Birsa Jayanti Celebration 2020 at BAU, Ranchi

ANNUAL REPORT 2020-21

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Birsa Agricultural University, Ranchi
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Dignitaries of 40th Kharif and Rabi Research Council Meeting of BAU, Ranchi

Dignitaries released the Research Highlight during 40th Kharif and Rabi Research Council Meeting

Hon'ble Vice Chancellor, BAU, Dr. O N Singh inaugurated the 34th Extension Education Council Meeting at BAU, Ranchi

Dignitaries released the Extension Highlights during 34th Extension Education Council Meeting at BAU, Ranchi

Dignitaries released the Birsa Kisan Diary, 2021 during New Year Programme at BAU, Ranchi

Hon'ble Governor, Jharkhand, Smt. Draupadi Murmu inaugurated the Agro Tech Kisan Mela 2021

BAU, Vice-Chancellor felicitated Hon'ble Governor of Jharkhand, Smt. Draupadi Murmu during inauguration

Hon'ble Governor, Jharkhand, Smt. Draupadi Murmu felicitated Shri Sukhram Munda, Grand Son of Birsa Munda

BAU, VC, Dr. O.N. Singh meet with Hon'ble Chief Minister Shri Hemant Soren Ji

Hon'ble Governor, Jharkhand, Smt. Draupadi Murmu visited Horticulture Show/Exhibition

Dignitaries released the book on Annual Husbandry Extension Activities

Hon'ble Vice Chancellor, BAU, Dr. O N Singh addressed XVIIth Seed Council Meeting at BAU, Ranchi

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KVKs Scientists with Director Research & Director Extension Education during Sensitization Programme on Weather Based Agro - Advisory under DAMU

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Dignitaries released the extension highlights during 34th Extension Education Council Meeting at BAU, Ranchi

Dignitaries released the book on Annual Husbandry Extension Activities
This Annual report of Birsa Agricultural University is an important compilation of the significant events and achievements of Teaching, Research and Extension activities of the University during 2020-21. The concerted efforts made by the university in the areas of agriculture, animal sciences, forestry, biotechnology, dairy, fishery, poultry, beekeeping, agricultural engineering, mushroom, horticulture, forestry and food processing are aimed at bringing improvement in the socio-economic conditions of farmers.

Continued support of the Government of Jharkhand, Indian Council of Agricultural Research, various departments of Government of India and other national-international organizations has helped the University to accelerate its efforts to fulfill its mandates. The kind guidance received from Hon’ble Chancellor, Director General (ICAR) and Board of Management have been of great help to the University in achieving its goals.

The University has introduced innovations in instructional technology and improved academic environment through co-curricular and extra-curricular activities. Entrepreneurial skills are inculcated amongst the students under revamped experiential learning programme (ELP).

Against the total sanctioned seats in different UG courses, a total of 445 students were admitted. Altogether 110 students were admitted in different Master’s and Ph.D. programmes.

As far as research achievements are concerned, the University has recently recommended 9 promising genotype, viz. Birsa Marua -3 (BBM-10), Birsa Soybean (BAUS – 40), Linseed variety
University has also released 11 new low-cost Agricultural Implements. The research programme carried out by the Scientists of the University will bring out transformational changes in the scenario of Jharkhand Agriculture.

The Directorate of Extension Education of the University has re-oriented, strengthened and streamlined itself to cater to the present and future needs of farmers, entrepreneurs, extension functionaries with special emphasis on area expansion of pulses, oilseeds, hi-tech horticultural crops, agro-forestry, livestock and fish production towards doubling farmers’ income through the technological backstopping to all 24 Krishi Vigyan Kendras of the state. Transfer of technology activities of KVKs have promoted various technologies under OFT(176), Front Line Demonstration (840) and CFLD on oilseeds (2954 ha) and pulses (789 ha) and conducted training programme (1944), produced quality seeds (3957.08 q), tested soil samples (13970) and developed bee keeping entrepreneurship in tribal villages (600) in addition to online awareness, skill and entrepreneurship development training programme for practicing farmers and migrant workers (21100) during the COVID-19 Pandemic situation.

Directorate of Seed and Farms of the University produced over 75 q. of Breeder seeds, 3126.3 q. of Foundation seeds & 66.4 q. of certified seeds. Under Seed Hub Programme 2834 q. of FS & CS of pulses & oilseeds were produced. With the involvement of KVKs, ZARSs and Gauria Karma Farm in Seed hub, Seed Village and Seed Production Programme, we hope that Jharkhand will achieve self reliance on quality seed requirement front shortly.

