from veterinary advisory services, 21,494cases were treated and 2,588diagnostic test services were provided to farmers.

7.4.3 ATIC Center

6,083 farmers were benefitted from advisory services through BAU Call Centre and 16,293 farmers visited ATIC center.

7.4.4 : Agromet Advisory Services

BAU is endinger weather based Agro Advisory services for all the 24 districts of Jharkhand through its 3 AMFUs at Dumka, Ranchi and Darisai. Agromet Advisory Bulletinswere prepared and disseminated on every Tuesday and Friday and also uploaded in websites of IMD, ICAR, BAU and SAMETI. AMFU apart from Mobile SMS advisories also sendatleast two message per week during Kharif, season.

7.5 : Livelihood & Nutritional Security Activities

Birsa Agricultural University, Ranchi is skilling the rural people for livelihood & nutritional activities in agriculture and allied activities like horticulture, dairy, fishery, poultry, bee keeping, mushroom, forestry and food processing etc. for doubling the farmers’s income by 2022. The concerted efforts made by the scientist in the last 3 years for rural farm families.

7.5.1: Technology Assessment & Refinement

Under technology assessment and refinement componenet, altogether 330 On Farm Trials (OFTs) covering the thematic areas of crop crop production, animal husbandries, fisheries, NRM, INM, and PHVA/farm management were conducted by 16 KVKs, in which about 2773 farmers are benefitted.



7.5.2 : Front Line Demonstrations

Under front line demonstrations (FLDs), altogether 31,678 demonstrations on cereals, millets, pulses, oilseeds, vegetables, flowers, fodder & nutri garden were conducted covering an area of 6,822 ha. 12,429 FLDs on livestock activities like piggery, goatery, poultry, duckery, fisheries & dairy and other activities like mushroom, lac, vermicompost, value addition of milk, bee keeping & agril. Implements were conducted and altogether 45,154 beneficiaries were benefitted.



Under Cluster Frontline Demonstrations (CFLDs) on Pulse and Oilseed crops, altogether 11,105 demonstrations on pulses and oilseeds were conducted on different varieties/technologies/ management practices covering an area of 3,843 ha.

7.5.3 : Training & Empowerment

Under training mandate of the 16 KVKs, altogether 4263 courses for rural youth, practicing farmers/farm women and extension functionaries were organized in which altogether 1,46,171 rural youth, practicing farmers/farm women and extension functionaries are participated.

16 KVKs also organized 478 training programmes on ARYA-Rural Youth, Livestock based Farming System, Bee Keeping, Soil & Water Conservation, Vegetable Cultivation, Integrated Farming system, Drip Irrigation, Green House Operator, Animal Health, Fodder Production, Agroforestry & Plantation, Nutrition & Home Garden, Value Addition of Fruits & Vegetables, Piggery, Poultry, Lac Cultivation, Ole Cultivation, Value Addition, Zero Tillage, Conservation Agriculture, Animal Husbandry, Value Addition of Bamboo and Protected Cultivation, in which altogether 42,514 are benefitted.

16 KVKs of the University organized altogether 426 programmes on PPV & FRA, World Soil Health Day, Swachhta Hi Seva, Sankalp Se Siddhi, Mahila kisan Divas, Kisan Divas, PM Kisan Samman Nidhi, Kisan Sammelan, PMFBY & Agricultural Knowledge in Rural School, in which 93,484 farmers are participated.



During last three years, 64700 soil samples were tested covering 3631 villages and distributed 264333 soil health cards by 16 KVKs. Atleast two SMS message per week during Kharif & Rabi seasons were prepared and issued in last 3 years, apart from Mobile SMS altogether 3,90,292 advisories were send to farmers of the state, in which 26,98,569 farmers are benefitted.



7.5.4 : Seed Village

Under improved varieties seed production programme, the KVKs produced 3,981 q. of cereals, 77.10 q pulses and 103.22 q. oilseeds covering total area of 196.35 ha.

Under Seed village programme for production of improved varieties of certified seeds, the KVKs produced 4,00,989 q. cereals, 19,601 q. of pulses and 12,936 q oilseeds seeds covering an area of 7,020 ha.

Under Seed hub programme, the KVKs produced 965 q. of certified seeds/ foundation seeds of improved varieties of pulses and oilseeds in an area of 618 ha.

The KVKs also produced 8,48,816 vegetable seedling, 13,879 fruit sapling, 58,000 medicinal and aromatic plants, 5,017 q. tuber crops/Rhizome and 77,575 fodder planting materials.

7.5.5 : Soil Health cards

Altogether 52,398 soil samples were tested covering 3,205 villages and distributed 1,82,081 soil health cards among farmers by KVKs.

16,213 farmers of 15,605 villages were participated in World soil health day programmes organized by KVKs and distributed 21,068 soil health cards among farmers.

