

# BAU

*At a Glance*



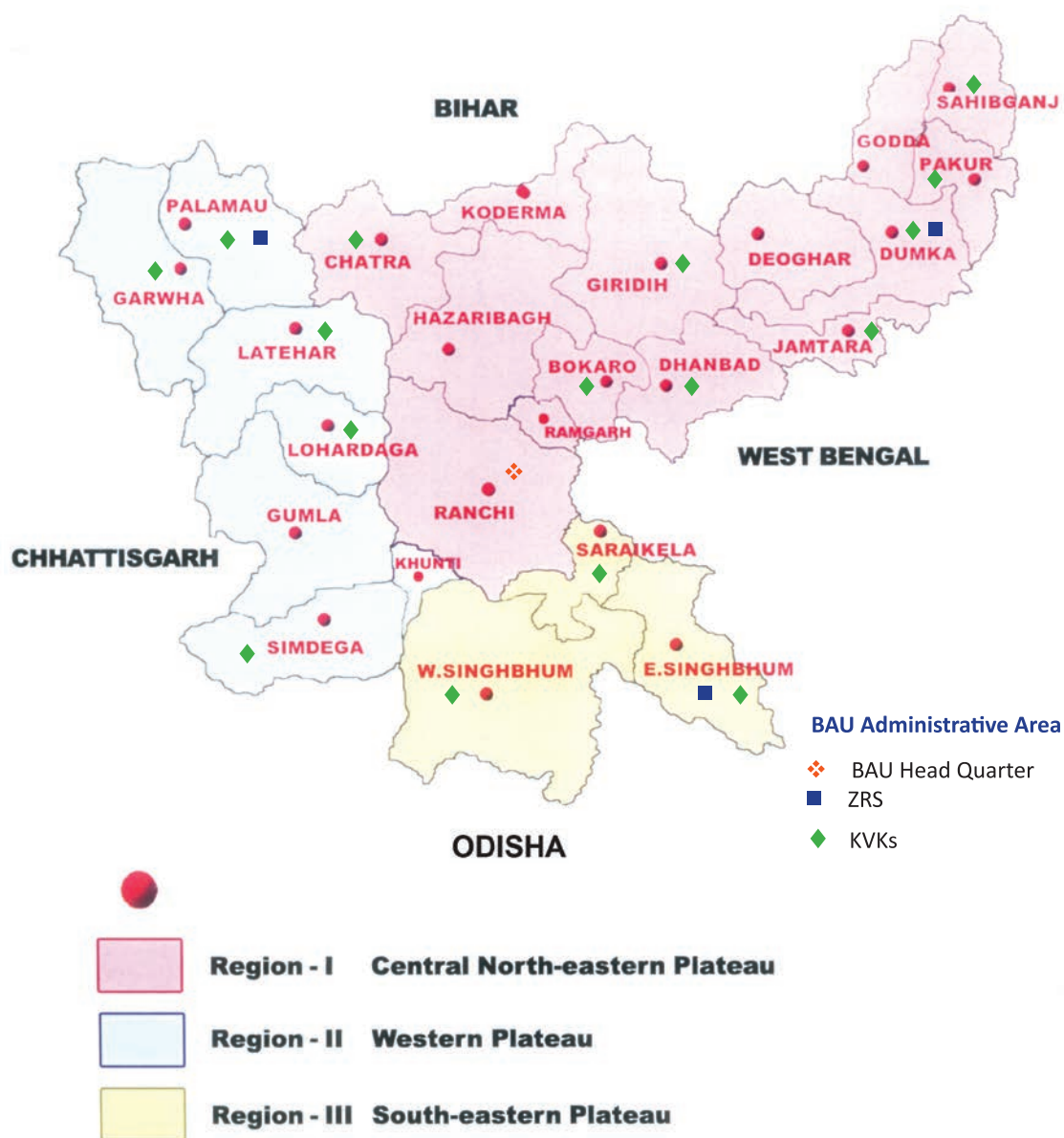
**BIRSA AGRICULTURAL UNIVERSITY**

**RANCHI - 834 006**

Website : [www.bauranchi.org](http://www.bauranchi.org)

2016

## 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 Saraikela-Kharsawan	289.05	7.80	Uneven distribution of rainfall. Low water holding capacity, eroded soils. Shallow soil depth. Poor soil fertility.

