

## Directorate of Research

**B**anda University of Agriculture and Technology, Banda is working on trinity concepts; teaching, research and extension. University is committed to work towards improvement of agriculture and allied sectors in the Bundelkhand region. The Directorate of Research is constituted to plan, execute, monitor and coordinate various research programmes conducted in the university and its jurisdiction area. During 2019- 20, researchers approached

different International, National and other funding agencies for financial assistance under various projects to fulfill envisages and strengthen research mandates of the university. Presently, three international projects, 12 All India Coordinated Research Projects(AICRPs) and 14 other projects are carrying out different research activities in the university to address the technical and practical problems of agriculture and allied sectors.

**Table 33: Ongoing Research Projects**

Sl. No.	Title of Project	Funding Agency	Total Cost (Rs. in Lakh)
1.	Mission for Integrated Development of Horticulture	Directorate of Arecanuts and Spices Development, Govt. of India	16.80
2.	Implementing genomics approaches for breeding high yielding mungbean genotypes with enhanced resistance to yellow mosaic in mungbean [ <i>Vigna radiata</i> (L.) Wilczek]	DST - SERB	5.26
3.	Centre of Excellence on dryland agriculture	Govt. of U.P.	500.60
4.	Improved crop management and strengthened seed supply system for Drought Prone Rainfed Lowlands in South Asia	IRRI	6.127
5.	AICRP Chickpea (Voluntary Centre)	ICAR, New Delhi	0.15
6.	AICRP Pigeonpea (Voluntary Centre)	ICAR, New Delhi	-
7.	AICRP Rapeseed & Mustard (Voluntary Centre)	ICAR, New Delhi	1.34250
8.	AICRP- MULLaRP	ICAR, New Delhi	-
9.	AICRP Medicinal and Aromatic Plants	ICAR, New Delhi	1.65
10.	AICRP Vegetable Crops	ICAR, New Delhi	-
11.	AICRP Arid legumes	ICAR, New Delhi	0.20
12.	AICRP Honey Bee & Pollinators (Volunteer Centre)	ICAR, New Delhi	9.5
13.	AICRP Linseed, (Mauranipur)	ICAR and Govt. of U.P.	42.89723
14.	AICRP Sesame, (Mauranipur)	ICAR and Govt. of U.P.	30.30375
<b>Private Projects</b>			
15.	Evaluation of Chlorpyrifos + Cypermethrin against fruit borer and thrips of chilli crop	Gharda Chemicals Pvt. Ltd.	5.0
16.	Evaluation of Plant growth regulator Mepiquat Chloride in Pumpkin	Gharda Chemicals Pvt. Ltd.	6.0
17.	Evaluation of Poly - 4 as a source of multi nutrients and optimization of doses on Chickpea in Bundelkhand region of india	Sirius Pvt. Ltd.	6.127
18.	Testing agronomic efficacy of concentrated liquid solution of sulphur on growth and yield of rainfed mustard	Yara Fertilizers pvt. Ltd.	3.00
<b>External Funded Projects</b>			
19.	Entrepreneurial Start-up of Apiculture : A Vital Input for Doubling Farmer's Income in Bundelkhand (U.P.)	RKVY	185
20.	Strengthening of KVK Infrastructure for Effective Transfer of Technology	RKVY	300.00
21.	Demonstration trials	ICRISAT	3.13250
22.	Establishment of Tissue culture facility startup entrepreneurship through in-vitro propagation for commercially important plants in Bundelkhand region of U.P.	RKVY	58.34
23.	Synthesis of Biopolymer nanocomposites (BNC) and their utilization in Water Purification	DST	34.0
24.	Entrepreneurship Development and Enhancing Farmer's Income through Goat Farming in Bundelkhand Region	RKVY	70.0

**Table 34: New Sanctioned Projects**

S. No.	Project Title	Funding agency	Budget (Rs. in Lakh)
1	All India Co-ordinated Research Project on Maize (Voluntary)	ICAR	As per need
2	AINRP on Onion & Garlic (Voluntary)	ICAR	As per need
3	Evaluation of nano-fertilizers in Wheat	IFFCO	3.00
4	Economic upliftment of SC community farmers of Banda District of Uttar Pradesh through technology aided cultivation of groundnut	ICAR	8.25
5	Leveraging genetic resources for accelerated genetic improvement of Linseed using comprehensive genomics and phenotyping approaches	DBT	1.02

**Events Organised**

**Organization of brainstorming session-cum-workshop**

Directorate of Research organized a Brain Storming Session cum Workshop on Prioritization of Agricultural Research in Bundelkhand region of U.P. A total of 80 faculties were participated in this workshop. During the workshop scientists were presented their envisages and research priorities in respective field for Bundelkhand region.



Faculties engaged in a technical session of workshop

**Visit of DG, UPCAR**

Dr. Brijendra Singh, Director General, Uttar Pradesh Council of Agricultural Research (UPCAR), Lucknow visited the University with Mr. Gyan Singh, Secretary, UPCAR and an interaction meeting was organized with the faculty members of BUAT in the chairmanship of Hon'ble Vice-Chancellor. The strengths, constraints and strategies of teaching, research and extension were discussed and many valuable suggestions came out for quality teaching and need-based research in the perspective of socio-economic and agro-ecological situations of Bundelkhand region.



Dr. Bijendra Singh, DG-UPCAR addressing the BUAT scientific staff

**Organization of Pre-Kharif Kisan Gosthi**

Dr. U.S. Gautam, Hon'ble Vice Chancellor graced Pre-Kharif Kisan Gosthi held under AICRP (Sesame) as Chief Guest. He addressed the participating farmers and asked them to come ahead for adoption of resource conservation technologies in agriculture e.g., micro irrigation, farm mechanization, organic farming. On this occasion, Hon'ble Vice-Chancellor, Dr. U.S. Gautam inaurated the main gate and rennovation works at Crop Research Farm, Mauranipur, Jhansi. The need based infrastructures have developed at farm viz. main gate, office building, store and renovation of borewell has done for smooth excution of research activities and seed production programme.

**Technical Session on “Modus of writing the synopsis, thesis, research papers and citation of references**

A daylong technical session was organized by the Directorate of Research in the Chairmanship of Dr. U.S. Gautam, Hon'ble Vice Chancellor. During the technical session, Dr. G. S. Panwar, Dean, College of Agriculture; Dr. S. V. Dwivedi, Dean, College of Horticulture; Dr. A. K. Tripathi, Associate Professor (Agronomy) and Dr. S. K. Singh, Deputy Registrar made technical deliberation on the subject. Besides, faculties from major departments also interacted with the students to frame the technical publications.

**Celebration of Til Diwas at Crop Research Farm, Gursarai**

A Kisan Gosthi ‘Til Diwas’ was organized at CRF, Gursarai. On this occasion, Dr. U.S. Gautam, Hon'ble Vice Chancellor graced the programme as Chief Guest. He



Hon'ble Vice-Chancellor, Dr. U.S. Gautam interacting with farmers during Farmers-Scientists Interaction programme

emphasized to grow sesame crop as per the scientific recommendations. Hon'ble Vice Chancellor also inaugurated the works at Crop Research Farm, Gursarai and asked the officials to make the farm more productive.

### Rabi Workshop - 2019

Rabi Workshop - 2019 was inaugurated by Dr. U.S. Gautam, Hon'ble Vice Chancellor. During workshop, total 26 speakers were presented their achievements of the last year and research protocols for Rabi 2019-20 in four technical sessions.



Hon'ble Vice Chancellor inaugurating Rabi Workshop-2019



### Monitoring of AICRP Sesamum

The scientists of the various fields from Project Directorate have visited at Mauranipur and monitored the ongoing research trials under AICRP Sesamum. Dr. V.P. Nagaich, Breeder & P.I. of this project along with Dr. P.K. Soni, Agronomist and Sri M.M. Tiwari, Junior Breeder, facilitated the Team.



A team of scientists from Project Directorate visiting research trials



Hon'ble Vice chancellor felicitating visting scientists

### Strengthening of Research Stations

#### Crop Research Farm, Mauranipur (Jhansi)

The Crop Research Farm, Mauranipur is extended in an area of 24.2 acres right in the centre of Mauranipur town. This centre is actively involved in research on linseed and sesame under AICRPs on these crops as well as Breeder and Foundation seed production of these crops. With view to develop need based infrastructures and make the centre in presentable farm, the main gate, office building, store and borewell were rennovated for smooth excute of research activities and seed production programme. Hon'ble Vice-Chancellor, Dr. U.S. Gautam inaugurated the main gate and rennovation works at Crop Research Farm, Mauranipur, Jhansi on June 28, 2019.



On this occasion, Hon'ble Vice Chancellor also graced Pre-Kharif Kisan Gosthi held under AICRP (Sesame) as Chief Guest. He also addressed the participating farmers and asked them to come ahead for adoption of resource conservation technologies in agriculture for example micro irrigation, mechanization, organic farming of important commodities.

During Rabi 2019-20, this centre has produced 172.0 q Foundation seed-2 of wheat var. K-1317, 3.50 q Breeder seed of Mau Azad Alsi-1 and 7.0 q Breeder seed of Mau Azad Alsi-2. During coming Kharif, 2020 this Research Farm has planned to undertake seed production of black gram and sesame in 3.5 ha area for each crop.