BAU has ICAR-World Bank funded NAHEP for development of Centre of Excellence on Integrated Farming System. This project promotes involvement of PG & Ph.D. students in higher education, scientists’ advanced technical training/exposure visits to National and International Institutes, capacity building of the faculty, organizes guest lecturers of eminent scientists on recent technological advances.

The future thrust of the University is to develop BAU as a front ranking Agricultural University of Eastern India. I extend my heartfelt thanks to all those who have contributed directly or indirectly in compilation of this document. I hope, this Annual Report will be an important document for all the stake holders. I compliment the team involved in bringing out this document in time.
Birsa Agricultural University, Ranchi has organized a National seminar on the topic “Crop breeding for wider adaptation” during December, 12-13, 2020 under the banner of Ranchi Chapter of Indian Society of Genetics & Plant Breeding (ISGPB), New Delhi on hybrid mode (online and offline). The objective of the seminar was to sensitize the issue among the young researchers of the region in this particular area of research.

Dr. O.N. Singh, Hon’ble Vice Chancellor, BAU was the chief guest, and was online presided over by Dr. B. D. Singh, the President of Ranchi Chapter, Indian Society of Genetics & Plant Breeding (ISGPB), New Delhi. Dr. G. P. Singh, President of the most prestigious, ISGPB, New Delhi also blessed the function online. Dr. Z. A. Haider, Secretary of ISGPB, Ranchi Chapter welcomed the national President of the society, Dr. G. P. Singh and lead and invited speakers of the national seminar, who connected online from different parts of the country. Dr. B. D. Singh, eminent Biotechnologist and President of the Chapter of ISGPB in his inaugural lecture spoke on “DBT draft gene editing guidelines”.

In this two days seminar more than 80 research papers have been presented along with lead lectures by eminent scientists all over the country in 5 different themes. The seminar was concluded with some valuable recommendation by the expert of various sessions.
Birsa Marua-3 (BBM-10)
- Pedigree - VL 253 X IE 2826
- High yielding - 27-30 qtl/ha
- Maturity – 110-115 days
- Moisture stress tolerance
- Tolerant to brown spot, leaf blight and foot rot
- Registration No. IC 614775

Birsa Arhar-2 (BAUPP 09-22)
- Pedigree : T7 X PI 397430 II
- Breeding Method used: Single pod descent method
- Yield potential : 28 q/ha
- Protein content -22.5 
- Maturity : 240-250 days
- Elongated brown colored seed
- Wilt resistant
- Tolerant to Insect & Pest.

Birsa Urad-2 (RUB 12-02)
- Pedigree : Pant U19 x Mash 114 (pod length)
- Yield potential : 12 q/ha
- Maturity : 82-85 days
- Profuse Branching, long pod (6-7 seeds)
- Tolerant to Powdery Mildew
- Moderately resistant to defoliators and Nematodes.
- Hairiness, Larger brown colour seed

Birsa soybean-3 (BAUS-40)
- Pedigree : Bragg x JS71-05
- Registration No. – IC 614776
- Yield potential : 28 q/ha
- Maturity : 115-120 days
- Tolerant to drought condition.
- Resistant to pod blight and bacterial pustules.
- Resistant to defoliators, pod borers and stem fly.
- Contain 37 % protein and 19.5 % of oil.
**Birsa Baby Corn-1**

- Pedigree: Tested as BVM-2 (Release on 2005)
- Yield potential: 16.7 q/ha
- Maturity: 50-65 days
- Protein content: 10.3%
- Moderately resistant to Maydis & Turcicum leaf blight

**LINSEED - Divya (BAU-06-03)**

The proposed variety also recorded higher oil yield (32.05%) than national check and 13.81% to zonal check. It is tolerance to wilt, rust and alternaria blight, resistant to powdery mildew and moderately resistant to budfly. Linseed oil poses a very healthy fatty acid profile, particularly Omega 3 Alpha Leolic acid and consist 58% in most of linseed variety. The proposed variety Divya (BAU-06-03) gave high Omega 3 (60.56%) lenolenic acid provides beneficial effects in numerous clinic conditions such as, cardiovascular disease. Variety of linseed notified and released by CVRC, vide Gazette Notification S.O. No. 2238 (E) dated 29 June, 2016, Ministry of Agriculture Cooperation & Farmers Welfare, Govt. of India, New Delhi.