7.5.6 : ICAR-NICRA project

Effort were made by KVKs on 16 interventions. Altogether 4604 demonstrations were conducted in an area of 1,929 ha. Altogether 163 demonstration on poultry (Jharsim), goat (Black bengal), pig (Jharsuk), duck (Khakhi campbell) and fish (Rohu & Mrigal) were conducted and 1929 farm families were benefitted.

Also organized 5074 preventive vaccination, in which 11,579 livestock &





poultry animals are treated. also organized 198 animal health camp and established 431 seed bank, 35 fodder bank, 556 commodity groups and 1209 custom hiring centre, in which 547, 20, 125 and 1429, respectively farm families were benefitted. 109 capacity buildings programmes for 3193 farmers on various thematic areas were organized. 2281 farmers benefitted from veterinary advisory services, 21,494 cases of livestock were treated and 6,439 diagnostic test services were provided to the farmers. Altogether 10,127 soil samples of farmers were tested in last 3 years and soil health cards were issued to concerned farmers under soil health advisory service.

During last 3 years, biofertilizer production unit of the University produced 1,30,841 pkts. of Rhizobium culture, 1,13,042 pkts. of PSB culture, 40,782 pkts. of Azotobacter culture, 114 kg BGA and 10 q. of Azolla to meet the demand of State Govt., NGOs and farming community and generated revenue of Rs. 26,16,540.

7.5.7 : Krishi Kalyan Abhiyan

Krishi Kalyan Abhiyan is an initiative launched by the Ministry of Agriculture and Farmers' Welfare in 1st June, 2018 with a motive to double the income of the farmers by 2022 by providing them with assistance and advice on improving their farming techniques and increasing their incomes. The Krishi Kalyan Abhiyan is carried out in 25 villages located in 14 Aspirational districts of Jharkhand state, each with a population of more than 1000 people. The Krishi Vigyan Kendra is responsible for the complete coordination and implementation of this scheme in the 25 villages of each district. Out of 14 KVKs, 10 KVKs (Bokaro, Chatra, E. Singhbhum, Garhwa, Latehar, Lohardaga, Pakur, Sahibganj, Simdega & W. Singhbhum) of the University associated with Krishi Kalyan Abhiyan programme. Krishi Kalyan Abhiyan comprises of the various activities which promote best practices and add to the agriculture income of the farmers.



10 KVKs of the University issuing 72,268 Soil Health Cards, distributed 60,912 Mini Kits of pulses and oilseeds, 87,534 kits of Horticulture/Agro Forestry/Bamboo and 2,946 Agril. implements and making 3,642 NADAP Pits. Also coverage 80,656 bovine vaccination for Foot and Mouth Disease (FMD), 31,936 of Peste des Petits ruminants (PPR) of Sheep and Goat and 3,625 Artificial insemination saturation. Altogether 5,116 training programmes are being conducted in 500 villages of the 10 aspirational districts for Bee Keeping, Mushroom cultivation and Kitchen garden and preference will be given to the women participants.

8.0 : Seed Production

Directorate of Seed & Farms functioning to supply the quality seed & planting materials of food, feed, fodder and horticultural crops for increasing productivity, food and nutritional security while maintaining sustainability by developing rural entrepreneurship for seed production, processing, storage and marketing in the state. The Directorate established Seed testing & training facilities. Five Seed Processing Units has been established which is located at Ranchi, Gauria Karma, Dhanbad, Darisai and Chianki. Also 16 nos. of mother plant nurseries has been established at different ZRSs/KVKs.



Seed production (Cereals, Pulses & Oilseeds) status during 2013-16 and 2016-17 to 2018-19 under the Directorate of Seed & Farms, BAU, Ranchi (In qtl.)

Particulars	2013-16	2016-17	2017-18	2018-19
Breeder seed	479.0	224.04	160.86	109.41
Foundation seed	9700.0	9029.79	4205.75	4076.22
Participatory seed production (CS/TL)	34495.0	116893	170528	39381.0
Seed Hub, NFSM Pulse (FS)	-	683.0	1325.0	965.86
Planting material Sugarcane	9205.0	6000.0	5000.0	7000.0
Total	53879.0	132829.83	181219.61	51535.49

Testing of seed samples during 2013-16 and 2016-17 to 2018-19 under the Directorate of Seed & Farms, BAU, Ranchi

Particulars	2013-16	2016-17	2017-18	2018-19
Total no. of sample tested	208	119	97	48
No. of samples found satisfactory	176	110	67	42
Percentage of satisfactory samples	84.4	92.4	69.07	87

9.0 : Model Village

Birsa Agricultural University, Ranchi adopted tribal dominated Nagri & Ekamba villages, Kanke block, Ranchi for developing as Model village under tribal sub plan programmes.