### Crop Research Farm, Gursarai (Jhansi)

The Crop Research Farm is extended in 63.59 acres of land. This farm has been mainly used for seed production of pulse crops especially Rabi pulses. However, during 2019, the University planned to establish a horticulture based crop diversification model and as consequence of it, an orchard of kinnow and pomegranate has been established in the farm in 2.0ha area. For the sake of smoothness in execution of activities, the farm has been strengthened with electricity connection, barbed wire fencing, construction of main gate, renovation of office building and arrangement of furniture, computer and accessories during 2019. These works at Crop Research Farm, Gursarai was inaugurated by Hon'ble Vice Chancellor on 12.09.2019. On this occasion, a Kisan Gosthi 'Til Diwas' was also organized at CRF, Gursarai in the gracious presence of Hon'ble Vice Chancellor as Chief Guest on the same day.

During Rabi 2019-20, this Research Farm produced total 354.5 q seeds including 171.0 q Foundation seed-2 of chickpea var. AVG-202, 161.9 q certified seed of field pea var. Aman and 21.6 q certified seeds of lentil var. IPL-316. During Kharif 2020, the Research Farm will undertake seed production of blackgram in 3.0 ha and pigeonpea in 2.0 ha area.



Hon'ble Vice-Chancellor, Dr. U.S. Gautam inaugurating the main gate

### Regional Agricultural Research Station, Bharari (Jhansi)

The RARS Bharari has been established with the objective to construct strategic research on dryland agriculture in Bundelkhand region. The research Station has an extensive farm with total area of 238.5 acres land out of which, 51.20 acres occupied with Krishi Vigyan Kendra, Jhansi which is also under the administrative control of BUAT and rest 187.3 acres occupied with RARS. The main gate and guest house of RARS has been renovated. An extensive uncultivated area has been brought under cultivation. During Rabi 2019-20, RARS Bharari has produced 293.4 q of Certified and Foundation seeds of field pea var. IPF 4-9 (81.0 q), Kathia wheat var. HI8737 (121.50 q), mustard var. NRCHB-101 (81.50 q and linseed var. Mau Azad Alsi-1 (9.40 q). During Kharif 2020, the RARS has planned to take up seed production programme in 19.0 hectares of area.



### Regional Agricultural Research Station, Belatal (Mahoba)

Regional Agricultural Research Station, Belatal has 25.0 acres of farm area in which seed production of blackgram (3.0 ha), green gram (2.20 ha) and sesame (2.0 ha) has been planned for Kharif 2020 and rest of area will be green manured with sesbania.

### Regional Agricultural Research Station, Mawai (Banda)

The RARS Mawai (Banda) has been established in 53.08 acres with the objective to execute strategic research and extension programmes on agro-forestry systems for Bundelkhand region. Farm development activities have been undertaken in this Research Station.

### Research Achievements of Projects

#### AICRP on Linseed

#### Breeding

Four Coordinated trials and two station trials were accomplished. Two irrigated entries LMS-2015-31 is in final year testing for Zone-III (Including Bundelkhand of U.P.) and LMS-2015-27 for Zone-I (Panjab, Haryana and J&K) and Zone III. It is identification proposal will be submitted for release and notification. Two rainfed entries LMS-2016-R-7 promoted for second year testing for Zone-I and Zone-II (U.P., Jharkhand, NEH and Bihar) and LMS-2016-R-16 for Zone-II only. Four entries for rainfed condition and five entries for irrigated condition were in testing in state varietal trials at 9 locations of U.P. Three improved lines of linseed

viz, LMS-2013-22, LMS-2013-29 & LMS-2014-177 have been identified to release for irrigated conditions and two lines viz. LMS-2012-42 and LMS-2014-103 for rainfed condition.

**Breeder Seed Production:** 343 kg breeder seed of variety Mau Azad Alsi-1 and 700 kg of Mau Azad Alsi-2 is harvested against DAC indent of 260 kg and 650 kg, respectively.

### Agronomy

The Coordinated Trials were accomplished. The effect of micronutrients on growth and yield of linseed under limited irrigation, agronomic evaluation of AVT (I) II<sup>nd</sup> year entries of Zone –III in relation to nutrient application. Seventeen Front Line Demonstrations under irrigated situation and eight under rainfed situation were conducted.

### Plant Pathology

Uniform Disease Nursery Trial: Total 50 Entries of IVT and AVT trials were screened against powdery mildew and *Alternaria* blight diseases in 0-5 Scale.

### Entomology

In screening of Germplasm lines for bud fly 100 lines were evaluated with 7 to 43% infestation was observed. In Uniform Pest Nursery Trial 100 lines were screened with 6 to 39% infestation.



Research trials of linseed under AICRP



Research trials visiting by team of scientists

### AICRP (Sesame)

#### Breeding

Two Coordinated trials namely IVT and AVT were conducted as per protocol. Entry MT – 2017 – 11 is promoted

for AVT first year testing for Zone- II (including U.P.) on oil basis. Five entries were tested in State Varietal Trials. Three entries namely MT-2013-3, MT-10-23-3 and MT-14-04-2010 had qualified. MT-2013-3 yielded best with 466 kg/hayield against two other qualifying varieties and check. Identification proposal for whole U.P. has been submitted before State Varietal Release Committee. The 23 cross combinations harvested. Ten F1 generations and F2 to F7 generations were in advanced. 506 single plants and 16 lines were selected. The 120 kg breeder seed of variety Pragati (MT-75) and 60 kg Foundation one of variety RT-351 is produced after processing.

### Agronomy

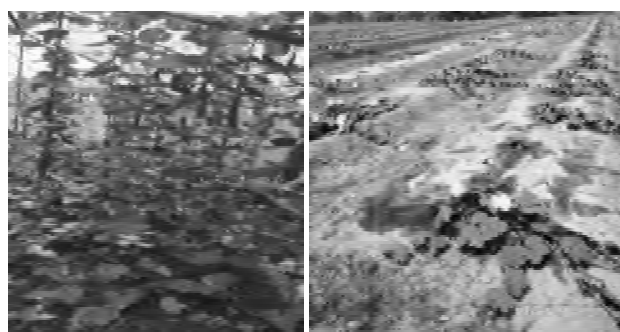
Four Coordinated Trials were conducted and harvested successfully; Optimization of nutrient management for AVT Genotypes – Regular feature. Evaluation of pre and post emergence herbicides for chemical weed management in sesame, effect of mulch and herbicides on weed dynamic of sesame and effect of different doses of pendimethalin on promising sesame genotypes were accomplished. Total 25 Front Line Demonstration were conducted, 7 FLDs were vitiated and 18 were harvested successfully.



Research trials visiting by scientists of Directorate and farmers of adjoining areas

### AICRP (Vegetable Crops)

- (i) The BUAT Centre is presently conducting two trials on sponge gourd (IET- O.P. & IET- hybrid). The nucleus seed production of this line is continued in each season.
- (ii) Effect of mulching at different FYM levels in sponge gourd during spring-summer season



Research trials of sponge gourd under AICRP

The effect of two FYM levels *i.e.* 7.5t/ha and 15 t/ha along with or without black polythene mulch (200 micron) was evaluated in sponge gourd line BUAT SG18-1 (IC 0628847).

The maximum fruit yield was recorded in treatment containing FYM @15t/ha + black plastic mulching (T4) (239.9 q/ha). In this treatment, highest values were also recorded for fruit length (33.4 cm), number of fruits per plant (20.4), average fruit weight (126.5 g) and B/C ratio (4.4).

### AINRP on Onion & Garlic

#### Varietal trial in red onion (IET)

Nine entries *i.e.*, OAV-19-02, OAV-19-05, OAV-19-07, OAV-19-10, OAV-19-12, OAV-19-14, OAV-19-16, OAV-19-18 & OAV-19-20 and two checks such as Agrifound Dark Red and L-883 were transplanted. The data revealed that the highest average bulb weight (60.83 g) was recorded in L-883 and was at par with entry OAV-19-05. The significant and highest marketable yield was also recorded in L-883 (226.85 q/ha) and was at par with entry OAV-19-05 (218.06 q/ha).

#### Varietal trial in hybrid onion (IET)

The trial was conducted at Research Farm of Vegetable Science, Banda University of Agriculture and Technology, Banda during *kharif* season 2019. Seven entries *i.e.*, OAH-19-33, OAH-19-35, OAH-19-38, OAH-19-40, OAH-19-42 and two checks such as Agrifound Dark Red and L-883 were transplanted on dated 28.08.2019 in randomized block design with three replications. The data revealed that the highest average bulb weight (58.50 g) and marketable yield was recorded in L-883 (225.00 q/ha).

#### Varietal trial in white onion (IET)

The trial was conducted at Research farm of Vegetable Science, Banda University of Agriculture and Technology, Banda during *kharif* season 2019. Seven entries *i.e.*, AOV-19-21, AOV-19-23, AOV-19-25, AOV-19-28, AOV-19-31 and two checks such as Agrifound Dark Red and L-883 were transplanted on dated 28.08.2019 in randomized block design with three replications. The data revealed that the highest average bulb weight (61.67 g) was recorded in check variety L-883 and it was at par with entry OAV-19-21 (59.33 g). The

significant and highest marketable yield was also recorded in L-883 (216.69 q/ha).