**PRIYAM BAU (2012-01)**

Average seed yield of variety Priyam (BAU-2012-1) was 1253 kg/ha which is 83.59 and 10.49 percent higher than National check and Zonal check and Priyam (BAU-2012-1) exhibited highly resistant to bud fly and rust where as resistant to powdery mildew, alternaria blight and wilt in comparison to National check and Zonal Check. Variety of linseed Notified & Released by CVRC vide Gazette S.O. No. 2458 (E) dated 25.08.2017, Ministry of Agriculture Cooperation & Farmers Welfare, Govt. of India, New Delhi.

**Birsa Tisi-1 (BAU-15-03)**

Recorded seed yield of 1141 kg/ha which showed 20.91% superiority over National check whereas 30.97% superiority over Zonal check and resistance to alternaria blight, rust and wilt as well as moderately resistant to powdery mildew and bud fly.
DEVELOPED TECHNOLOGIES ON AGRICULTURAL IMPLEMENTS

1. **Birsa Ridger**

Developers / Scientist(s) Associated: Dr. A.K. Sinha, Dr. S. Quraishi, Dr. Uttam Kumar and Er. D.K. Rusia

Birsa Ridger is suitable for tillage operation. The draft requirement of the Animal drawn Birsa Ridger was within the pulling capacity of one pair of bullocks available in this state. The average field efficiency for Birsa ridger was 60% whereas the soil manipulation and inversion were 48.63% and 77%, respectively. Field capacity was 0.167 ha/day. Birsa ridger performs all functions of country plough with added efficiency and advantages. Birsa ridger saves about 9% labour and operation time and 5% cost of operation compared to the conventional method of using country plough.

2. **Birsa Seed drill**

Developers / Scientist(s) Associated: Dr. A.K. Sinha, Dr. S. Quraishi, Dr. Uttam Kumar and Er. D.K. Rusia

Birsa Seed drill is suitable for sowing paddy, ragi, wheat, linseed, gram, safflower and other small sized seeds. In this machine, seeds are dropped by a rubber agitator and slit hole while the fertilizer is dropped manually using the funnel provided for that purpose. Only the ground wheel drives the agitator for the seeds and a small ridger type furrow opener is used to reduce the draft on the animal. Birsa seed-cum-fertilizer drill saves 56% labour and operating time and 25% on cost of operation compared to conventional method of sowing behind country plough. It also results in 14 to 27% increase in yield compared to sowing by conventional method.

3. **Birsa Potato digger**

Developers / Scientist(s) Associated: Dr. A.K. Sinha, Dr. S. Quraishi, Dr. Uttam Kumar and Er. D.K. Rusia

Animal drawn Birsa Potato digger useful for digging and exposing potato tubers. It consists of a ridger shaped bottom with welded extension rods on its wings. These rods help in separation of soil and dirt from the potato tubers. A handle is provided at the rear for guiding the implement while in operation. It is suitable for digging potato tubers after removal of vines from the field. It saves 40 per cent labour and operating time and 18% on cost of operation compared to conventional method of digging with spade. It also results in reduction of 11.3% losses compared to conventional method of digging with spade.
4. Birsa Lac Sheller

Scientist(s) Associated: Dr. A.K. Sinha, Dr. S. Quraishi and Dr. Uttam Kumar

BAU lac shellers (cylinder type, blade type and peg type lac shellers) were evaluated using kusum, palas and ber sticks on which resin were accumulated. Tests, were conducted to assess the shelling output, quality of work in terms of different sizes of resin, quantity of resin left on sticks after shelling, cost of operation, resin moisture etc. and were compared with that of conventional method of shelling by dabia. It is suitable for removing the resin from all types of lac sticks. It saves 29 per cent labour and 37 per cent on cost of operation and is 2.5 times faster, compared to conventional method of manual scrapping with the help of special knife (dabia). The quality of lac is not affected by the use of lac shellers.