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KANKE, RANCHI - 834 006, Jharkhand, India



## FOREWORD

*The Birsa Agricultural University established in 1980 with mission to develop human resource in agricultural sciences and appropriate technologies to reduce poverty and hunger through enhanced food and nutritional security, income generation and environmental sustainability.*

*The transformational changes benefitting poor 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. There are numerous opportunities for enhancing production, productivity and profitability in agricultural sectors through technological interventions, knowledge empowerment and timely availability of critical inputs.*

*The strength of Jharkhand in horticultural crops (fruits, vegetable and flowers) medicinal plants, meaty animals (goat, pig, sheep and poultry) and fishery need to be tapped by developing secondary agriculture with value chain for a major shift from subsistence agriculture system to commercially profitable system.*

*The University through its faculties of Agriculture, Veterinary Science & A. H., Forestry, College of Biotechnology, the Zonal Agricultural Research Stations and the Krishi Vigyan Kendras with the support of the State Government and the Indian Council of Agricultural Research is constantly striving to promote agricultural education, research and extension mechanism to bring about noticeable improvements in livelihoods and food security.*

*This publication includes the work of the university, its essential features, contextual setting with future thrust. I thank all my colleagues immensely, who have contributed to bring out this booklet.*

Dr. Nitin Madan Kulkarni



# Content

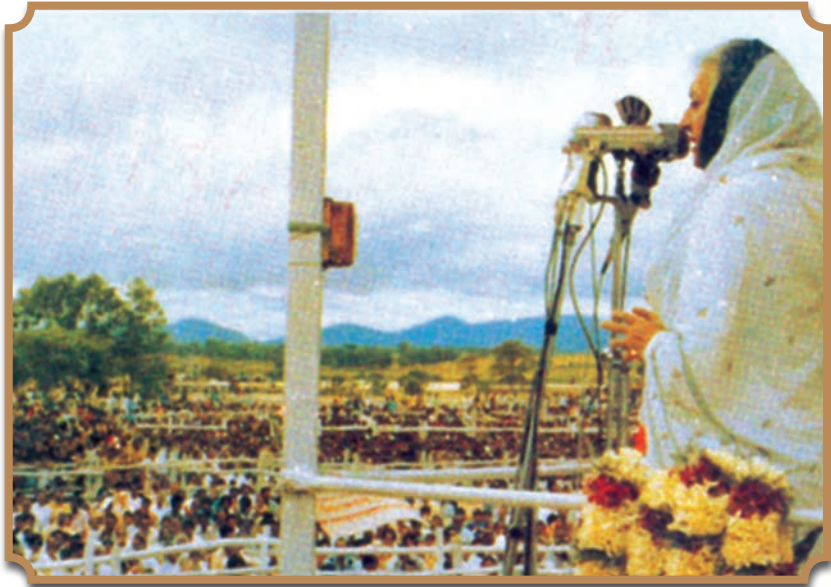
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Birsa Agricultural University, Ranchi was established in 1980 and formally inaugurated by the then Prime Minister of India Late. Smt. Indira Gandhi on 26th June, 1981.

The University has three faculties (Agriculture, Veterinary Science & A.H. and Forestry) besides a College of Biotechnology, three Zonal Agricultural Research Stations at Dumka, Darisai (East Singhbhum) and Chianki (Palamu) and 16 KrishiVigyanKendras in 16 out of 24 districts of the state. The University also has a seed production farm at Gauriakarma, Hazaribagh. A Centre of Agribusiness Management under Faculty of Agriculture is being operated by the University.



## 1. Mission Statement

To develop human resource in agriculture and allied sciences and develop appropriate technology to reduce poverty and hunger through enhanced food and nutritional security, income generation and environmental sustainability.

## 2. Mandate

- ❖ Develop academically qualified human resource through U.G., P.G., Ph.D. and other academic programmes.
- ❖ Conduct basic, strategic and need-based area-specific applied research in Agriculture, Veterinary Sciences, Forestry and Fisheries to develop technologies relevant to farming community for livelihood security and higher farm income.
- ❖ Support the State to optimize the use of inputs and exploit the genetic potential of crops, forestry and livestock resources.
- ❖ Promote the application of modern agricultural technology through entrepreneurship development and improve the agricultural situation of the state and socio-economic status of scheduled tribes and other weaker sections of the society through various extension programmes.
- ❖ Organise need-based training programmes for officials, extension functionaries of State Departments, other organisations and farmers.
- ❖ Develop collaborative linkages with Government Undertakings, National and International Organisations for sharing and improving university resources.
- ❖ Help and provide technical guidance to the State Govt. for development of agriculture in the State.