### Late *kharif* 2019

#### Varietal trial in red onion hybrid (IET)

The experiment was conducted at Research farm of Vegetable Science, Banda University of Agriculture and Technology, Banda during Late *kharif* season 2019. Seven entries *i.e.* OAH-02, OAH-05, OAH-08, OAH-11, OAH-13 and two checks such as Bhima Kiran and Bhima Shakti were transplanted on dated 14.11.2019 in randomized block design with three replications. The data revealed that the highest average bulb weight (75 g) was recorded in entry OAH-11 followed by Bhima Kiran (70.50 g). The highest marketable yield (358.52 q/ha) was recorded in entry OAH-11 followed by OAH-05 (348.89 q/ha) and Bhima Kiran (335.56 q/ha).

#### Varietal trial in red onion (IET)

The experiment was conducted at Research farm of Vegetable Science, Banda University of Agriculture and Technology, Banda during Late *kharif* season 2019-20. Ten entries *i.e.* OBV-58, OBV-61, OBV-62, OBV-64, OBV-66, OBV-68, OBV-70, OBV-72, OBV-75, and two checks such as Bhima Kiran and Bhima Shakti were transplanted on dated 14.11.2019 in Randomized Block Design with three replications. The data revealed that the highest average bulb weight (72.50 g) was recorded in entry OBV-61 followed by check Bhima Kiran (69.70 g). The highest marketable yield (337.78 q/ha) was recorded in OBV-61 followed by Bhima Kiran (329.63 q/ha).

### Rabi-2019-20

#### Varietal trial in red onion (IET)

The study was conducted at Research farm of Vegetable Science, Banda University of Agriculture and Technology, Banda during *Rabi* season 2019-20. Ten entries such as ORVA-19-01, ORVA-19-03, ORVA-19-05, ORVA-19-07, ORVA-19-09, ORVA-19-11, ORVA-19-14, ORVA-19-16, ORVA-19-18, and one check NHRDF Red-4 were transplanted on dated 22.12.2019 in Randomized Block Design with three replications. The data revealed that the highest marketable yield (338.51 q/ha) was recorded in ORVA-19-03 followed by

**Table 35: Effect of FYM and black plastic mulching in sponge gourd during spring-summer, 2019**

Treatment Details	Number of Fruits/Plant	Average Fruit Weight (g)	Average Fruit Length (cm)	Fruit Yield (q/ha)	Cost of Cultivation (Rs./ha)	B/C Ratio
T <sub>1</sub> : FYM @7.5t/ha	6.3	84.6	21.6	44.5	38,650	1.7
T <sub>2</sub> : FYM @15t/ha	10.8	96.4	23.2	90.6	46,150	2.9
T <sub>3</sub> : FYM @7.5t/ha + Black Plastic Mulching	15.2	117.8	29.6	156.7	68,650	3.4
T <sub>4</sub> : FYM @15t/ha + Black Plastic Mulching	20.4	126.5	33.4	223.9	76,150	4.4
CV (%)	11.3	13.2	12.7	14.8	-	-
CD (0.05)	3.6	9.8	4.7	67.5	-	-

check variety NHRDF Red-4 (337.77 q/ha) and entry ORVA-19-07 (331.11 q/ha).

#### Varietal trial in Early maturity onion (IET)

Seven entries such as OREA-19-43, OREA-19-45, OREA-19-48, OREA-19-50, OREA-19-52 and two checks NHRDF Red-3 and NHRDF Red-4 were transplanted. The data revealed that the highest marketable yield (344.44 q/ha) was recorded in check variety NHRDF Red-4 followed by entry OREA-19-52 (337.03 q/ha) and NHRDF Red-3 (333.33 q/ha).

#### Varietal trial in red hybrid onion (IET)

Eight entries such as ORHA-19-53, ORHA-19-55, ORHA-19-57, ORHA-19-59, ORHA-19-63, ORHA-19-65 and two checks NHRDF Red-3 and NHRDF Red-4 were transplanted. The data revealed that the highest marketable yield (342.96 q/ha) was recorded in check variety NHRDF Red-4 followed by entry ORHA-19-65 (338.52 q/ha) and NHRDF Red-3 (335.56 q/ha).



#### Varietal trial in white onion (IET)

Eight entries such as OWVA-19-66, OWVA-19-68, OWVA-19-70, OWVA-19-72, OWVA-19-74 and two checks NHRDF Red-4 and Agrifound Light Red were transplanted. The data revealed that the highest marketable yield (335.56 q/ha) was recorded in OWVA-19-98 followed by Agrifound Light Red (334.81 q/ha) and check variety NHRDF Red-4 (328.52 q/ha).



#### Varietal trial in white high TSS onion (IET)

Nine entries such as OWTA-19-85, OWTA-19-87, OWTA-19-89, OWTA-19-91, OWTA-19-94, OWTA-19-96, OWTA-19-98 and two checks NHRDF Red-3 and NHRDF

Red-4 were transplanted. The data revealed that the highest marketable yield (340.74 q/ha) was recorded in OWTA-19-98 followed by OWTA-19-85 (335.56 q/ha) and check variety NHRDF Red-4 (332.59 q/ha).

#### Garlic

##### Varietal trial in Garlic (IET)

Thirteen entries such as GN-19-01, GN-19-04, GN-19-05, GN-19-07, GN-19-09, GN-19-12, GN-19-21, GN-19-23, GN-19-25, GN-19-29, GN-19-31, GN-19-33 and one check Yamuna Safed-3 were planted. The data revealed that the highest marketable yield (107.00 q/ha) was recorded in GN-19-04 followed by GN-19-29 (100.74 q/ha) and check variety Yamuna Safed-3 (92.59 q/ha).

#### AICRP on Honey Bees & Pollinators

##### Anthecology of mustard

Diverse anthophiles/ pollinators were foraged on the mustard bloom. The recorded anthophiles/ pollinators belong to Hymenoptera, Diptera, Coleoptera and Lepidoptera order. The highest frequency of visit recorded from *Apis mellifera*, followed by *A. cerana*, *A. dorsata*, *A. florea*, *Nomia* sp., *Syrphus* sp. and *Xylocopa* sp. The diurnal abundance of anthophiles/ pollinators varied from insect to insect, hours to hours and stages of blooming. The maximum populations of anthophiles/ pollinators were recorded from 1100 to 1300 h. Out of the anthophiles/ pollinators, highest diurnal abundance recorded of *A. mellifera* (32.33 bees/ m<sup>2</sup>/ 5 minutes). The visitation rate of insect pollinators varied from pollinators' species to species and from stages of blooming. The highest visitation rate was recorded 7.32 flower/min with *A. mellifera* followed by *A. dorsata*, *A. cerana* and *A. florea*. The highest visitation rates recorded at peak of the blooming period of all pollinators. The number of seed per silique increased ensued 18.33% yield enhanced by the insect pollinators in the mustard crop.

**Bee flora-** A total of 49 bee foraging plants species were recorded as major sources of pollen and nectar from January to December in Banda, Bundelkhand (U.P.). In this region, honey flow period was observed in the months of November to February.

**Severe enemies of Honeybees in Bundelkhand-** In the *A. mellifera* species reared at apiary of BUAT, Banda, Varroa mite observed as most severe enemy followed by wax moth especially in weak colonies during dearth period.

##### AICRP on arid legumes

A total of 14 entries were evaluated, Out of that CP-7 (265.33kg/ha), CP-3(152.00 kg/ha) and CP-18(142.33kg/ha) gave higher productivity of grain. The experiment was affected by abiotic factors during reproductive and maturity stage, therefore, performance of each entry was very poor.



Research trials of arid legumes under AICRP

### AICRP on Rapeseed-Mustard

The performance of IVT and AVT timely shown in irrigated conditions, Enhancing water use efficiency and productivity of Indian mustard through agrochemicals under water scarce condition of Bundelkhand (Agronomy) and Screening of *Brassica* AVT-I and AVT-II strains against different diseases under natural condition have conducted. The experimental soils were poorly fertile-being low in available organic carbon (0.43%) and low in available nitrogen (192.18 kg/ha), medium in available potassium (274.4 kg/ha) and low in available phosphorus (13.7 kg/ha) and clay loam with pH 7.6 in particular.

The Indian mustard variety 'Giriraj' sown by 1<sup>st</sup> week of November at spacing of 45x15 cm with application of 60:30:20:18 kg of N:P<sub>2</sub>O<sub>5</sub>:K<sub>2</sub>O:S per hectare as basal accompanied with hydrogel @ 2.5–5.0 kg/ha followed by two foliar applications of salicylic acid @ 100-200 ppm during flower initiation and siliquae formation was found to be effective for increasing the yield productivity. Both hydrogel and salicylic acid alone or in combination proved



Performance of variety Giriraj under water scarce conditions at different growth stages

effective in water-scarce areas for enhancing the agricultural productivity by achieving sustainability in production.