(i) Cylinder type
(ii) Blade type
(iii) Peg type
(iii) Peg type with seating arrangement

5. Birsa Dryland Weeder

Developers /Scientist(s) Associated: Dr. A.K. Sinha, Dr. S. Quraishi, Dr. Uttam Kumar and Er. D.K. Rusia

Birsa Dryland Weeder is suited for weeding of crops sown in rows and can easily be operated by men as well as women due to its lesser draft requirement. The weeder is used for removing weeds in vegetable gardens, basins of orchard trees and vineyard plantations particularly in dryland area. It is also used for breaking the soil crust and creation of soil mulch. Dryland Weeder is suited for weeding of crops sown in rows and can easily be operated by men as well as women due to its lesser draft requirement. Its weeding efficiency is 79.05%. The man-hr requirement per ha
for 2 laborers (weeding by dryland weeder) is 110.6 hrs. The average cost of weeding per ha comes out to be about Rs. 16500. Field capacity of this machine is 0.072 to 0.08 ha per day.

6. Birsa Dutch Hoe

Developers / Scientist(s) Associated: Dr. A.K. Sinha, Dr. S. Quraishi, Dr. Uttam Kumar and Er. D.K. Rusia

Birsa Dutch Hoe is suited for interculture / weeding of crops sown in rows and can easily be operated by men as well as women due to its lesser draft requirement. Dutch hoe consists of a working blade having two ends. One end is usually flat and the other has a triangular shape or phorhas prongs for raking or collection of weeds. The blade is fabricated from medium carbon steel and hardened to 40-45 HRC. The working blade has an eye to which a wooden handle is attached. The function of the rake is to break the soil crust for aeration. The tool can be operated in the crop rows. For weeding, interculture and earthing in the vegetable gardens, flower crops, nurseries, orchards etc. Average field capacity of this machine is 0.036 ha per day with weeding efficiency 75.62%. The man-hr requirement per ha for 2 laborers (interculture by dutch hoe) is 444 hrs. The average cost of weeding with dutch hoe for one hectare area is about Rs. 19300/- whereas by traditional method (by Khurpi) cost was Rs. 38175/-. As compared to local khurpi efficiency and economics of dutch hoe is about and half times better.

7. Birsa SRI Marker

Developers / Scientist(s) Associated: Dr. Uttam Kumar, Prof. Anil Kumar and Late Er. Birendra Oraon

A simple and low cost device to marking at desired spacing i.e. 25 cm x 25 cm for transplanting of rice seedlings under SRI cultivation has been developed. The marker consists of axle shaft, 4-ground wheels, marker flat, line marker, pointer and a handle. In this marker four ground wheels separated at a spacing of 250 mm were mounted longitudinally on a single shaft. Six rods are provided at a spacing of 250 mm along the circumference at each wheel so as to maintain a plant to plant spacing of 250 mm in the field. Six pointers were provided at each cross point of rod on each ground wheel to mark the point for transplanting. Two line markers are placed in both the ends to guide the marker to operate in the same line in return. The weight of the total assembly is about 11 kg. Field capacity of the marker was found to be 0.03 ha/h with field efficiency of 73.17 per cent at an operating speed of 0.41 km/h. By using this marker, the cost of marking was Rs 417 per hectare whereas it is Rs 1000 per hectare by the conventional system of marking under SRI cultivation.

8. Birsa Seed-cum-Fertilizer Drill

Developers / Scientist(s) Associated: Dr. Uttam Kumar, Er. Roshan Hapadgara and Er. Birendra Oraon

Birsa Seed-cum-Fertilizer Drill consists of frame, seed and fertilizer hopper, seed and fertilizer metering mechanism, shovel type of furrow openers, power transmission system, metering mechanism for seed as well as fertilizer, delivery tubes, adjusting lever, hitch etc. The developed seed drill have overall dimension of 600 mm x 420 mm x 900 mm, height of hopper from ground level was 900 mm and total weight of the machine was 45 kg. The developed Birsa Seed-cum-Fertilizer Drill worked satisfactorily in actual field condition for sowing of different crop seeds. It will be useful for small and marginal farmers of tribal areas.
of Jharkhand. The draft requirement of
developed machine was within the pulling
capacity of local small/medium bullocks.
Only one operator is required to operate
the machine. The machine can be easily
transported from one field to another field.
The seed drill can be used to sow the seeds
on the field at required row to row spacing
and simultaneously place the fertilizer in
the same row. The average draft and power
requirement of the developed seed-cum-fertilizer drill were 416.74 N and 0.372 kW, respectively. The
average effective field capacity and field efficiency of the developed seed-cum-fertilizer drill were 0.069
ha/h and 65.9%, respectively at an average speed of 2.37 km/h.