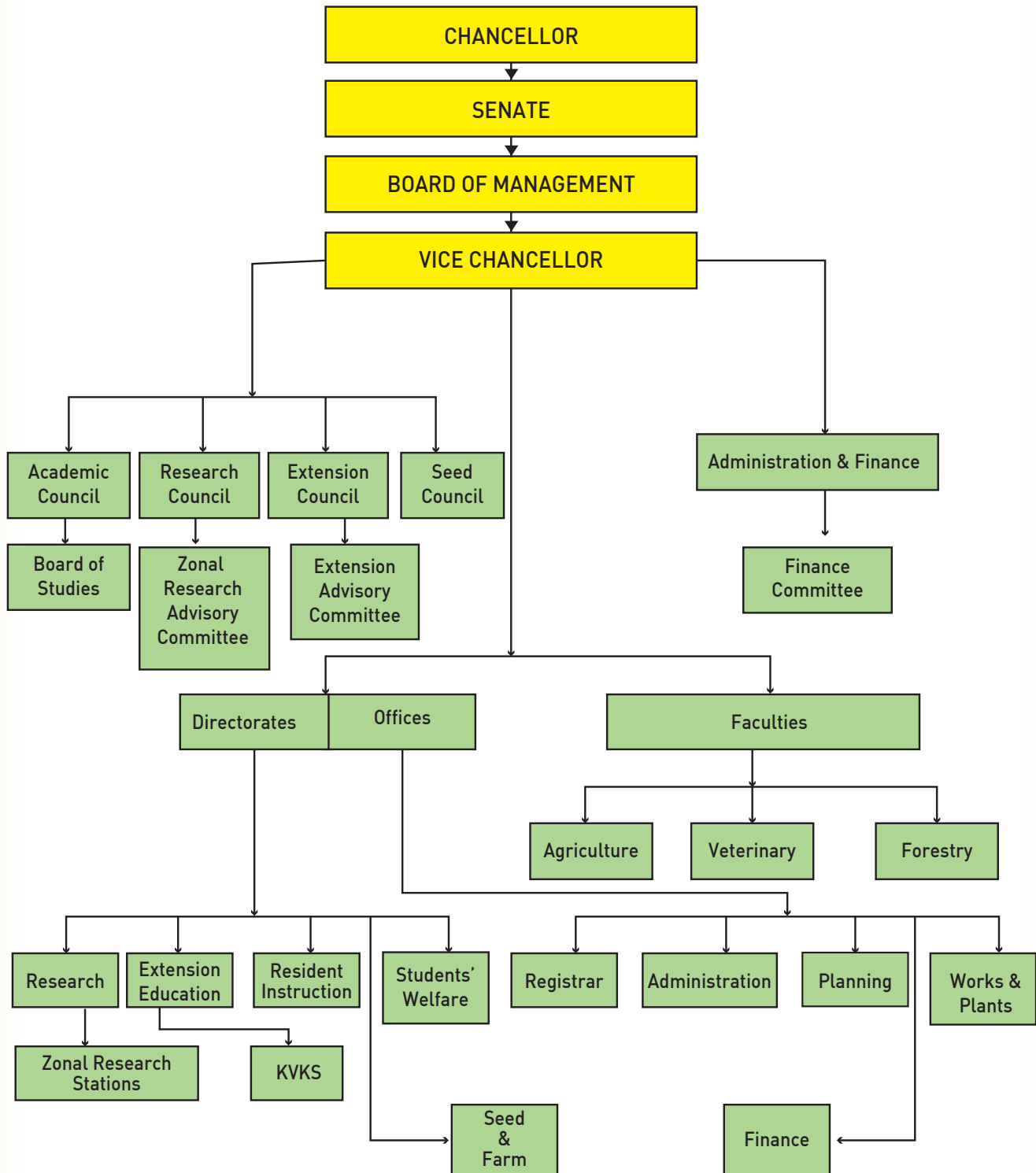
### 3. Administration

**The different administrative bodies of Birsa Agricultural University are**

- ❖ Senate
- ❖ Board of Management
- ❖ Academic Council
- ❖ Research Council
- ❖ Extension Education Council
- ❖ Seed Council
- ❖ Board of Studies of different faculties



## 4. Organisational set-up





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### 5. Physical Facilities

Institutional area and farm land

University at its Headquarters at Ranchi has four colleges i.e. Agriculture, Veterinary Science & A.H., Forestry and Biotechnology, which are spread over on an area of 606 ha. In addition to this, the University has altogether 1437 ha of land including 850 ha at Gauria Karma Farm, Hazaribagh. It has about 160 ha of land at different KVKs and 168 ha at three Zonal Agriculture Research Stations.

### 6. Academic Programme



**Agriculture College**



**College of Vety. Sci. & A. H.**



**College of Forestry**



**College of Biotechnology**

#### 6.1. Undergraduate programmes:

Sl. No.	Faculty	Programmes
1	Agriculture	(a) B.Sc. (Hons.) in Agriculture (b) Diploma in Food Processing (c) Certificate Course in Fruit and Vegetable Processing Technology





2	Veterinary Science and Animal Husbandry	(a) B. V. Sc. & A.H. (b) Diploma in Aquaculture (c) Certificate course in Aquaculture
3	Forestry	B.Sc. (Hons.) in Forestry

## 6.2. Post-Graduate Programme

### I. Doctoral Degree Programme (Ph.D.)

#### A. Faculty of Agriculture

- (1) Agricultural Economics
- (2) Agricultural Extension Education
- (3) Agronomy
- (4) Horticulture
- (9) Agricultural Physics & Meteorology
- (5) Plant Pathology
- (6) Plant Breeding & Genetics
- (7) Soil Science & Agricultural Chemistry
- (8) Entomology

#### B. Faculty of Veterinary Science & Animal Husbandry

- (1) Animal Genetics & Breeding
- (2) Vety. Animal Husbandry Extension Education
- (3) Animal Nutrition
- (4) Livestock Production & Management
- (5) Veterinary Biochemistry
- (6) Veterinary Gynaecology & Obstetrics
- (7) Veterinary Medicine
- (15) Veterinary Anatomy
- (8) Veterinary Microbiology
- (9) Veterinary Parasitology
- (10) Veterinary Pathology
- (11) Veterinary Pharmacology & Toxicology
- (12) Veterinary Physiology
- (13) Veterinary Public Health & Epidemiology
- (14) Veterinary Surgery & Radiology

#### C. Faculty of Forestry

- (1) Silviculture & Agro-forestry.