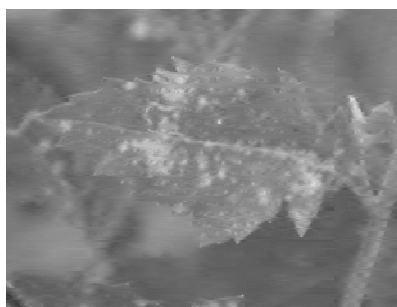
Out of 77 strains of rapeseed-mustard, SBL-19-5, SBL-19-16, SBL-19-22, SBL-19-24, SBL-19-28, SBL-19-31, UDN-19-26 and UDN-19-26 were recorded highly resistant to alternaria blight, white rust and powdery mildew. These resistant lines could be used as efficient donors in breeding programme.

### AICRP on Weed Management

The experiment was conducted with 13 treatments of weed control. Among several types of weeds, populations of sedge weeds were higher in the experimental field. All the weed control treatments proved effective in significantly



Orobanche weed in mustard field



White rust symptom on leaf and floral parts of



Resistant Plant



Alternaria leaf blight symptoms



Powdery mildew Symptom



Performance of Advanced Varietal Trial (AVT)



reducing the number and dry weight of weeds as compared to weedy check. Among various treatments application of Imazethapyr + Pendimethalin (RM) 1000 g as pre-emergence treatment recorded the lowest weed number (26.7/m<sup>2</sup>) and weed dry matter accumulation (21.3g/m<sup>2</sup>) as well as the highest weed control efficiency (72.2%) at 60 DAS. Imazethapyr + Imazamox (RM) 70g at 3-4 leaf stage resulted in significantly higher number of pods/plant, seeds/pod, longer pods and bolder seeds also produced higher seed yield (1224 kg/ha) among other herbicidal treatments.

In un-weeded plots seed yield was reduced in the range of 21 - 40% compared with weed free and other treated plots. Among all weed control treatments application of Imazethapyr + Imazamox (RM) 70g at 3-4 leaf stage was effective to obtain higher seed yield and more net return (Rs/ha) as well BCR. Visual phytotoxic effect on crop was recorded in treatment Imazethapyr + Imazamox @ 70 g/ha and 80 g/ha at 3-4 leaf stage. Slight phytotoxicity in black gram plants at 15 days after application of herbicides in the form of stunted growth of plants which mitigated after some time.

### Residual effect of herbicides applied in blackgram on succeeding mustard crop

Carryover effect of herbicides applied in blackgram was visible on succeeding mustard crop. Number of plants/meter row length (m.r.l.), no. of pods/plant and seed yield of mustard differed significantly from untreated plots due to residual carryover effect of different herbicides applied in blackgram.



Mustard as succeeding crop of blackgram

### Performance of chickpea under pre and post-emergence application of herbicides

A trial was conducted on weed management in chickpea with 10 treatments. Among several types of weeds, populations of sedge weeds were higher in the experimental field. All the weed control treatments proved effective in significantly reducing the number and dry weight of weeds as compared to weedy check. Among weed control treatments application of Pendimethaline 1000 g/ha as PE followed by Quizalofop-ethyl 50 g/ha as post-emergence exert significant influence on suppression of weeds. Minimum value of weed index (5%) was recorded when Pendimethaline 1000 g/ha as PE followed by Quizalofop-ethyl 50 g/ha as post emergence used as treatment.

Weed free plot performed well and produced higher number of pods/plant (33.5), seeds per plant (36.7), 100 seed weight (25.2 g), straw yield (25.7 q/ha) and seed yield (23.1 q/ha). Among various weed control treatments application of Pendimethaline 1000 g/ha followed by Quizalofop-ethyl 50 g/ha produced 31.4 pods/plant, 35.3 seeds per plant, 24.9 g/100 seed, 26 q/ha straw yield and seed yield (21.8 q/ha). Minimum yield attributing traits, harvest index (45.9%) and seed yield (15.7 q/ha) which was 45% less than weed free plot were recorded with weedy check.



Weed management in Chickpea

### Monitoring of appearance of new weed species in Kharif season

The survey was undertaken in the fields of farmers in Banda districts during kharif season. On the basis of IVI values and relative density, dominant weeds in transplanted rice were *Echinochloa colona*, *E. crusgalli*, *Cyperus rotundus*, *Caesulia axillaris*, *Fimbristylis miliacea* and *Alternanthera sessilis* and. Floristic composition of grasses, sedges and BLW were 39.6, 30.8 and 29.6%, respectively.

### AICRP-MAP & Betelvine funded by DMAPR, Anand, Gujrat

1. Evaluation of promising lines of Mucuna under AICRP- MAP & Betelvine.
2. Evaluation of promising lines of Tulsi for high yield and quality MLT-AVT.



Hon'ble Vice Chancellor visiting research trials under AICRP MAP & Betelvine



Trials under AICRP MAP & Betelvine on different lines of *Ocimum* and *Mucuna*

## Centre of Excellence on Dryland Agriculture

### A: Crop Improvement

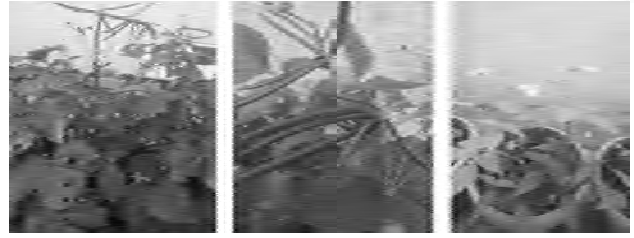
#### Mungbean and Urdbean

A total of 216 mungbean and 50 urdbean genotypes have been characterized for yield and its component traits and yellow mosaic disease reactions for their effective utilization. The significant variations were observed for yield components. The genotypes viz., GM 4, IPM 2-19, V1133, IPM 02-3-2, AKM/NP/8/9, PRATUKSHA NEPAL, PAU 911, ML 1299, IC 296672, China Mung 2, TARAM 18, SML 1815, ML 134, HW 421, EC 391178(y), PDM 54, IPM 02-3, IPM 02-03-1, EC 520034 were found superior over the check IPM 02-3.



Performance of genotypes of mungbean

The 17 different wild *Vigna* accessions have been grown under pot and field conditions, and evaluated for various important biotic and abiotic stresses. Some of the donors like PRR2008-2-1, PRR2008-2-2, TCR20 and TCR7 have been identified as potential donor for MYMIV-resistance.



Evaluation of wild relatives of mungbean during kharif 2019; TCR-20 and PRR 2008-2, showing HR-response to MYMIV

The TCR20 have been tagged as donor for powdery mildew resistance. Similarly, local wild (W17) have been identified for early flowering and stay green trait under both high moisture stress and drought stress.



TCR-20 showing HR-powdery mildew resistance response against HS cultivated mungbean

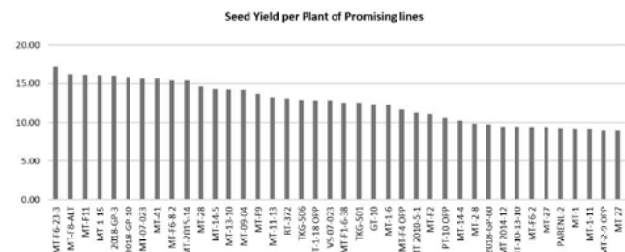
Besides, 15 F1s have been advanced to F2 seeds of mungbean for further selections and generation of new breeding material.

The 20 urdbean genotypes have been found as MYMIV-resistance under Bundelkhand region. The molecular characterization exhibited the 16 out of 50 have been comprised of resistant locus CYR1, may be effectively utilized in further marker-assisted breeding programme for developing MYMIV-resistant urdbean cultivars.



#### Sesame

A total of 113 genotypes of sesame were sown for multiplication of the seeds for further experiments. Seed yield per plant ranged from 2.24-17.20 g with general mean of 8.17 g per plant. The 38 genotypes exhibited >10% seed yield over check MT-27.



Graph showing superior *per se* performance for seed yield over check 'Pragati'

Out of the total germplasm lines, 27 individual plants have been selected as advanced elite lines based on yield and other yield determinants.



Field view of Sesame germplasm evaluation during kharif 2019

### Chickpea

Three new chickpea lines namely BUAT Chana 1 (Desi), BUAT Chana 2 (Kabuli) and BUAT Chana 3 (Kabuli), have been submitted from chickpea programme to AICRP chickpea for multilocation evaluation during 2019-20.

A diverse set of 90 elite Indian chickpea germplasm lines have collected. The material comprised of high yielding advanced lines obtained through AICRP trials, Set of 18 elite lines obtained from international chickpea varietal trial ICVT, Desi Chickpea 2018-19, ICRISAT, Hyderabad, 12 varieties JNKVV, Jabalpur M.P. represented Western Central zone WCZ, 6 varieties PAU, Ludhiana represented north India and set of released Indian varieties, elite breeding lines, Genetic stocks, landraces from IIPR Kanpur.