9. **Birsa Zero till Seed drill**

Developers / Scientist(s) Associated: Dr. Uttam Kumar, Er. Birendra Oraon and Er. D.K. Rusia

For small plots and scarcity of animal
power, manually operated Birsa zero till
seed drill is best suitable for sowing of
different crops. Birsa zero till seed drill is
suitable for sowing wheat and gram. The
machine saves a lot of energy and time,
as it avoids seed-bed preparation and
delay of wheat-sowing. The seed metering
mechanism receives drive motion from the
ground wheel through chain and sprockets.
Seed metering unit consists of a box with slit hole and rubber agitator which is worked with the help of
a lugged ground wheel provided on the right side. With its mechanical metering device it can be used for
wheat crop. It provides good crop stand with the recommended seed rate. The device for the adjustment
of depth of seed placement enables it to be used in varying conditions. Birsa zero till seed drill saves
about 30% labour and operating time and 50% on cost of operation compared to conventional method
of sowing. In addition, it resulted in increased yield, as mentioned above, compared to reduced and
conventional tillage. So during peak period of sowing and scarcity of labour zero till seed drills are most
suitable method of sowing.

10. **Birsa Bullock Cart**

Developers / Scientist(s) Associated: Dr. Uttam Kumar and Er. D.K. Rusia

Birsa Bullock Cart with brake
system was found suitable for
the draft capacity of the state.
Brakes on both wheels have been
provided individually so that
overturning and returning back
of the cart can be minimize. Two
individual springs with spring
constant 20 KN/m (approx.)
were attached in the each brake.
These individual brakes can be operated by the operator’s leg individually as per requirement. Bullock
cart was fabricated using mild steel as material. Mild steel is used as it is able to withstand the loads that
will occur against bullock cart components and also due to its low cost. With the help of brake system
we can control the individual wheel of the cart as per our requirement in plain road as well as in sloppy
lands. With the brake system, drudgery on the animals as well operator has been minimizes. Overturning
problem can also be minimized during sloppy land on downward direction. Bullock cart-man likes the bullock cart specially the brake system.

The draft observed for tar road and kachha road in plain surface were 350 N and 400 N, respectively. It has been observed that in sloppy land i.e. upward direction draft increased whereas in downward direction draft decreased. Power requirement for tar road and kachha road in plain surface were 0.28 kW and 0.29 kW, respectively. It has been observed that in sloppy land i.e. upward direction as well as in downward direction power requirement decreased. The increased respiration rate and pulse rate observed after two hours of continuous work on tar and kachha road is within the safe limit of fatigue score.

11. Birsa Yoke

Developers / Scientist(s) Associated: Dr. Uttam Kumar and Er. D.K. Rusia

Considering the need of operationwise, two designs of yokes have been fabricated suitable for animals of Jharkhand state. Birsa yokes can be used for tillage, intercultural as well as cart purpose. Weight of both the yokes is about 7 kg. With the use of Birsa yoke, the load is evenly distributed about the individual working bullock which leads to stability and reduction in loss of energy. There is an increase in the working convenience, overall performance, efficiency and output of the bullocks, as observed by the local farmers during test operations.

The bullocks of this state can pull the load up to 12% of their body weight for continuous four hours, with Birsa yoke in rainy and summer seasons. Whereas with the local yoke, the bullocks can pull only 10% load of their body weight. At 12% load, with local yoke, the bullocks experienced fatigue after 2.5 hours of continuous operation.

BAU Vice-Chancellor, Dr. O.N. Singh visited field trial of ICAR-AICRP on Soybean Research

Director Research and Scientists of BAU visited Citrus Fruit Garden at ZARS, Chianki, Palamau
Mahatma Gandhi's 151st Birth Anniversary Celebration
(Swachhata Abhiyan)
B.V.Sc. (Hons.) Topper Ms. Nikita Singh received Award from Hon'ble Vice-Chancellor, Dr. O.N. Singh, BAU, Ranchi

PG Students delivered speech during 151st Birth Anniversary of Mahatma Gandhi
Agriculture students interacted with farmers during RAWE programme

Interaction of Agriculture Students with Scientists of KVK, Dhanbad during RAWE Programme

8th Semester Agriculture Students associated in ELP Programme at Dept. of Home Science

Dignitaries during International Geeta Mahotsava held at BAU, Ranchi

Dignitaries during Netaji Subhash Chandra Jayanti at BAU, Ranchi

BAU Officials during Netaji Subhash Chandra Jayanti at BAU, Ranchi
Important Events