### II. Master's Degree Programme

#### A. Faculty of Agriculture

- (1) Agricultural Economics
- (2) Agricultural Entomology
- (3) Agricultural Extension Education
- (4) Agricultural Physics & Meteorology
- (5) Agricultural Statistics
- (6) Agronomy
- (7) Horticulture
- (8) Mycology & Plant Pathology
- (9) Plant, Breeding & Genetics
- (10) Soil Science & Agricultural Chemistry
- (11) M. Tech. (Agricultural Engineering)
- (12) MBA (Agribusiness)



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### B. Faculty of Veterinary Science & Animal Husbandry

- |   |  |
|---|--|
| (1) Animal Genetics & Breeding                | (9) Veterinary Microbiology                  |
| (2) Vety.Animal Husbandry Extension Education | (10) Veterinary Parasitology                 |
| (3) Animal Nutrition                          | (11) Veterinary Pathology                    |
| (4) Livestock Production & Management         | (12) Veterinary Pharmacology & Toxicology    |
| (5) Veterinary Anatomy                        | (13) Veterinary Physiology                   |
| (6) Veterinary Biochemistry                   | (14) Veterinary Public Health & Epidemiology |
| (7) Veterinary Gynaecology & Obstetrics       | (15) Veterinary Surgery & Radiology          |
| (8) Veterinary Medicine                       |  |

### C. Faculty of Forestry

- |                                   |                                  |
|-----------------------------------|----------------------------------|
| (1) Basic Science & Humanities    | (3) Natural Resource Management  |
| (2) Forest Products & Utilization | (4) Silviculture & Agro-forestry |

### D. College of Biotechnology

- |                          |                          |
|--------------------------|--------------------------|
| (1) Plant Biotechnology  | (3) Forest Biotechnology |
| (2) Animal Biotechnology |                          |

## 7. Student Intake

Programme	No. of Student	Programme	No. of Student
B.Sc.(Hons.) Agriculture	50	M.Sc.(Biotechnology)	12
B.V.Sc. & A.H.	40	M.Tech.(Ag. Engg.)	06
B.Sc.(Hons.) Forestry	26	M.B.A.(Agri- business)	30
M.Sc. (Ag.)	58	Ph.D. (Agriculture)	16
M.V.Sc.	78	Ph.D. (Veterinary)	24
M.Sc. (Forestry)	06	Ph.D. (Forestry)	02

## 8. Accreditation

The Faculty of Agriculture and a few departments of Faculty of Veterinary Science & A.H. had been accredited by the Indian Council of Agricultural Research (ICAR), New Delhi. The Faculty of Forestry had been accredited by the Indian Council of Forestry Research and Education.



## 9. Convocation

Fifth Convocation of Birsa Agricultural University was held on May 19, 2015. Smt. Droupadi Murmu, Hon'ble Governor of Jharkhand and Chancellor of Universities of Jharkhand presided over the function.

Hon'ble Dr. APJ Abdul Kalam, Former President of India and Chief Guest on the occasion delivered convocation address.

Hon'ble Sri Raghubar Das, Chief Minister of Jharkhand and Hon'ble Sri Randhir Kumar Singh, Minister of Agriculture also addressed on this occasion.

Doctor of Science *Honoris Causa* was conferred on Dr. Monkombu Sambasivan Swaminathan for his position, contribution and attainments in the field of global agriculture in absentia.

Altogether 635 students passing different U.G and P.G examinations were admitted for degrees, while 32 students were awarded University Gold Medals and 7 Chancellor's Gold Medals on this occasion.

The students who were awarded degrees include Ph.D (Agril.) – 27, Ph.D (Vety.) – 12, M. Sc. (Agril.) – 78, M. Sc. (Biotech) – 35, M.V.Sc. – 77, M.Sc. (Forestry) – 9, MBA (Agribusiness) – 39, B.Sc. Hons. (Agril.) – 174, B. V.Sc. & A.H. – 102 and B. Sc. (Forestry) – 82.



## 10. Library

Central library and three Faculty Libraries and Library of College of Biotechnology cater to the needs of students and teachers. Besides every department has a departmental library.



## 11. Biotechnology

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

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





## Tissue Culture

- ❖ Protocol development for micropropagation of various medicinal & aromatic plants, Horticultural crop and other crop plants
- ❖ *Agrobacterium rhizogenes* mediated hairy root induction in various medicinal plants followed by genetic and phytochemical evaluation
- ❖ Protocol establishment for Agrobacterium mediated transgenic plants of banana and finger millet
- ❖ Mass production of Banana, Bamboo, Aloe vera, Sugar cane and Safed musli for farmers
- ❖ Hands on training in plant tissue culture.