BAU carry out agriculture and allied activities like crop improvent, dairy, fishery, poultry, piggery, goatery, bee keeping, mushroom, horticulture, agro-forestry, value addition & food processing in the village in last two years. The concerted efforts made by the University Scientists will bring out the change for livelihood & nutritional security of tribal farmers. University have promoted need based and location specific various technologies intervention for enhancing the income by intercropping high yielding varieties of crops like rice, finger millets, chickpea, lentil, field pea, mustard, linseed and sesame. Secondary agriculture like mushroom cultivation, bee keeping, fish production and vermin compost production activities conducted by tribal farmers. An eleven-member Chinese delegation consisting of government officials and entrepreneurs also visited Nagri and Ekamba villages during two-day Global Agriculture & Food Summit held at Khelgaon, Ranchi on November 29-30, 2018.

10.0 : Centre for Agribusiness Management (CABM)

Students with the minimum under graduate degree in Agriculture, Veterinary, Forestry, Agril. Engineering, Food Technology,/Processing, Fisheries, dairy, Biotechnology and Biological Sciences are admitted in 2 years MBA (Agribusiness) programme of CABM. The total intake capacity is 30 and admissions based on merit on qualifyig standards. About students passed out in MBA (Agribusiness) from 2007-19.

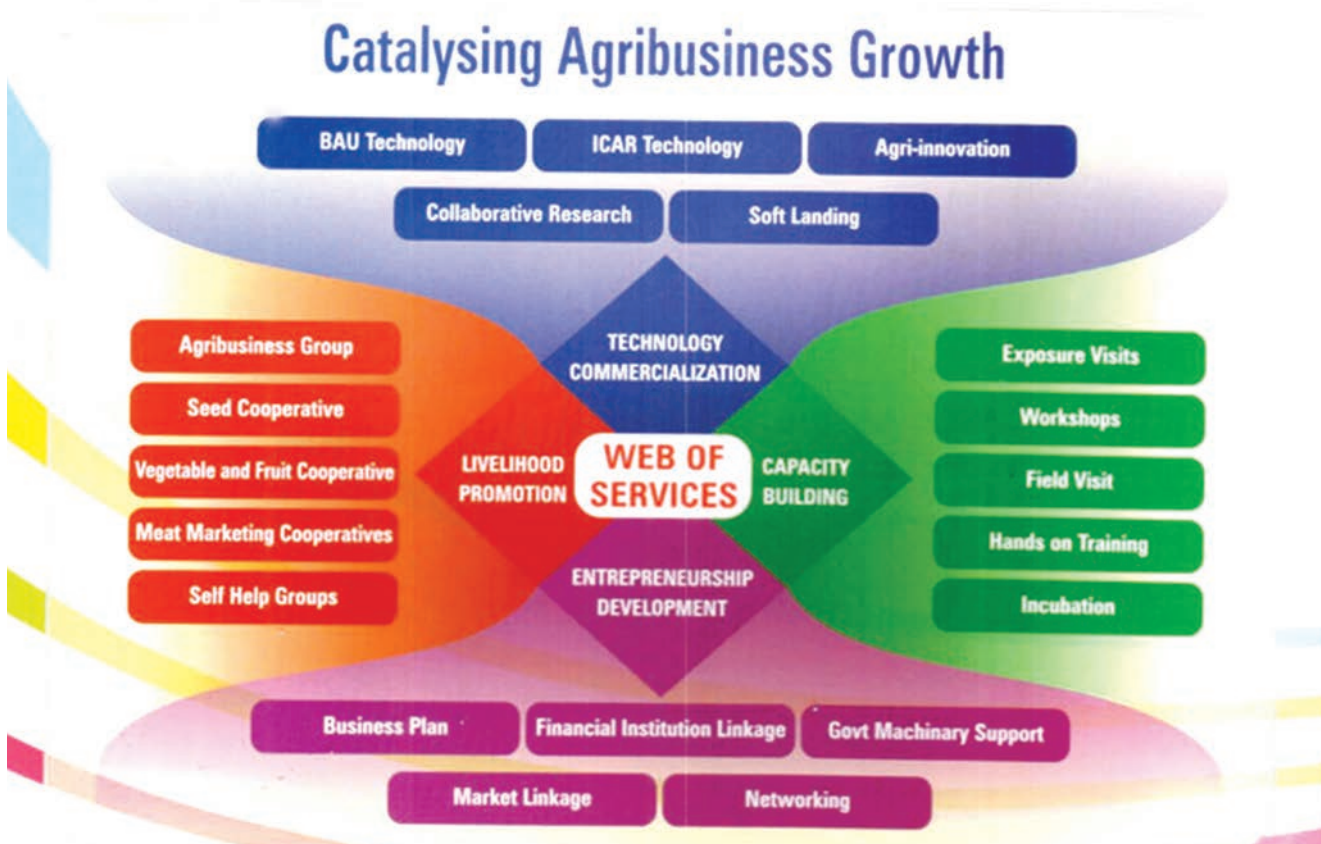
100 % passed out students got job in various reputed organization such as JSLPS, BSLPS, VNR seeds, Mahindra & Mahindra and other organization.