Chief Guest inaugurated 60th College Foundation Day Cum Indian Veterinary Doctor's Day - 2020

Dignitaries of Sensitization Programme on Weather Based Agro - Advisory under DAMUs

Dignitaries of 60th College Foundation Day Cum Indian Veterinary Doctor's Day - 2020

Dignitaries during Brainstorming Session on Implementation of New Education Policy 2020

Hon'ble VC, Dr. O.N. Singh addressed Birth Anniversary of Norman Earnest Borlaug at BAU, Ranchi

Dean Agriculture, Dr. M.S. Yadav with BAU Officials on Constitution Day of India 2020 Programme
FAU to showcase advanced instruments, machinery today

राज्यपाल ने दिया तीन दिशीय क्राउडसर्विस फ्री में शिक्षा की उपलब्धि का उद्घाटन

कृषि क्षेत्र के स्वर्ण काल के बारे में अजय और अनुरोध में एल्केटक्स का खेती विद्यालय की शिक्षा क्राउडसर्विस के सहयोग से दर्जा बढ़ाने की है पूरा मांड की
Activities of NAHEP Project

IFS Model under NAHEP Programme

Speaker of Guest Lecture under NAHEP Programme
Kisan Mela 2021

Hon'ble Speaker, Jharkhand Legislative Assembly Sri Rabindra Nath Mahto inaugurated Animal & Bird Show during Agro Tech Kisan Mela 2021.

Hon'ble Speaker visited the stall of Fisheries Science College.

Hon'ble Speaker visited the Animal Husbandry based IFS Model.

Hon'ble Finance Minister, Govt. of Jharkhand, Shri Rameshwar Oraon addressed the Validatory Programme.

Dignitaries released the Book on Animal Husbandry.

Facilitation of Hon'ble Finance Minister by Farmers Group.

Hon'ble Finance Minister, Govt. of Jharkhand, Shri Rameshwar Oraon.
Padma Shri Ashok Bhagat, Secretary, Vikash Bharti, Gumla inaugurated Agril. Engineering Fair, 2021

Farmers with Agril. Implements during Agril. Engineering Fair, 2021

Dignitaries of 64th Maparinirwan Diwas Programme at BAU, Ranchi

Dignitaries of 96th Kartik Oraon Jayanti Programme at BAU, Ranchi
Extension Activities

Interaction of Farmers with Veterinary Scientists at Ulihatu Village, Khunti

A Village Level Field Day on Maize organised by KVK, Jagarnathpur

Raising of Planting material of Papaya Ryrid (Red Lady) by KVK, Jagarnathpur

Distribution of Goat among Farmers under TSP Programme by KVK, Garhwa

PG Students of Veterinary College organised Animal Health Camp at Ulihatu Village, Khunti

Hon'ble VC, Dr. O.N. Singh & BAU Officials visited KVK, Darisai, E. Singhbhum

Kisan Gosthi under NICRA Programme organised by KVK, Danisai, E. Singhbhum

Participation of Women Farmers during International Women Day at KVK, Chatra
Hon'ble Agriculture Minister, Shri Badal Patralekh Ji and Hon'ble Labour Minister Sri Satyanand Bhokta visited Soil Testing Lab of KVK, Chatra

Seed production under ARYA Programme at KVK, Chatra

Director Extn. Edu. Dr. Jagarnath Oraon with BAU Officials visited CFLD Field of KVK, Bokaro

Farmers associated with Seed Production Programme under Seed Hub Project at KVK, Dumka

Distribution of Tool Kit to the Farmers of Garhwa District
During the last two years a project was sponsored by ICAR under Tribal Sub-plan entitled “Promotion of cultivation, Training on Harvesting Technology and Processing of Aloe vera leaves for Socio economic upliftment among Tribal people at Nagri Block under Ranchi District in Jharkhand”. Birsa Agricultural University, Kanke, Ranchi has been successfully transferred among tribes and demonstrated in the farmers field. The Nagri Block is dominated by tribes and the people are being engaged as agricultural labours, marginal workers, house hold works and cultivators. There were less cultivation practices of medicinal and aromatic plants in the above block.