Performance of different genotypes of chickpea

### Establishment of molecular breeding laboratory

The Laboratory of Molecular Plant Breeding has established under the CEDA project in Department of Genetics and Plant Breeding. The objective of this laboratory is to enhance the knowledge of students and strengthen the breeding programmes on various crops. This laboratory is committed to accelerating breeding programmes through

omics interventions for identification, characterization and development of biotic and abiotic stress tolerant high yielding varieties of pulses and oilseeds for Bundelkhand region. The laboratory is equipped with basic and modern equipments given hereunder-

SN	Name of equipment	Quantity
1	Refrigerator (-20)	02
2	Mini Centrifuge	02
3	NR-Centrifuge	01
4	pH meter	01
5	Vortex mixture	02
6	Ultra pure water purification system	01
7	Vernier caliper	01
8	Thermal Cycler (PCR)	01
9	Ice Flacker	01
10	Cryocan	01
11	Gel electrophoresis (Horizontal)	02
12	Gel Doc System	01
13	Water bath	01
14	Real Time PCR	01
15	Spectrophotometer	01
16	Vertical electrophoresis	01
17	Microwave Oven	02
18	UPS Power Backup (5.5 KVA)	01
19	Leminar air flow	01
20	Autoclave (Vertical)	01



A view of molecular breeding laboratory

### B. Plant Protection

#### Mungbean

Nine chemical treatments were evaluated against cercospora leaf spot (CLS) of mungbean. Out of 9 fungicides, the maximum reduction (60%) of CLS severity was observed in treatment in which Carbendazim 50% WP which was applied @ 0.15% at first appearance of symptoms. The reduction of CLS severity observed in Carbendazim 12% WP + Mancozeb 63% WP and Azoxystrobin 23% SC were 55.38% and 46.24%, respectively, and they were ranked 2<sup>nd</sup> and 3<sup>rd</sup> in terms of CLS reduction.

Total 212 genotypes of Mungbean were evaluated for identification of resistance against CLS under natural field conditions and out of these, 25 and 48 genotypes were showed highly resistant and resistant reaction against CLS, respectively.

Three districts viz., Banda, Hamirpur and Mahoba were surveyed to find out the current status of major diseases of pulses and oilseeds. The occurrence of collar rot and stem rot was noticed in chickpea in all surveyed sites. The occurrence of collar rot was also noticed in lentil and pea; and wilt on chickpea, lentil and pea. Three diseases i.e. powdery mildew, *Alternaria* blight and white rust were observed on mustard, however, occurrence of *Alternaria* blight and bud rot was noticed on linseed crop in all the surveyed sites.

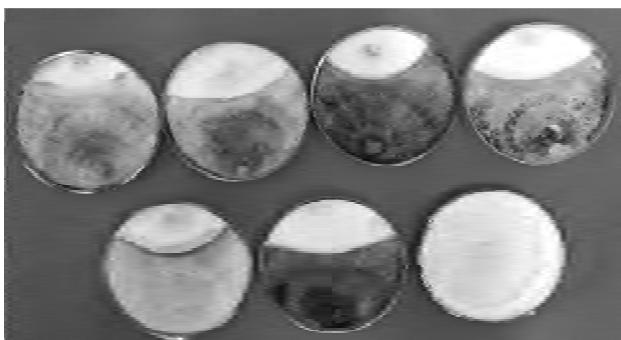
### Chickpea

Fifty genotypes of chickpea were screened in pot culture against collar rot and wilt diseases with artificial inoculation conditions. Out of 50 genotypes, 13 i.e. C1754 (JG16), C1769, C1775, C1779, C1788, JG-12, JG-315, JG-322, PDG-4, ICVT181107, ICVT181108, ICVT181117 and GNG2171 were found moderately resistant against collar rot. In case of wilt; 3 (C1775, ICVT 181106 and ICVT 181107) and 4 (C1754: JG-16, ICVT181108, ICP-08-103 and GNG-1854) genotypes were found resistant and moderately resistant, respectively, against wilt. The experiment will be revalidated in next year for re-confirmation of above findings.

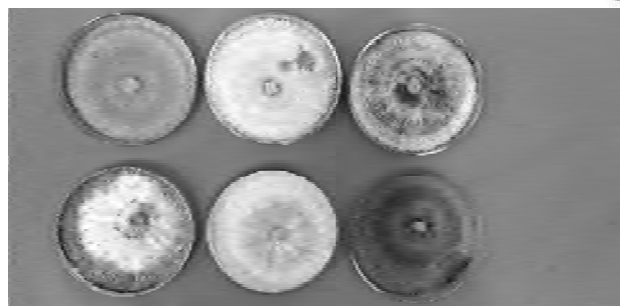


Screening of chickpea genotypes

Five isolates of *Trichoderma harzianum* and one isolate of *T. viride* were isolated from the rhizospheric soils collected from different locations. All isolates inhibited the mycelial growth (31.50 to 90%) of *Sclerotium rolfsii*, *Fusarium oxysporum* f. sp. *ciceris* significantly over the untreated control.



Evaluation of *Trichoderma* isolates against *Sclerotium rolfsii*



*Trichoderma* isolates

### C. Nutrient Resource Management

#### Mungbean

Four varieties of mungbean viz. TMV-37, Janak, IPM 2-3 and Virat were evaluated at 2 sowing dates (15<sup>th</sup> & 25<sup>th</sup> July). Virat performed well and produced seed 9.46 q/ha. It was observed that early sowing of mungbean yield was higher over late sown varieties.



Mungbean sown in late July



Mungbean sown in mid-July

#### Urdbean

Four varieties of urdbean viz. Azad urd 3, Uttara, Pratap and PU -31 were sown at two sowing dates (15 & 25 July 2019). The variety PU-31 performed well and produced highest seed yield 7.8 q/ha followed by Pratap, Uttara and Azad urd-3.

Seven levels of cropping system viz. sole sesamum, sole blackgram, sesamum+blackgram (1:1), sesamum + blackgram (2:1), sesamum+blackgram (2:2), sesamum + blackgram (3:1) and sesamum+blackgram (3:2) were evaluated among the cropping systems. Sole sesame (T1) recorded significantly higher grain yield of 3.60 q/ha. Sesame



Urdbean sown in late-July



Urdbean sown in mid-July

+ blackgram (3:2) and sesame + blackgram (2:2) intercropping system significantly recorded the highest seed yield than other intercropping situation.



Til under Ridge and furrow land configuration

An experiment was conducted under different land configurations viz. ridge and furrow, raised bed and flat bed conditions. Among the land configuration treatments, sowing under ridge and furrow significantly increased the



Til: BG intercropping

seed yield (238 kg/ha). It has been observed that there was 9.2 per cent increase in yield in ridge and furrow over flat bed.

### Lentil

Seven levels of foliar supplementation of Zinc sulphate 0.5 %, Urea 2%, salicylic acid 100 ppm in various combinations were evaluated at pre-flowering and pod development stages in two varieties of lentil. Based on yield performance among two varieties of lentil, IPL 321 proved superior to IPL 316. Under various treatments variety IPL 316 yielded in the range of 9 to 13 q seed/ha while variety IPL- 321 in the range of 10 to 15 q/ha. Among foliar supplementation, combined application of urea, zinc sulphate and salicylic acid proved superior over others.



Lentil crop during Rabi 2019-20



Foliar application in Lentil

### Chickpea

Impact of plant nutrients on performance of late sowing of chickpea was evaluated. The application of recommended dose of fertilizer along with 1% foliar spray of NPK mixture at early and flowering stage performed better in 1<sup>st</sup> year.



## Vegetable crops

### Onion

The mean performance of genotypes for different traits indicated that significantly higher and at par values of gross and marketable bulb yield was realized in L-883 (244.17 q/ha and 220.0 q/ha, respectively) and Bhima Shweta (234.17 q/ha and 226.67 q/ha, respectively). In view of desirable bulb shape, higher value for equatorial bulb diameter was recorded in L-883 (5.56 cm), Bhima Shweta (5.43 cm), Bhima Super and ADR (5.35 cm). Higher value of TSS was recorded in L-883, Bhima Raj (12.33°Brix), Bhima Shweta (12.27°Brix), Bhima Super (11.92°Brix), Bhima Dark Red, Phule Safed (11.77°Brix), Bhima Red (11.63°Brix) and Agrifound Dark Red (11.60°Brix). The genotypes L-883, N-2-4-4 and B-780 registered earliness in maturity in terms of days to 70% neck fall (80-88 DAS). It is evident that L-883 and Bhima Shweta were most promising genotypes in respect of gross and marketable bulb yield, minimum number of bolters, rotten and multi-centered bulbs, bulb weight, equatorial bulb diameter, total soluble solids, number of leaves per plant and earliness in maturity. These genotypes could be recommended for cultivation in Bundelkhand region.



Performance of different genotypes of onion

A total of 21 varieties such as Bhima Safed, Bhima Shweta, Bhima Shubhra, Phule Suverna, Bhima Red, Bhima Safed, Bhima Shakti, Bhima Light Red, Bhima Kiran, Bhima Super, N-2-4-1, Early Grano, Pusa Madhvi, Pusa Ridhi, Arka Niketan, Sukh Sagar and four checks i. e. NHRDF Red, NHRDF Red-3 and NHRDF Red-4 and Agrifound Light Red were evaluated. The highest marketable yield (360.00 q/ha) was recorded in variety NHRDF-Red-4 followed by NHRDF Red-3 (353.33 q/ha) and Bhima Shweta (343.90 q/ha).

### Okra

A total of 17 entries such as Parbhani Kranti, P-8-G, WB-Kulana, DOV-12, DOV-89, A. Callei, Hissar Unnat, Kashi Pragati, US-8063, PA-4, YVRES-5, IC-90491, SUN-2, Pusa Sawani, Kashi Vardan, Arka Anamika, Shakti, Arka Abhay, Venus, Bendi No-10, Super Lady Luck, Ankur-41, Chinese Jhar, NBH-180, Mona-002, VNR-999, DOV-1 were evaluated. The days to first flowers and first harvesting in 42 days was observed with P-8-G and variety Shakti. The significant and highest fruit yield 137.71 q/ha was recorded in variety Parbhani Kranti.