## 12. Experiential Learning Units

Nine experiential learning units have been established with the support of the ICAR to impart entrepreneurial training to students:

- ❖ 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



## 13. Student Welfare

### Student's Hostel for Boys & Girls

There are well equipped 10 boy hostels and 7 girl hostels with communication facilities.

### Sports and Games

There are 4 sports fields and Gymnasium with Gym items.





## Students Counseling & Placement Services

A centralized student counseling and placement cell under the control of Directorate of Student's Welfare is functional and being strengthened further.

## Anti-ragging Committee

Anti ragging communities are functional at Faculty and University level to check ragging of new students.

## 14. Instructional Livestock & Poultry Farms

To maintain the standard of teaching, research and training, eleven livestock and avian farms of different species (Cattle, Buffalo, Pig, Goat, Sheep, Rabbit, Poultry, Emu, Quail, Turkey and Guinea fowl) are being maintained in the premises of Veterinary Faculty.



SIROHI



T & D



CHHOTANAGPURI SHEEP



JHARSIM

## 15. Agri Entrepreneurship development & Profit Making Ventures

The University is operating a large number (→30) of profit making ventures on pilot basis to impart trainings and to develop Agril. Entrepreneurship. These ventures are as follows:

- ❖ Food processing and value addition unit with Ragi based bakery products.
- ❖ Bio-fertilizer production unit.
- ❖ Soil and water testing laboratory.
- ❖ Bio control unit.
- ❖ Mushroom production.





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- ❖ Apiary (Honey production & processing).
- ❖ Agricultural implements.
- ❖ Fishery.
- ❖ Hatchery Unit with Brooder House.
- ❖ Fish Hatchery Complex.
- ❖ Referral Veterinary Clinic with Advanced Diagnostic Lab.
- ❖ Dairy unit.
- ❖ Piggery Unit.
- ❖ Goatry Unit.
- ❖ Poultry Unit.
- ❖ Sheep unit.
- ❖ Quail unit.
- ❖ Gunea fowl unit.
- ❖ Seed production
- ❖ Medicinal & Aromatic Plants Cultivation
- ❖ Forest Products & Utilization Lab.
- ❖ Animal Feed Plant.



### 16. Memorial Lectures Organized annually

- ❖ Professor S. C. Mandal Memorial Lecture
- ❖ Sri Kartik Oraon Memorial Lecture



### 17. On going Research Activities

The University is having 62 research projects funded by the Indian Council of Agricultural Research, Govt. of India, DBT, DST, BARC, NRAA, MoA, International organizations (IRRI, ICRIAST, IPNI, IPI, CIPT, CYMMIT) and private sectors

#### Our research focus is on:

##### **Agriculture :**

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>❖ Germplasm Collection &amp; evaluation</li> <li>❖ Field and Horticultural crop improvement.</li> <li>❖ Natural Research Management</li> <li>❖ Farm Implements and Machinery</li> <li>❖ Post Harvest Technology with value addition</li> </ul> | <ul style="list-style-type: none"> <li>❖ Renewable Energy Source</li> <li>❖ Crop protection</li> <li>❖ Crop production</li> <li>❖ Integrated Farming System</li> <li>❖ Medicinal and Aromatic Plants</li> </ul> |
|---|---|



### Forestry

- ❖ Germplasm Collection & evaluation
- ❖ Agro-forestry models

### Animal Husbandry

- ❖ Livestock Improvements
- ❖ Livestock production System
- ❖ Livestock Health & Reproduction
- ❖ Livestock Nutrition

### Biotechnology

- ❖ Tissue Culture with protocol development
- ❖ Genomics
- ❖ Proteomics
- ❖ Gene mining
- ❖ Identification of molecular markers
- ❖ Molecular characterization