11.0 : Business Planning and Development Unit

Agri-business is a new concept that the university will be undertaking in the coming years in order to ensure that the farmers in the state flourish through agri-business ventures along with farming. Birsa Agricultural University had launched the **Business Planning and Development Unit** under the aegis of the Indian Council of Agricultural Research (ICAR) to develop agri business activities in Jharkhand state by selecting appropriate technologies. The BPD functions as a technology business incubator in the field of technologies for commercialization in the field of agriculture and allied sectors.

The BPD Unit was converted to BPD-BAU Society on 20th June 2014 under Society Registration Act XXI-1860 to provide under one roof all the elements of the agribusiness ecosystem which a start up company requires like viz. Technology support, Business planning and strategy formulation, Training and handholding support, Backward linkage, Networking, Promotion and brand building support, Financial Linkages and Market linkage services. The BPD Unit is an agribusiness incubator, meant to provide professional business consultancy to farmers, agri-entrepreneurs for promotion of agribusiness in the state through innovative and market oriented technologies.



12.0 : Rural Agricultural Work Experience(RAWE) Programme

- RAWE & Students READY (Rural Entrepreneurship Awareness Development) Programme aim to provide rural entrepreneurship awareness, practical experience and creating awareness to undergraduate students about agriculture and allied sciences. The programme helps in building confidence, skill and acquire indigenous technical knowledge (ITK) of the locality and there by preparing the pass-out for self-employment. It is as an essential prerequisite for the award of degree to ensure hands on experience and practical training.
- Students associated with village attachment programme in Rendo and Sangrampur villages of Kanke blocks and ICAR project – Farmer FIRST programme village Chipra at Nagri block of Ranchi districts for a period of 8 weeks. They were exposed to agronomical, plant protection, soil improvement, fruit and vegetable production, animal production interventions including extension and transfer of technology activities.



- Students exposed to different technological interventions for doubling farmers income. They conducted agro-ecosystem analysis through PRA tools in village Chipra and Kudlong. They participated in student-scientist interface and Kisan Gosthi and conducted training on integrated farming system, nutrition gardens and soil esting with the help of scientist. They studied socio-economic condition of farmers, nursery management, drip irrigation, wheat cultivation through Zero tillage, production and marketing of vegetable from progressive farmers. Students got also exposur on different central sector and state scheme.
- Sudents were also attached to different agro-industries for a period of 10 weeks to got an experiences of the industrial environment and working culture of Agro-industries like Mother Dairy Fruit & Vegetable Pvt. Ltd., Jharkhand Milk Federation, Mahindra Samridhi, Mahindra Tractor, Busiess planning and Development Unit and Mobile Agricultural school and services (MASS).



- Every students of Faculty of forestry learnt the techniques of Tree Nursery Management, Sustainable Managements of Forest, Importance of Timber and Non-timber Forest Products, Management of Wild Animals in Natural Forest & Captivity, Participatory Rural Appraisal, Monitoring and Control of Pollution and Identifications of Diseases & Pest of trees including their control methods.
- The Student of Forest Faculty used to prepare work plan of Sal Forest and also study Socio-economic Diversities and Cultural Spectrum of Tribal People living inside and fringes of the Forest Areas.



13.0 : Student Amenities, Programmes & Activities

13.1 : Student Amenities

Fellowship/Scholarship	
1.	Merit & Merit cum Means Scholarship for UG Students
2.	District Welfare Scholarship to ST/SC categories Students
3.	Fellowship for PG & Ph. D. Students
4.	Rajiv Gandhi National Fellowship for ST/SC categories PG & Ph. D. Students
5.	ICAR National Talent Scholarship for UG, PG & Ph. D. Students
Internship Allowance for Veterinary Science Graduats	
Research thesis grant for PG & Ph. D. Students	
Railway Concession for students	
Hostels	
1.	10 Boys & 06 Girls Hostels with modern facilities like computer, internet, telephone, common rooms with megazines, news paper and TV, Mess & Generator facilities
2.	Indoor game facilities in each hostels with one Univ. Gymnesium
Sports/Cultural/library	
1.	4 Game & sports field at the Univerity
2.	Each college have one library and One Central Library at Univ. Level
3.	Each college have one Auditorium for cultural Activities
4.	Games, sports,cultural and Literacy activities have been provided to the students
5.	Smart class rooms & virtual classroom in each faculty

13.2 : Student Programmes & Activities

Programmes & Activities	Dates	Venue	Organizers
AGRIUNISPORTS - 2018	30 Jan.- 3 Feb., 2018	ASU, Bangalore	ICAR, New Delhi
AGRIUNIFEST - 2018	12-16 Jan.,2018	SVVU, Tirupati	ICAR, New Delhi
AGRIUNISPORTS - 2019	2-5 Jan.,2019	PAU, Ludhiana	ICAR, New Delhi
AGRIUNIFEST - 2019	3-7 Feb.,2019	SKDAU, Gujrat	ICAR, New Delhi
Chancellor Table tennis Tournament	8-9 Feb.,2019	BAU, Ranchi	DSW, BAU, Ranchi
First jharkhand Inter University Youth Festival- 2019	25-29 May, 2019	BAU, Ranchi	BAU, Ranchi





13.3 : Student Activities

Sarhul Puja, Karma Puja, Birsa Jayanti, Christmas Gatherig, Teachers Day & Freshers Day were organized every year. Blood Donation Camp, Eye checkup camp, Health checkup Camp & Animal Health & Vaccination camp were also organised under NSS activities.