### Garlic

A total of 17 entries such as BUATG-1, BUATG-2, BUATG-3, BUATG-4, BUATG-5, BUATG-6, BUATG-7, BUATG-8, BUATG-9, BUATG-10, BUATG-11, BUATG-12, BUATG-13, along with four checks i.e. Yamuna Safed-2, Yamuna Safed-3, Yamuna Safed-4 and Yamuna Safed-9, were planted. The maximum bulb diameter (4.80 cm) was recorded in genotype BUATG-2 followed by Yamuna Safed-2 (4.78 cm), BUATG-8 (4.75 cm) and Yamuna Safed-3 (4.59 cm) and Yamuna Safed-4 (4.53 cm). The highest 20 bulbs weight (0.541 g) was also recorded in genotype BUATG-2 followed by BUATG-8 (0.512 g) and Yamuna Safed-3 (0.509). The highest marketable yield 116.67 q/ha was recorded in entry BUATG-2 followed by BUATG-8 (112.22 q/ha) and check variety Yamuna Safed-2 (109.44 q/ha). The minimum duration was observed in check Yamuna Safed-3 (142 days) followed by genotype BUATG-5, BUATG-11 and BUATG-13 (148 days).



Performance of different genotypes of garlic

### Protected cultivation

The protected cultivation, growing season can easily be extended and one or two more short duration crops could easily be taken which further add increased crop yield per unit per day as compared to open field conditions. The BUAT has formed 6 different protected structures such as natural ventilated poly-house, insect proof net, green shade net and mist chamber with hardening chamber under the project Centre of Excellence on Dry land Agriculture for cultivation of high value vegetable crop. At Banda, the red & yellow capsicum *var.* Natasha & Swarna, respectively, were sown under natural ventilated polyhouse. The average weight of harvested green fruits was 245 g and 330 g, respectively. The hybrid tomato (NS-4266) was also transplanted in the second week of September the matured fruits were pulpy with tight pericarp. Therefore, these varieties were highly suitable for shipment to distant places. The parthenocarpic cucumber was sown in the 2<sup>nd</sup> fortnight of September in green shade net which later fruited well at each and every node, the harvested fruits were dark green in colour and the market acceptance was excellent as it was seedless and was sold off in local market at a price of Rs. 50/kg in November.



Performance of hybrid tomato (NS 4266) under protected cultivation



Dr. Mangla Rai, Ex-DG, ICAR and Hon'ble Vice Chancellor visiting capsicum block under protected cultivation



Capsicum in fruiting stage under protected cultivation

### CEDA- Horticulture (Fruit Science)

#### Land Development and Micro irrigation

An area of 40.0 ha was allocated for the development of experimental farms for various disciplines under CEDA. Out of that 6 ha area have been developed and leveled at CEDA –I and 12 ha area have been developed at CEDA–II area near administrative building of the University for horticulture. Micro irrigation facility has been developed at the field and all the experiments were laid out on drip irrigation system.

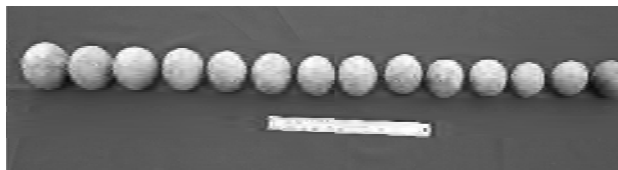
#### Planning and Layout

At CEDA –II location, approximately 5 ha of area has been developed as experimental fruit orchard and 2 ha area has been developed with protected structures like poly house, net house, mist chambers, etc. along with the area for fruit nursery mother block. Apart from this, Dhaincha was grown for green manuring on 6 ha. of area in CEDA –I.

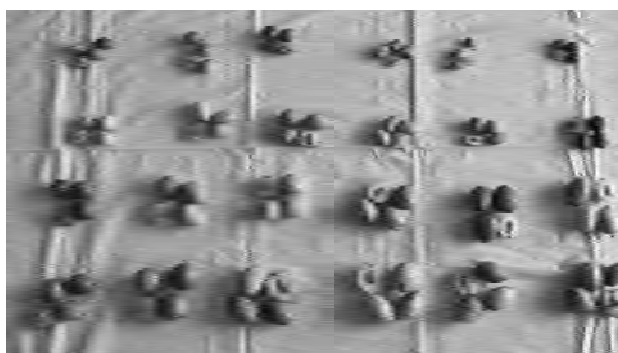


#### Survey and collection work

Survey of wood apple and ber germplasm was carried out during 2019-20. Fifteen accessions in wood apple and 20 accessions in ber were collected from different districts of Bundelkhand and adjoining areas. Fruits were evaluated for quality attributes. Bud woods will be collected during rainy season.



Variability in wood apple germplasm



Variability in ber germplasm

## Experimental Trials

Total 8 experiments were laid out at CEDA-II. Planting materials were collected from the concerned institutes and plantation work was accomplished.



Pomegranate



Ber



Bael



Aonla



Sweet Orange



Mandarin



Acid Lime



Guava



## Implementing genomics approaches for breeding high yielding mungbean genotypes with enhanced resistance to yellow mosaic in mungbean [*Vigna radiata* (L.) Wilczek]

### Salient Research Achievements

- The dominant monogenic inheritance pattern of MYMIV-resistance was recorded in both interspecific F2 population. The involvement of single dominant gene in governing MYMIV-resistance indicates the possibility of gene introgression in mungbean from TCR-7 (*Vigna sublobata*) and TCR-20 (*Vigna glabresense*). This also indicates the scope of effective utilization of desirable genes from wild relatives.
- Five previously reported QTLs for MYMIV resistance were validated through AM approach and three novel MYMIV linked loci i.e. CEDG293, DMBSSR008, DMBSSR068 were detected at LG2 and LG4 for MYMIV resistance.
- Two inter-specific mapping populations have been developed and seeds were maintained by SSD method for further mapping of other traits.
- The CYR1, PR1, YMV1 candidate gene was validated through experimentally for further utilization in marker assisted breeding programme of mungbean for enhancing MYMIV-resistance.
- 46 promising recombinants in MP-1 and 38 in MP-2 were validated as HR and will be effectively utilized in marker assisted mungbean breeding for enhancing MYMIV-resistance.

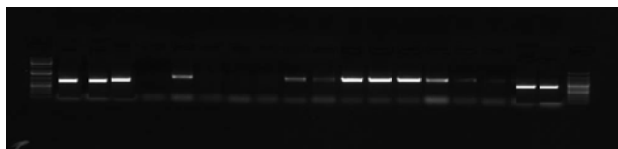


Evaluation of interspecific population against MYMIV disease

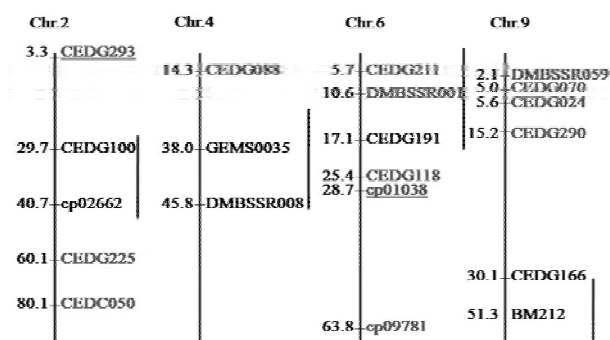


BM 2016-1-1 (Bold seeded)    BM 2016-1-2 (Long pod, Bold seed)    BM 2016-2-1 (Early flowering)  
Pictorial representation of some of the selected HR mungbean individuals

- The presence of MYMIV related genes have been noticed in the wild relatives used in this study, which need to further study through transcriptomic analysis for new insight in understanding the innate immunity mechanism.



Presence of CYR1 MYMIV-candidate genes (approx 1200 to 1300 bp amplicon) in recombinants of mungbean/TCR7 and mungbean/TCR20 background



Reported QTL regions were indicated by vertical line; novel associated markers were highlighted by red colour; the markers underlined explained higher phenotypic coverage than reported QTLs. Two novel QTLs region identified on Chr.2 and Chr.9.

Fig. The makers showing strong association with MYMIV-resistance

## Evaluation of PGR Mepiquate Chloride 5%AS in Pumpkin

The project was sponsored by M/S Gharda Chemicals Limited, Thane for two years i.e., 2018-19 and 2019-20. The performance of pumpkin variety Kashi Harit was observed at different doses of PGR Mepiquate Chloride 5%AS. The maximum fruit yield was recorded with application of PGR Mepiquate Chloride @ 1250 ppm at initiation of flowering.

## Residual effect in succeeding vegetable crop (var. Kashi Uday)

There was non-significant residual effect of PGR previously applied in pumpkin crop on seed germination percentage of succeeding vegetable pea crop variety Kashi Uday. The data presented in table 36.