## Research Outcome in farmers' fields

- ❖ Forty seven high yielding varieties (HYV) of cereals, pulses and oilseeds have been released apart from several promising varieties identified for cultivation under different soil condition in Jharkhand. Five varieties of rice (Birsamati, Birsa Vikas Sugandha-1, Birsa Vikas Dhan-203, Birsa VikasDhan -110 and Birsa VikasDhan- 111), two of maize (Birsa Vikash Makka-2 and Suwan Composite-1), 2 of finger millet (A-404 and Birsa Marua-2), 1 of little millet (Birsa Gundli-1), 1 of wheat (Birsa Gehun-3), 6 of pulses (Birsa arhar-1, Birsa Urid-1, Birsa Soybean -1, Birsa Safed Soybean-2, Birsa Channa -3 and Birsa Kulthi-1) and 6 of oilseeds (Birsa Bold Groundnut, Birsa Niger-2, Birsa Niger-3, Pooja -1 (Niger), Linseed Divya and Mustard Shivani) are popular among farmers and being grown in vast stretches of cultivable area in the state. Some of the varieties are also very popular in neighboring states.
- ❖ Proposals for notification by CVRC for one variety of Chana (Birsa Chana-3), one of groundnut (Birsa Groundnut-4) and one of Soybean (Birsa Safed Soybean-2) have been submitted. These varieties have been released by the State Varietal Release Committee.
- ❖ Proposals for release for two varieties of Soybean (Birsa Soybean-3 and Birsa Soybean-4), one of Marua (Birsa Marua-3), one of Mango and one of Arvi have been prepared and likely to be considered by the State Varietal Release Committee shortly.
- ❖ A large number of varieties (33) of different crops (Pigeonpea, Groundnut, Finger millet, Soybean, Maize, Chickpea, Rice bean, Fababean, Winged bean, Amaranth, Chanopodium and Linseed) have been identified for high yield and other uniqueness. These are also to be released in a year or two.
- ❖ One variety of dual purpose (egg & meat) Chicken (JHARSIM) for backyard farming has been released in 2016.
- ❖ TxD breed of swine (pig) developed by the university is highly prolific, fast growing and remunerative. This breed is very popular among swine farmers in Jharkhand and also in entire eastern and north eastern states.
- ❖ Groundnut variety Birsa Bold having bold kernels, aflatoxine resistant with high confectionary and table value is in great demand.
- ❖ Soil acidity in vast area (→10 lakh Ha) is a major limiting factor in Jharkhand agriculture. Technologies developed by this university to neutralize soil acidity like lime, dolomite application in furrow is becoming popular day by day and farmers are getting benefit of it by virtue of having higher productivity, increased income and ultimately social upliftment.
- ❖ Integrated Farming System (IFS) Models by integrating different components like crops, livestock,



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mushroom, fishery, apiculture and horticulture for different farm sizes are being replicated by the farmers for assured return.

- ❖ Human Resource Development and knowledge empowerment through regular training programmes by the scientists of KrishiVigyanKendras located in each district is playing a significant role for adoption of improved technologies to convert food deficit (to the tune of →50%) Jharkhand state into food self sufficient one.
- ❖ Agricultural tools (dryland seeder, grubber, Birsa potato digger, maize sheller, Duch hoe, deep furrow seeder etc.) for farm operations developed by this university to reduce drudgery particularly for large number of women in agriculture are being adopted by farmers.
- ❖ Traditional Tribal Agricultural System and ITKs (Indigenous Traditional Knowledge) are being scientifically validated and refined for better return and to improve livelihood as well as nutritional security.
- ❖ Horticultural production and productivity particulars for vegetables (cauliflower, capsicum, french bean, radish, carrot and cabbage) of this state is much higher than that of other eastern states mainly due to the effort of the scientists and extension functionaries.
- ❖ Agronomical packages including dryland technologies for different crops developed have been adopted by the farmers.
- ❖ More than 15000 quintals of quality seed of different field crops and planting materials of high value agricultural (Fruits Crops) supplied to the farmers annually by this university through different agencies are also accelerating agriculture production in the state.
- ❖ *In situ* rain water conservation technology developed by this university is contributing significantly for accelerating vegetables production by the small farmers.



### 18. Seed Production

The average productivity of major field crops in Jharkhand is below the national averages, which indicates the support needs for agriculture in the state. Productivity of pulses seems to be higher than the national average but the productivity of oilseeds is far below the national level.

**Seed production status during 2013-14 to 2015-16 under the Directorate of Seed & Farms, BAU, Ranchi (in qtl.)**

Particulars	2013-14	2014-15	2015-16
Breeder seed	125.0	1758.0	179.0
Foundation seed	2883.0	3655.0	3162.0
Participatory seed production (CS/TL Seed)	13840.0	8225.0	12430.0
Planting material sugarcane	2900.0	2000.0	4305.0
Total	19748.0	15638.0	20076.0





## 19. Extension Education

The State has a network of KVK, ATMA, NGO and State Departments of Agriculture, Horticulture, Soil Conservation, Fishery, Animal Husbandry, Dairy etc. which cater to the needs of transfer of improved technologies for agricultural development.

**The University has the following extension education units:**  
**Agricultural Technology Information Centre (ATIC)**

**Major activities of ATIC include;**

- ❖ Providing agricultural technology and information
- ❖ Making available the extension literature in Hindi and other local languages
- ❖ Providing audio-visual services on agriculture-related subjects
- ❖ Web page services for computerized information
- ❖ Farmer advisory services from experts
- ❖ Farmers helpline services
- ❖ Providing diagnostic services
- ❖ Supply of quality agricultural inputs Kisan Call Centre (KCC)



The Kisan Call Centre has been established by the University to solve the day-to-day problems of farmers. The phone number of the Kisan Call Centre of BAU is 0651-2450955. The farmers of this locality can contact on this number for their problems during office hours. The KCC established by Govt. of India has Toll Free number that is 1551 through base line telephone and 18001801551 through cell phone. KCC is equipped with computer and internet facilities. L-1 agents are available to solve the farmers problems. The phone number of L-2 and L-3 agents are available at the KCC to help in case of such queries which are beyond the capacity of L1 agents.