14.0 : Seminars/Workshops/Conferences

S. No.	Name of Seminars/Workshops/Conferences	Dates	Organizers	No. of Participants
1.	National Seminar on ICT Applications in Changing Face of Agriculture	Jan. 19, 2018	BAU, Ranchi & IIIT, Hyderabad	140
2.	Annual group Meet of AICRP on Safflower & Linseed	Aug. 10-12, 2018	BAU, Ranchi & ICAR, New Delhi	100
3.	All India Wheat & Barley Research Workers Meet	Aug. 25-27, 2018	BAU, Ranchi & ICAR, New Delhi	300
4.	Regional Workshop on Alternate Agricultural Production Pathways in Changing Pathways	July 24, 2018	BAU, Ranchi & ICAR, New Delhi	250
5.	National Group Meet of AICRP on Agroforestry	July 28-30, 2018	BAU, Ranchi & ICAR, New Delhi	100
6.	Annual Group Meet of AICRP on Small Millets	March 7-8, 2018	BAU, Ranchi & ICAR, New Delhi	80
7.	Annual Group Meet of AICRP on Soyabean	March 16-18, 2019	BAU, Ranchi & ICAR, New Delhi	100





15.0: Awards & recognitions

Sl. No.	Name of Scientists/Teachers	Name of Award
1.	Dr. Ekhlague Ahmad	Outstanding Scientist Award -2016 by Science & Tech. Soc. of IRD (S & TSIRI), Warangal
2.	Dr. Abdul Majid Ansari	Distinguished Scientist Award – 2016 by the Soc. GUARD, PJTSAU, Hyderabad
3.	Dr. Z.A. Haider	Life Time Achievement Award-2018 conferred by Indo Global Chamber of Commerce, Pune
4.	Dr. Z.A. Haider Dr. M. S. Mallick	Life Time Achievement Award-2018 conferred by Endling Scientific Organization, Pune
5.	Dr. (Mrs.) Manigopa Chakarborty	Eminent Scientist Award-2017, Bharat Vikas award-2017, Scientist of the year Award-2017, Women Super Achievers Award-2018, Indo Global Excellence Award-2018& Distinguished Scientist Award- 2018
6.	Dr. Niraj Kumar	Indo Global Excellence Award -2018, Young scientist award – 2017 & World Agricultural Excellence Award -2017.
7.	Dr. Suresh Mehta	Fellow IAVA Award – 2018.
8.	Dr. N. Kudada	Outstandig Achievement Award – 2018 by ICFA
9.	Dr. H. C. Lal	Outstanding Extension Worker Award – 2017.
10.	Dr. P. R. Oroan	Indo Global Excellence Award -2018 & Distinguished Scientist Award



Sl. No.	Name of Scientists/Teachers	Name of Award
11.	Dr. R. B. Sah	Distinguished Scientist Award- 2018
12.	Dr. N. Salam	Excellence in Research Scientist award - 2017
13.	Dr Abdul Majid	Scientist of the Year award – 2017, Outstanding Achievement Award – 2017, Distunguished Scientist Award – 2018.
14.	Dr. Ekhlauque Ahmad	Distunguished Scientist Award – 2018, Outstanding Achievement Award – 2017 & Distunguished Scientist Award – 2018.

16.0 : Publications

Sl. No.	Name of Publication	Frequency
1.	Birsa Kisan Diary	Annual
2.	Pathari Krishi	Quaterly
3.	BAU Newsletter	Quaterly
4.	BAU Annual Report	Annual
5.	Research Highlights (Kharif & Rabi)	Half Yearly
6.	Extension Highlights	Annual
Books		
7.	Book on Forest, People & Livelihood (ISBN: 9789331329462). APH Publishing Corpn., New Delhi by MA Islam & SMS Quli (2017).	
8.	A text book of Agroforestry (ISBN: 9789386453174), New Delhi Publishers by SMS Quli & MA Islam (2018)	