## Evaluation of Chlorpyrifos 50% + Cypermethrin 5% EC against fruit borer and thrips of Chilli crop

The project was sponsored by M/S Gharda Chemicals Limited, Thane for two years i.e., 2018-19 and 2019-20. The chilli var. 'Kashi Anmol' was sown on 28.06.2019 for raising the nursery and the seedlings were transplanted on 03.08.2019 with a spacing of 60 x 45 cm in plots of 5 x 5 sq. m. The trial was laid out with seven treatments and three replications under randomized block design. Foliar sprays

**Table 36: Assessment of residual effect of Mepiquat Chloride on succeeding vegetable pea crop variety Kashi Uday**

Treatments	Seed germination (%)	Plant height at flowering (cm)
T <sub>1</sub> : @ 1000 ppm at flower initiation	86.0	34.9
T <sub>2</sub> : @ 1250 ppm at flower initiation	88.5	35.4
T <sub>3</sub> : @ 2500 ppm at flower initiation	90.6	31.6
T <sub>4</sub> : @ 1000 ppm 15 days after flower initiation	85.2	36.8
T <sub>5</sub> : @ 1250 ppm 15 days after flower initiation	57.5	33.2
T <sub>6</sub> : @ 2500 ppm 15 days after flower initiation	85.6	35.4
T <sub>7</sub> : @ 1000 ppm two sprays, first 15 days earlier and second at initiation of flowering	84.7	30.5
T <sub>8</sub> : Untreated control	86.4	34.6
CV (%)	9.7	11.2
SE (m)	3.1	1.6
CD (0.05)	9.7 NS	5.3



Hon'ble Vice Chancellor monitoring the harvested produce of research trial on pumpkin

of different treatments with Knapsack sprayer fitted with hollow cone nozzle @ 500 l/ha spray volume when thrips population reached at ETL @ 3 nymphs/leaf. The population of thrips was recorded on 10 randomly selected plants per treatment and per replication. Observations were recorded on 15 leaves (top 5, middle 5 and bottom 5) per 10 randomly selected plants in each replication of treatments. Pre-treatment populations of thrips were recorded one day before the spray of insecticide. Post-treatment observations were recorded at 3, 5 & 10 days after each spray. Phytotoxicity at T<sub>1</sub> (625+62.5 g a.i./ha) & T<sub>2</sub> (1250+125 g a.i./ha) and untreated control (T<sub>3</sub>) dose was recorded and there were no phytotoxicity observed in any treatment. The effect of different treatments on natural enemies has been observed. The larvae and adults *Cheilomenes sexmaculata*, *Coccinella septempunctata* and adults of *Chrysoperla carnea* were observed in a few numbers. In addition, few spiders were also observed. All the treatments were significantly superior over untreated check. The maximum reduction in thrips population was observed in T<sub>3</sub>. The maximum yield was also observed in T<sub>3</sub>. No phytotoxic effects were observed.

**Establishment of tissue culture facility: start up entrepreneurship through in- vitro propagation of commercially important plants in Bundelkhand region of Uttar Pradesh**

Banda university of Agriculture and Technology has established tissue culture laboratory (under RKVY, U.P.) in the College of Forestry. It includes a washing area; media

preparation, sterilization and storage area; an aseptic transfer area; environmentally controlled incubators or culture rooms and observation/data collection area. The washing area contain large sinks, racks, and have access to double distilled water. Media preparation area equipped with pH meter, microwave oven, micro-centrifuge, water-bath, hot plates/stirrers, refrigerator, deep freezer, incubator shaker, etc. Culture transfer area has laminar air flow chamber with HEPA filter, beads sterilizer, All surfaces in the room has designed and constructed in such a manner that dust and microorganisms do not accumulate. The culture room should have enough fluorescent lighting to reach the 10,000 lux; the lighting should be adjustable in terms of quantity and photoperiod duration. The culture room has fairly uniform forced-air ventilation, and a humidity range of 20-98%. Bared root plant from lab are hardened in Green house (100 m<sup>2</sup>) and shade net house (100 m<sup>2</sup>) to produce healthy ready to plant material.



**Evaluation of POLY4 as a source of multi nutrients and optimization of doses on chickpea in Bundelkhand region of India.**

To study the effect of POLY4 on physico-chemical and biological properties of soil and to optimize the dose of POLY4 for chickpea crop grown under irrigated and rainfed condition the experiments were conducted with the following treatments T<sub>1</sub>: Recommended dose of fertilizer (Standard practice 20:60:20:40 NPKS), T<sub>2</sub>: Farmer Practice (57.5 kg P and 22.5 kg N per ha.), T<sub>3</sub>: T<sub>1</sub>(for NPS) + 100 % K from Poly 4 (0:100), T<sub>4</sub>: T<sub>1</sub>(for NPK) + 50 % S from Poly 4, T<sub>5</sub>: T<sub>1</sub>(for

NPK) + 75 % S from Poly 4, T6: T1(for NPK) + 100 % S from Poly 4 (0:100), T7: T1(for NPK + 125 % S from Poly 4 (0:125), T8: T1(for NPK + 150 % S from Poly 4 (0:150). The data pertaining to grain yield of chickpea differed significantly due to different Poly4 based RDF treatments. Significantly highest value of grain yield (2984 kg ha<sup>-1</sup>) was recorded with the plot receiving RDF (20:60:40 kg NPS ha<sup>-1</sup>) + 150% K from Poly4 (T7) than rest of treatments under study, except T6, T8, T11, T12 and T13, where on par yield differences were obtained. Further, it was observed that treatment T7 recorded 37.9, 15.9 and 11.8% higher grain yield over farmers' practice (T3), RDF for Bundelkhand region (T1) and standard practice of RDF (T2), respectively. Application of recommended NPK (20:60:20 kg ha<sup>-1</sup>) along with 150% sulphur from Poly-4 (T13) and NPK along with 125% sulphur from Poly-4 (T12) ranked at 2nd and 3rd place in respect of grain yield of chickpea, respectively. The lowest grain yield (2164 kg ha<sup>-1</sup>) was recorded under the treatment T3 i.e. farmers' practice (57.5 kg P and 22.5 kg N ha<sup>-1</sup>). Biological yield of chickpea differed significantly due to various Poly4 based RDF treatments. Results further revealed that treatment T13 i.e. standard dose of NPK (20:60:20 kg ha<sup>-1</sup>) + 150% sulphur from Poly4 recorded significantly maximum biological yield (6895 kg ha<sup>-1</sup>) compared to rest of the treatments, except T7, T8, T11 and T12 where statistically comparable results were obtained.



IFFCO officials viz. Dr. K.N. Tiwari-State Consultant, Dr. R.K. Nayak- Chief Agronomist and Mr. Sachin Tiwari- Field Officer of IFFCO, visited Nano fertilizer trials conducted by Department of Soil Science & Agricultural Chemistry in different parts of village Luktara on 24 Feb. 2020.

### Entrepreneurial start-up of Apiculture: A vital input for doubling farmers income in Bundelkhand (U.P.)

This project is funded by RKVY. This project has been commenced since October 2019 with the sanctioned amount of Rs. 185 Lakh and remitted amount of Rs. 166 Lakh. The 6 Apiaries have been established at KVK Jhansi, KVK Jalaun, KVK Lalitpur, KVK Hamirpur, KVK Mahoba and KVK Banda. An Apiculture laboratory has also been established under this project. In addition, honey processing unit and bee wax processing unit have already been established. Farmers' selection in the different district through KVKs has been going on and bee colonies, bee boxes and beekeeping equipments have been procured. A state level seminar entitled "Apiculture as Entrepreneurial venture for Doubling Farmers' Income" was organized successfully under this project during February 25-26, 2020.

### Upgradation and development of KVK infrastructure for economic empowerment of farming community

This project has been commenced since August, 2019. The Government of Uttar Pradesh has sanctioned an amount of Rs. 300 Lakh under RKVY and remitted the same. This project was especially sanctioned for construction of the KVKs boundary wall. The boundary wall construction is going on at KVK Hamirpur, KVK Mahoba and KVK Jalaun and 60% of boundary wall construction work has been completed.

### Activities under MIDH Project

- The Turmeric Rhizomes were planted on 0.4 Hectare farm at BUAT, Banda and on 1 hectare of farm at KVK, Hamirpur and the record yield of 11.0 tonnes was achieved.
- The coriander crop (Var. ACR-01) was sown in 1.5-hectare area at university farm under different agro forestry systems and the total yield of 1.8 tonnes was obtained.
- The aromatic grass (Lemon Grass); Var. Krishan was planted in 0.75-hectare land. The crop is well and centre shall be able to produce the slips to farmer in days to come.
- The FLDs of various spices and aromatic crops including turmeric (var. NDH-01), Chilli (Var. Kashi Tej & Kashi Anmol), coriander crop (Var. ACR-01), Lemon Grass (Var. Krishna) were also conducted at farmers field.
- One farmers' training programme was organized at KVK, Banda. Total 85 farmers participated in the one day training and were encouraged to grow different type of spices crops as per the location for fetching the remunerative prices.



Production of Quality Planting Material (Turmeric)



Inspection of Coriander field by Hon'ble Vice Chancellor and other officials



## Directorate of Extension

The Directorate of Extension came into existence during 2015 as the Nodal Agency, responsible for promotion of Agriculture and allied sectors generally in Uttar Pradesh and particularly in Bundelkhand region of U.P. through professional extension services including training, farm advisory, on farm testing, demonstrations and information services. The Directorate provides guidelines, monitor, evaluate and process feedback the extension programmes of KVKs under jurisdiction of BUAT and various extension hubs located at the University headquarter as well as its jurisdiction area.