### **Birsa Haryali Radio Station : A Community Radio Station**

A community Radio Station "Birsa Haryali Radio" was established in the ATIC premises with the help of Media Lab Asia and World Development Foundation, New Delhi. It started functioning on 3rd March 2008. The frequency allotted to this CRS is 107.8 FM. The coverage area of this CRS is 10 to 12 KM radius. One scientist is in-charge of this Radio Station. A Co-ordinator and a Radio Jockey have been engaged to run this CRS.

### **Krishi Vigyan Kendras (KVKs)**

KVKs have been established in all 24 districts of Jharkhand. The KVKs are responsible for assessment, refinement, demonstration, training and dissemination of technologies as per location-specific problems



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and needs. Out of 24 KVKs, 16 are under the administrative control of Birsa Agricultural University, Ranchi in the following districts :

Sl. No.	District	Location	Sl. No.	District	Location
1.	West Singhbhum	Jagannathpur	9.	Dhanbad	Baliapur
2.	Palamu	Chianki	10.	Chatra	Tapej
3.	Pakur	Maheshpur	11.	Garhwa	Garhwa
4.	Lohardaga	Kisko	12.	East Singhbhum	Darisai
5.	Bokaro	Petarwar	13.	Jamtara	Bena
6.	Dumka	Dumka	14.	Latehar	Balumath
7.	Giridih	Bengabad	15.	Simdega	Bano
8.	Sahibganj	Sahibganj	16.	Saraikela	Kharsawan

Apart from this, the university has been assigned the task by ICAR to monitor as well as to provide technological backstopping to KVKs including other eight KVKs belonging to NGOs, District Administration and ICAR Institutes which are situated in the districts of Deoghar, Ranchi, Gumla, Koderma, Godda, Hazaribagh, Khunti and Ramgarh.



### Training Unit

The Directorate of Extension Education is committed to provide capacity building of farmers, farm women, rural youth and extension functionaries of non-govt. and government agencies in agriculture, animal husbandry, forestry, extension management etc. With the objective to develop entrepreneurship among farm women, men and rural youth, various types of training programmes are conducted by the University.

### Boarding & Lodging Facilities of the Trainees at Farmers' Hostel

The Directorate of Extension Education has two trainee hostels called Kisan Bhawan and Krishak Bhawan. Kisan Bhawan has well furnished boarding facilities and a training hall for trainees. Krishak Bhawan has double, triple, bed rooms and dormitories and one big AC conference hall with 82 sitting capacity along with public address system. All types of equipment i.e. LCD projector, Laptop Computer and Photocopier are available at Krishak Bhawan. At a time 44 scientists and 72 farmers can stay in Krishak Bhawan. Directorate of Extension Education also provides boarding and lodging facilities at nominal charges to sister organizations to conduct training programmes.

### IARI-BAU Collaborative National Extension Programme

This Programme is under operation at BAU, Ranchi since 2007-08 (Rabi season). Since its inception the programme was implemented in 26 villages of five blocks in Ranchi district, namely, Silli, Nagri, Itki, Mandar and Kanke. The objectives of the programme are as follows:

- ❖ To test and demonstrate the agricultural technologies developed by IARI for production of quality seed by the farmers



- ❖ To provide quality seed to the farmers
- ❖ To impart training on agri-entrepreneurial activities on viable enterprises including post-harvest technologies

### Technologies transferred during the project period

- ❖ Altogether 9 varieties of rice were demonstrated in the villages. Among these varieties P-2511 was liked most by the farmers
- ❖ Eleven varieties of wheat were demonstrated in the villages. Among these varieties HI-1539, HD-2733 and HD-2967 were liked most by the farmers
- ❖ Three varieties of pigeon pea demonstrated in the villages.
- ❖ Five varieties of mustard demonstrated in the villages
- ❖ Two varieties of lentil and 2 varieties of gram were demonstrated in the villages

#### ***Project on Augmenting Mustard Production among Tribal Farmers of Jharkhand for Sustainable Livelihood Security***

The project on “Augmenting Mustard Production among Tribal Farmers of Jharkhand for Sustainable Livelihood Security” was initiated in collaboration with Directorate of Rapeseed and Mustard Research, Bharatpur (Rajasthan) in 2011.

#### **The objectives of the project are as follows:-**

- ❖ To evaluate rapeseed-mustard cultivars in order to improve the cultivation methods of tribal farmers
- ❖ To undertake capacity building programmes for knowledge and skill development of tribal farmers and facilitate adoption of rapeseed-mustard production technology;
- ❖ To increase rapeseed-mustard production in tribal areas and reduce the poverty among tribal farmers.

On-farm demonstrations on 10 rapeseed-mustard varieties, namely, *NRCDR-2, NRCHB-101, RH-749, Pusa Bold, Shivani, NPJ-112, 113, Pusa Jay Kisan, Rajendra Suflam, Pusa Vijaya* were conducted in 410ha. area in five districts, ie Ranchi, Bokaro, Lohardaga, E. Singhbhum and West Singhbhum. Apart from on farm demonstration, training, exposure visit, field days etc. were conducted for capacity building of the farmers.