17.0 : Colloboration and Linkages

17.1: National

- Ministry of Agriculture, Govt. of India.
- Indian Council of Agricultural Research, New Delhi
- ICAR- Indian Agricultural Research Institute (IARI), New Delhi
- ICAR-ATARI, Patna, Bihar
- ICAR- Indan Institute of Natural Resins and Gums (IINRG), Ranchi
- Indian Institute of Agricultural Biotechnology, Garhkhatanga, Namkum
- National Bureau of Plant Genetic Resources, Ranchi
- ICAR-Research Complex for Eastern Region, Research Centre, Plandu, Ranchi
- Central Rainfed Upland Rice Research Station, Hazaribagh.
- Birla Institute of Technology, Mesra, Ranchi
- Central Institute of Medicinal and Aromatic Plants (CIMAP), Lucknow
- ICAR- National Dairy Research Institue, Karnal
- ICAR- Indian Institute of Pulse Research, Kanpur
- ICAR- National Bureau of Animal Genetic Resource, Karnal, Haryana
- UCAR- Central Institute for Women in Agriculture, Bhibneshwar, Odisha



- ICAR- Indian Agricultural Statistics Research Institute, new Delhi
- International Plant Nutrition Institute (IPNI), India Programme
- ICAR- NBSS & LUP, Nagpur
- Fertilizer Association of India, New Delhi
- SAI (R & D Centre), ranchi
- National Horticultural Mission
- National Soil Health Mission
- National Rainfed Area Authority, New Delhi
- Bhabha Atomic Research Centre (BARC), Mumbai
- Department of Science and Technology, Govt. of India
- Department of Biotechnology, Govt. of India
- Indian Statistical Institute, Kolkota
- Cenral mine Planning and design Institute (CMPDI), Ranchi
- Petroleum Conservation Research Association (PCRA), Ministry of Petroleum and Natural Gas, Government of India

17.2: International

- Asia Pacific Association of Agricultural Reseaerch Institute (APPARIO, Thailand
- CIMMYT, mexico
- International rice Research Institute, Philippines
- International Center for Agricultural Research in the Dry Areas (ICARDA), Syria
- International crop Research Institute for Semi Arid tropics (ICRISAT), Hyderabad
- International Livestock Research Institute (ILRI), Syria
- International Plant nutrition institute, Georgia, USA
- Rockefeller Foundation, USA
- Asian Vegetable Research development Center (AVRDC), Taiwan
- International Potash Research Institute, Switzerland
- Colambia Water Center, New York.

18.0 : Future Thrust

Birsa Agricultural University, Ranchi is endowed with the great mission of contributing to India's nutritional security and bringing almost transformational changes in the lives of small and marginal farming community in Jharkhand. The challenge unfolds in the form of many components which call for careful planning and sustained effort. Some key themes are captured in the following bullets:

- The cultivable land is 38.00 lakh ha area, while cultivation is held in 28 lakh ha area and state has about 10.00 lac ha fallow area to be covered.
- Rice fallow area about 14.61 lakh ha to be covered under pulses and oilseeds.
- State producing 55.00 lakh tonnes of food grains as against the requirement of 65.00 lakh tonnes. The deficits of 10.00 lakh tonnes food grains to be bridged by productivity enhancement.



- Develop Birsa Agricultural University as a front ranking University to produce quality human resources in the fields of agricultural sciences
- Germplasm conservation
- To setup a Centre for Advanced Studies in Tribal Agriculture
- Screening and development of suitable high yielding, disease and pest resistant varieties of field crops, vegetables and fruits etc.
- Develop suitable agronomical practices for different fields crops in the context of climate change
- Develop suitable water conservation technologies and ground water recharge
- Develop Integrated Farming System/Cropping System modules for different farm sizes.
- Technologies for crop diversification particularly in upland in the context of climate change
- Conservation Agriculture
- Foster agribusiness entrepreneurship development
- Livestock improvement with technologies to enhance production, productivity, reproduction and health
- Weather based livestock disease forecast modules
- Technologies to promote aquaculture in natural water reservoirs and ponds with high production and productivity
- Agroforestry models
- Forest products utilization technologies
- Post harvest technology with value addition particularly for vegetables, fruits, flowers and coarse cereals like millets
- Quality seed production of field crops and planting materials for bringing self sufficiency in seed sector
- Gender issues in agriculture and allied sectors
- Linkages with national and international Institutions
- Collection, documentation and validation of ITKs.
- Adopted Ulihatu as a model village for doubling farmers income of tribal people

19.0 : Name, Designation, Telephone no., Mobile no. & E. Mail ID of Senior Officers/Officials of Birsa Agricultural University, Ranchi