First time initiatives were under taken as action oriented programme through the above project and a village Panchayat Dewri was selected based on interest of the project and socio-economic upliftment of the tribal people of the particular village as they convinced to grow in the waste places and courtyard. There are around 38 tribal people of Dewri Village participated and agreed under the leadership of Smt. Manju Kachhap
Village Panchayat Mukhia. At first the training initiated with a Green shade net house with sprinkler system installation for the regular training programme, providing exposition of technology of *Aloe vera* cultivation to the tribal people in Dewri village and with their consent a set of Green Shade Net House with Sprinkler system was installed for continuous maintenances of plant materials, mother nurseries, cow dung manure, FYM, quality planting materials of *Aloe vera* to grow in the villages has been facilitated through the project. There were seven training programme was conducted starting from the importance of *Aloe vera*, their market potentials, land preparation, organic manures, sowing techniques, cultivation, harvesting and processing whatever already available agro-technology from the Principal Investigator. The sowing trial was done on around ten thousands planting materials in Dewri village and also at BAU and then the next sowing was with their germinated pups or root-suckers which became multiplicity and the process has been developed to cultivation practices. This kind of technology transfer and demonstration in the farmer’s field was indeed first time on *Aloe vera* successfully accomplished in the Jharkhand state. The tribal people became aware about the great market and University is co-operating them for linkage for supply chain and income generation. The *Aloe vera* Village is a new example for the state of Jharkhand and inspiration of the farmers. As the leaves of *Aloe vera* is used for making hand sanitizer during the problems of Corono virus infection and in the above circumstances, the Dewri- *Aloe vera* Village is one of the example of Herbal Village in pertinence to health and wealth.

### Instructional Mushroom Unit at Department of Plant Pathology

Instructional Mushroom Unit of the Department of Plant Pathology, Faculty of Agriculture, BAU, Kanke, Ranchi is engaged in imparting hands on training to UG students during final Year under Experimental Learning Programme so that they can be equipped with technical Knowhow on a commercial basis. That will help them to be a budding entrepreneur. It also impart training to youth and farm ladies who want to start a business. During 2020-21 Mushroom Grower/Farmers visited Continuously the unit. The trained youths and farm women produced Button Mushroom, Ouster Mushroom and Milky Mushroom throughout the year and they made the produce available to consumers at affordable price.

Besides training to youth and farmers this unit also produced these Mushrooms throughout the year and made it available to nearby users/consumers.
PG students also work for their thesis problem and Ms. Aastha Sinha worked on substrate enrichment of Button Mushroom for yield and yield attributes.

**Production Details**

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<th>Sl No.</th>
<th>Particulars</th>
<th>Quantity/No.</th>
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<tbody>
<tr>
<td>1</td>
<td>Fresh Oyster Mushroom</td>
<td>459 kg</td>
</tr>
<tr>
<td>2</td>
<td>White Button Mushroom</td>
<td>153 kg</td>
</tr>
<tr>
<td>3</td>
<td>Spawn (Seed)</td>
<td>116 kg</td>
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<tr>
<td>4</td>
<td>No. of participants for Training</td>
<td>55 Farmers</td>
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<tr>
<td>5</td>
<td>No. of Farmers visited</td>
<td>484 No.</td>
</tr>
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</table>
कुल-गीत

कृषि विस्मय विश्वविद्यालय यहाँ की शान है
विज्ञ नव उपलब्धियों का कृष्ण गान है।

धूल का कण-क्रण यहाँ का मंदिर सोहा में सना
प्रकृति शोभा उपवनों की मेघ-पंखों पर तना
स्वरिखा बह रही इस वीर-श्रृंखला को सुगमती
आस्थिय प्रदेश अपने देश का गौर्ख बना

गर्व में धरती लिया विविधभूषी खान है
लोक-संस्कृति पूजा पर होता जयवीन विज्ञान है।

ज्ञान के इस केन्द्र में कृषि और पशुपालन कला
फलित होकर गमकती यह क्षेत्र है पूरा-पूरा
वालिकी विवाह यहाँ की धड़कनों में घुल रही
विज्ञ नव अनुसंधान का भी वल रहा है सिलिसिला

आदिवासी लोक जीवन में सुभाष वरदान है
कृषक विवाह का अनुसंधान और अतीत विज्ञान है।

तिमिरा का कोना नहीं आलोक पथ पर छा रहा
विदेशों की विविधता में नव सृजन रथ बढ़ रहा
विविध पशु लेते कुलावे गौ-घर में पल रहे
ज्ञान और विज्ञान का संगम यहाँ पर चल रहा

नमन से आती ऋवाएं गृंजता सदनान है
वीर विस्मय शृंखला को शत-शत नमन समान है।