The improved varieties of rapeseed and mustard and other components of the package of practice introduced through TSP project during Rabi season have improved the chances of farmers for increasing their income and sustaining the livelihoods. It will also increase the coverage of rapeseed and mustard and also increase cropping intensity in Jharkhand.

#### **Satellite Veterinary Centre**

- ❖ To provide veterinary clinical services to the livestock farmers.
- ❖ To create awareness among livestock farmers of the





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preventive and curative measures, feeding and breeding problems and issues associated with animal husbandry.

- ❖ To provide an opportunity to the students undergoing training under various U.G. and P.G. programmes in the field of Veterinary Sciences and Animal Husbandry.

### Rural Agricultural Work Experience (RAWE) Programme



- ❖ RAWE is one of the most important curricular programme of B.Sc. (Ag.) which provides experiential learning and hands on training. It has emerged as a viable method for building confidence among the undergraduates to deal with real work situation and for better employability. RAWE has a weightage of 20 credit hours.
- ❖ Students visit KrishiVigyan Kendra, NGOs, Zonal Research Stations, ICAR Institutions & Agricultural Development Agencies & gather relevant information. For 3 to 4 months, they stay in Zonal Stations & KVK & visit rural areas & interact with farmers.
- ❖ Every student of Forestry Faculty learnt the techniques of Tree Nursery Management, Sustainable Management of Forests, 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 Identification of Diseases & Pest of trees including their control Methods.
- ❖ The students of Forestry 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.



### NSS Activity

- ❖ This is an important activity, where students develop linkages with rural communities & help them through education tree planting, exposure visits. This interaction helps in a better understanding and develop an attitude of service towards farm families.



## 20. Publication

Sl. No.	Name of Publication	Frequency
1	Birsa Kisan Diary	Annual
2	Pathari Krishi	Quarterly
3	Journal of Research BAU	Half Yearly
4	BAU News Letter	Quarterly
5	ZENITH (Students Magazine)	Annual

## 21. IT Based Initiatives

- ❖ • The major objectives of this initiatives are development of mobile-based agricultural information access system in local languages through SMS, IVRS for agricultural information



system, content creation pertaining to agriculture, veterinary and forestry for use by the farmers, enhancement of the portal (with proper hierarchy and usability) for easy uploading of picture or movie of unidentified problems for further investigation and solution dissemination, development of offline delivery tool of the above-mentioned information through LCMS, field testing and validation of the developed systems.

- ❖ BAU website : [www.bauranchi.org](http://www.bauranchi.org)

## 22. Business Planning and Development

With the aim of commercializing technologies in agriculture, the Business Planning and Development unit has been established with the support of the Indian Council of Agricultural Research under National Agriculture Innovative Project. It aims to provide technical support to farmers to develop agril. entrepreneurships. This unit has developed facilities for incubation. Presently this unit has been converted as a society named BPD-BAU Society under Societies Act Registration. It provides business consultancy, technical consultancy, training and capacity building.

## 23. Collaboration and Linkages

### NATIONAL

- ❖ Ministry of Agriculture, Govt. of India
- ❖ Indian Council of Agriculture Research, New Delhi



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- ❖ ICAR-Indian Agricultural Research Institute (IARI), New Delhi
- ❖ ICAR-Indian Institute of Natural Resins and Gums (IINRG), Ranchi
- ❖ Birla Institute of Technology, Mesra, Ranchi
- ❖ Central Institute of Medicinal and Aromatic Plants (CIMAP), Lucknow
- ❖ ICAR-Indian Veterinary Research Institute, Izatnagar
- ❖ ICAR-National Dairy Research Institute, Karnal
- ❖ ICAR-Indian Institute of Pulses Research, Kanpur
- ❖ ICAR-National Bureau of Animal Genetic Resources, Karnal, Haryana
- ❖ ICAR-National Bureau of Plant Genetic Resources, Delhi
- ❖ ICAR-Central Institute for Women in Agriculture, Bhubaneswar, Odisha
- ❖ ICAR-Indian Agricultural Statistics Research Institute, New Delhi
- ❖ International Plant Nutrition Institute (IPNI), India Programme
- ❖ NBSS & LUP (ICAR), Nagpur
- ❖ Fertilizer Association of India, New Delhi
- ❖ SAIL (R&D Centre), Ranchi
- ❖ National Horticulture 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, Kolkata
- ❖ Central Mine Planning and Design Institute (CMPDI), Ranchi

## INTERNATIONAL

- ❖ Asia Pacific Association of Agricultural Research Institute (APAARI), 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)
- ❖ International Livestock Research Institute (ILRI), Syria
- ❖ International Plant Nutrition Institute, Georgia, USA
- ❖ Rockefeller Foundation, USA
- ❖ Asian Vegetable Research Development Centre (AVRDC), Taiwan
- ❖ International Potash Institute, Switzerland
- ❖ Colombia Water Centre, New York



## 24. Future Thrust

Birsa Agricultural University 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

- ❖ Develop Birsa Agricultural University as a front ranking University to produce quality human resource 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, fruits etc.
- ❖ Develop suitable agronomical practices for different field 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.



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