Web. : www.bauranchi.org

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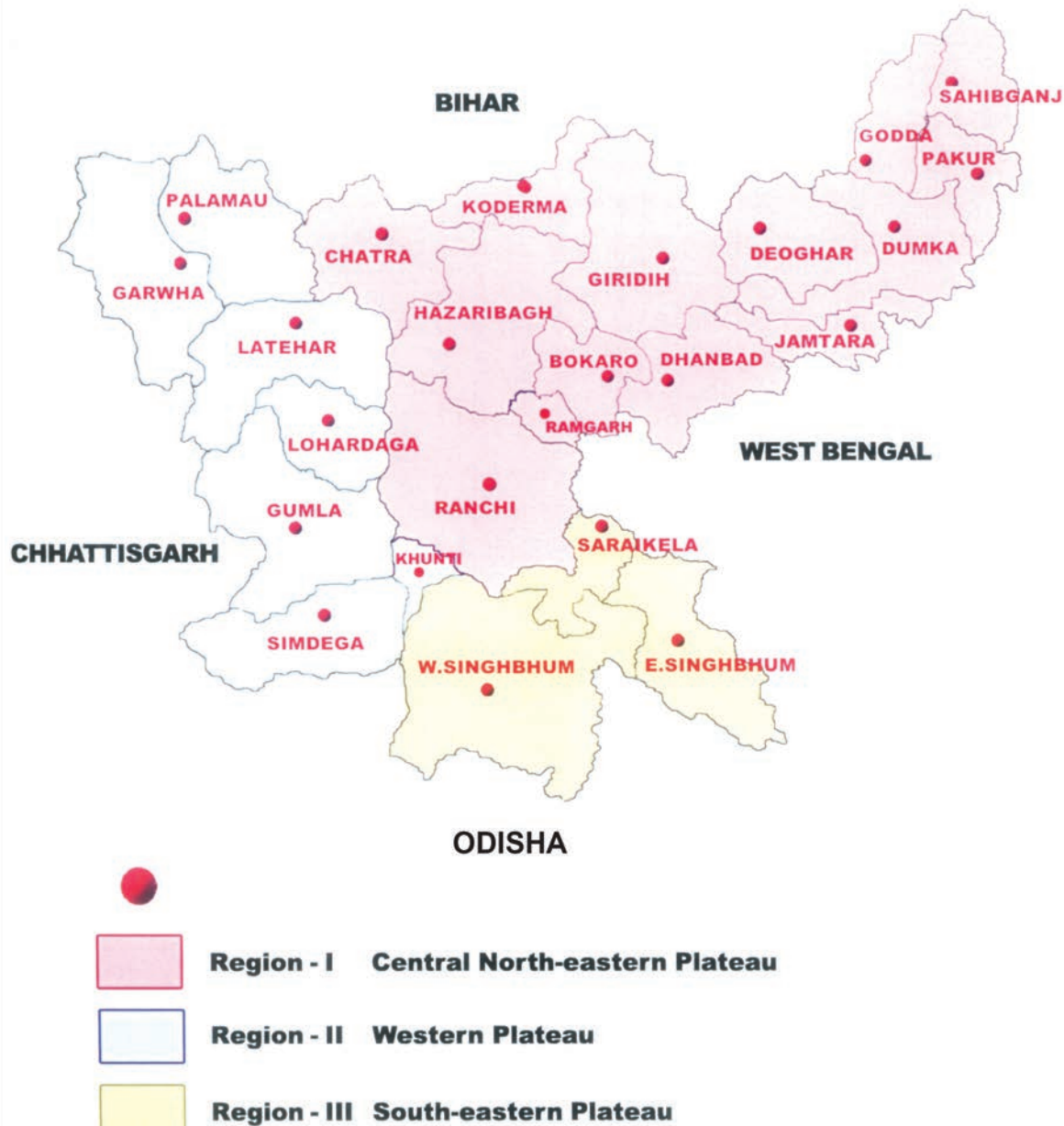
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AGRO-CLIMATIC REGIONS OF JHARKHAND



Region No.	Agro Climatic Region	District	Cropped area (000 ha)	Per cent irrigated area	Characteristic features
Region-1	Central North eastern Plateau	Chatra, Koderma, Hazaribag, Ramgarh, Bokaro, Dhanbad, Giridih, Deoghar, Dumka, Pakur, Godda, Jamtara, Sahibganj and Ranchi	851.05	11.40	Erratic and uneven distribution of rainfall. Coarse textured soils. Crust formation on the soil surface. Low water retention capacity of the soils. Lack of safe runoff disposal and drying of the tanks
Region-II	Western Plateau	Garhwa, Palamu, Latehar, Lohardaga, Simdega, Gumla and Khunti	670.03	12.60	Erratic and uneven distribution of rainfall. Low water retention capacity of the soils.
Region-III	South-eastern Plateau	East Singhbhum, West Singhbhum and Saraikele-Kharsawan	289.05	7.80	Uneven distribution of rainfall. Low water holding capacity, eroded soils. Shallow soil depth. Poor soil fertility.



बिरसा कृषि विश्वविद्यालय

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छोटानागपुर एवं संथाल परगना के किसानों की सामाजिक-आर्थिक दशा सुधारने के उद्देश्य से बिरसा कृषि विश्वविद्यालय की स्थापना वर्ष 1980 में हुई, जिसका विधिवत उद्घाटन तत्कालीन प्रधानमंत्री श्रीमती इंदिरा गांधी ने 26 जून, 1981 को किया। वर्तमान में इसके अन्तर्गत तीन संकाय और 11 महाविद्यालय - रांची कृषि महाविद्यालय, कांके, रांची; रांची पशुचिकित्सा महाविद्यालय, कांके, रांची; रांची वानिकी महाविद्यालय, कांके, रांची; जैव प्रौद्योगिकी महाविद्यालय, कांके, रांची; रबींद्रनाथ टैगोर कृषि महाविद्यालय, देवघर; कृषि महाविद्यालय, गढ़वा; तिलका मांझी कृषि महाविद्यालय, गोड्डा; फूलो ज्ञानो दुग्ध प्रौद्योगिकी महाविद्यालय, हंसडीहा, दुमकाय मत्स्य प्रौद्योगिकी महाविद्यालय, गुमलाय कृषि अभियंत्रण महाविद्यालय, कांके, रांची तथा उद्यान महाविद्यालय, खूंटपानी, पश्चिमी सिंहभूम चल रहे हैं। इसके अतिरिक्त दुमका, दारीसाई (पूर्वी सिंहभूम) और चियांकी (पलामू) में क्षेत्रीय अनुसंधान केन्द्र, गौरिया करमा (हजारीबाग) में बीज उत्पादन, अनुसंधान एवं प्रशिक्षण केन्द्र तथा आईसीएआर के सौजन्य से लातेहार, पलामू, गढ़वा, लोहरदगा, सिमडेगा, पूर्वी सिंहभूम, पश्चिमी सिंहभूम, सरायकेला-खरसाँवा, बोकारो, धनबाद, गिरिडीह, चतरा, जामताड़ा, दुमका, साहेबगंज और पाकुड़ में 16 कृषि विज्ञान केन्द्र बीएयू के अन्तर्गत चल रहे हैं, जो क्षेत्रीय समस्याओं और जरूरतों के अनुरूप काम करते हैं।

उद्देश्य : कृषि, पशुपालन एवं वानिकी संबंधी शिक्षा के माध्यम से मानव संसाधन विकास करना। विश्वविद्यालय द्वारा कृषि, पशुपालन एवं वानिकी क्षेत्रों में विकसित की गई तकनीकों तथा आधुनिक अद्यतन कृषि तकनीकों के प्रसार के माध्यम से किसानों की आजीविका एवं पोषण सुरक्षा को बढ़ावा एवं ग्रामीण स्तर पर रोजगार सृजन को बढ़ावा तथा किसानों की आय दुगुनी करने में तकनीकी मार्गदर्शन।

शिक्षण कार्यक्रम

- कृषि, पशुचिकित्सा एवं पशुपालन, वानिकी, दुग्ध प्रौद्योगिकी, मत्स्य प्रौद्योगिकी, कृषि अभियंत्रण एवं उद्यान विषयों में स्नातक पाठ्यक्रम
- कृषि, पशुचिकित्सा एवं पशुपालन एवं वानिकी के 31 विभागों में एमएससी और एमवीएससी पाठ्यक्रम तथा 23 विभागों में पीएचडी पाठ्यक्रम। इनके अतिरिक्त जैव प्रौद्योगिकी में एमएससी पाठ्यक्रम, कृषि अभियंत्रण में एमटेक पाठ्यक्रम तथा कृषि व्यवसाय प्रबंधन में मास्टर पाठ्यक्रम
- विश्वविद्यालय सेवा आयोग से मान्यता प्राप्त 16 विषयों में डिप्लोमा, प्रमाण - पत्र एवं बैचलर ऑफ वोकेशनल पाठ्यक्रम

किसानोपयोगी सेवाएँ

- कृषि, पशुचिकित्सा एवं पशुपालन, वानिकी, मधुमक्खी पालन, जल संरक्षण एवं यंत्रीकृत कृषि के संबंध में तकनीकी परामर्श सेवा
- फसल प्रबंधन, उत्पादन, रोग प्रबंधन, पोषण प्रबंधन, पशु-पक्षी पोषण, प्रबंधन, चिकित्सा एवं मत्स्यपालन संबंधी परामर्श सेवा
- कृषि, पशुपालन एवं वानिकी में विभिन्न अवधियों का सतत प्रशिक्षण कार्यक्रम
- कृषि प्रौद्योगिकी सूचना केन्द्र (एटिक) के माध्यम से कृषि उत्पादनों एवं साहित्य का विक्रय तथा किसान कॉल सेंटर द्वारा किसानों की कृषि संबंधी समस्याओं एवं जिज्ञासा का तकनीकी समाधान
- मिट्टी, जल तथा पौधों के रोग-कीट ग्रस्त नमूनों की जाँच
- विभिन्न फसलों के उन्नत बीज तथा बागवानी फसलों की पौध रोपण सामग्री का विक्रय

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