### Krishi Vigyan Kendra

The Krishi Vigyan Kendras (KVKs) are important nodal centers for the overall development of farming community through training, demonstration, OFTs, CFLDs and transfer of technologies programmes in agriculture and allied sectors. University comprises of six KVKs of Bundelkhand region namely Banda, Mahoba, Lalitpur, Hamirpur, Jalaun and Jhansi and one NGO KVK, Ganiva are working under the jurisdiction of Banda University of Agriculture and Technology, Banda. These KVKs were transferred to BUAT, Banda from CSAUA&T Kanpur, on 1<sup>st</sup> April, 2017.

### Important Events

#### 1<sup>st</sup> Meeting of Extension Council

The first extension council meet of the university was held on April 13, 2019 under the chairmanship of Hon'ble Vice Chancellor, Dr. U.S. Gautam. Dr. A.K. Singh, DDG, Agricultural Extension, ICAR, New Delhi was the chief guest of this occasion. Hon'ble Vice Chancellor said that various improved technologies in context to farming will be disseminated through different tools of ICT in near future. Dr. A.K. Singh insisted to develop farming as business model on the pattern of Maharashtra state. Self sustainable IFS models should be developed in huge numbers as per the need of the region. Dr. N.K. Bajpai, Director Extension, presented the annual report of the directorate. Dr. Dhoom



Release of Extension Highlights by Hon'ble Vice Chancellor, DDG (Agril. Extension), ICAR and other dignitaries



Felicitation of DDG (Agril. Extension), ICAR by Hon'ble Vice Chancellor

Singh, Director Extension, CSAUAT, Kanpur and Dr. Dev Singh, a progressive farmer of Hamirpur were also present in the meeting. The members of the council recommended that organic farming and employment generation through improved livestock production and management may be key sectors for agricultural development in this region. 'Extension Highlights 2018-19', the annual report of the Directorate was released by the dignitaries on this occasion.

#### QRT Visit of KVKs

All the Krishi Vigyan Kendras under Banda University of Agriculture and Technology were visited by QRT members constituted by Indian Council of Agricultural Research, New Delhi on November 13-14, 2019. The committee was chaired by Dr. Gaya Prasad, Ex-Vice Chancellor SVPUAT, Meerut. The committee members comprised Dr. Ramchandra, Ex-ADG, ICAR, New Delhi; Dr. Mathura Rai, Ex-Director, ICAR-IIVR, Varanasi; Dr. O.P. Singh, Ex-Director Extension, SVPUAT, Meerut; Dr. Y.P.S. Dabas, Ex-Director Extension, G.B.P.U.A.T., Pantnagar; Dr. Sadhana Pandey, Principal Scientist, ICAR-ATARI, Kanpur and Dr. S.R.K. Singh, Principal Scientist, ICAR-ATARI, Jabalpur. The committee also visited the demonstrations and field trials conducted at farmers' fields and interacted with the farmers of the region.



Hon'ble Vice Chancellor presenting memento to the Chairman, QRT

## New Initiatives

### BUAT-Kisan PRAGATI programme

Bundelkhand has predominantly an agrarian economy; over 80% of its population is dependent on agriculture, livestock, forest products and outsourcing income by seasonal migration. Considering agriculture as backbone of income for most of the rural households, Banda University of Agriculture & Technology, Banda has launched its flagship programme '**Programme for Rural and Agricultural Advancement through Technological Intervention (BUAT-Kisan PRAGATI)**' for agricultural and rural development in 100 villages of Bundelkhand. This programme was inaugurated by Hon'ble Vice Chancellor of BUAT, Banda on the occasion of 128<sup>th</sup> Birth Anniversary of Dr. B. R. Ambedkar on 14<sup>th</sup> April, 2019.

### Objectives of BUAT- Kisan PRAGATI

- Identification of area specific problems of farmers of Banda district.
- To provide trainings/ demonstrations of important agricultural technologies.
- Distribution of agri-inputs (quality seed of crops / planting material of horticultural and forestry species/ Mushroom culture/ Bio agents/Fish seeds etc.) to resource poor farmers.
- Revival of pasture land through community approach.
- Monitoring and impact assessment of the work in selected villages of Banda.

Initially, 10 villages viz. Ludhaura, Kanwara, Pachnehi, Panchulla, Durendi, Chahitara, Mawai Buzurg, Jaari, Pathri, Luktara have been selected for implementation of various development activities. Further, 90 more villages will be selected in upcoming phases. Scientists of the university have been regularly visiting the selected villages every weekend and conduct discussions and meetings with the farming community. The scientists also visit farmers' field, and provide need based scientific advice as well as low cost inputs to enhance productivity and profitability.

Considering geographical situations and availability of local resources, trainings on goatry, poultry, Mushroom cultivation, bee keeping, orchard establishment and

management, organic farming, input management, vegetable production, etc. were also imparted. BUAT- Kisan PRAGATI programme is emphasizing on popularizing low cost scientific interventions like line sowing and timely sowing of crops, soil and moisture conservation by land levelling, land shaping and farm bunding, seed treatment, seed replacement, balanced fertilization, optimum dose of agro-chemicals at right time with right method, crop enterprise diversifications, IFS technology, etc. During these visits, low cost inputs like fungicide and rhizobium culture for seed treatment, flat fan nozzle for surface application of herbicide, seeds of sesame, mustard, vegetables and flowering plants were also provided to selected farmers. Technology demonstrations were also conducted



Hon'ble Vice Chancellor launching BUAT-Kisan PRAGATI programme

under guidance of the scientists. Programme is also targeting the rural youth and motivates them to adopt farming with new mind set. Scientists of KISAN-PRAGATI YOJNA visiting farmers field during sowing time along with low cost inputs like and demonstrating practices on farm. Seed of some crops like sesame, mustard, vegetables, flowering plants also provided to needy farmers with valuable information. For overall enhancement of socio-economic status of rural population, a project proposal BUAT-SANGAM has submitted to Secretary MGNREGA for financial assistance.

### Bundeli Krishi Chaupal

The Banda University of Agriculture and Technology, Banda started a novel initiative "**Bundeli Krishi Chaupal**" to solve the social, educational, agricultural problems of farming community at their door step. The programme is

#### Activities conducted under BUAT-Kisan PRAGATI

S No.	Name of activity	No of events	No of Beneficiaries
1	Fruit crop production and management	05	45
2	Season based Vegetable crop production technology	04	50
3	Animal Health and Healthy feed to animals	03	35
4	Seed Treatments through fungicide/ trichoderma and liquid rhizobium	6	42
5	Agronomic practices- Line sowing, timely sowing	5	24
6	Weed Management in crops	05	30
7	Application of fertilizer in balance proportion	03	07
8	Foliar application of NPK and Zinc	02	15
9	Disease Identification and management	07	32
10	Spraying techniques of agrochemicals	02	15
11	IFS Model visit	4-5	100
12	Flower cultivation	02	32
13	Biofencing to protect crop and field from stray cattle	02	20

**Distribution of Agri-inputs under BUAT-Kisan PRAGATI**

S. No.	Name of Input and demonstration	No of events	No of Beneficiaries
1	Seed treatment with fungicide and Trichoderma	06	30
2	Application of Bordeaux Mixture	02	10
3	Seed treatment with liquid rhizobium	04	35
4	Vegetable seed to farmers & house hold Rabi & Summer	04	45
5	Flowering plants & seed	03	22
6	FLDs on improved varieties of mustard	70	70

organised in collaboration with 6 Krishi Vigyan Kendras of Bundelkhand region of Uttar Pradesh working under the administrative jurisdiction of BUAT, Banda. The main aim of this *Chaupal* is to revive the tradition of village *Chaupal* which was existing in the ancient time where villagers used to solve their local problems on their own at their place.

**Specific objectives of Bundeli Krishi Chaupal**

1. To strengthen the linkages between scientist of KVK, University, district administration and farming communities and provide scientific solution to their problems by use of locally available resources at farmer’s door step.
2. To bring all the stockholders/development agencies related to agriculture and allied sector at a single platform.
3. To popularize the ongoing State and central Government development programme/schemes among the farmers and motivate them to participate.
4. To encourage the farmers to use scientific and latest technology by different means of communication such as literature, poster, videos etc.
5. To collect the feedback of various programmes/technology/researchable issues and communicate back to the researchers.
6. To share the success stories of progressive farmers of district to motivate the fellow farmers.
7. Collect and promote local culture, traditions and successful ITKs in the area.

With the above mentioned objectives the first *Bundeli Krishi Chaupal* of BUAT Banda in collaboration with KVK, Banda was successfully organized on 19.06.2019 at village Jakhani of Banda District where 154 participants including



Farmers' Scientist interaction in Bundeli Krishi Chaupal

villagers, progressive farmers, Line dept. officials, scientist of BUAT and KVK have participated. The programme was inaugurated by Dr. U.S. Gautam, Hon’ble Vice Chancellor, BUAT, Banda. The programme has been divided in four sessions *i.e.* Overall Village Development policy, Agriculture, Livestock and Horticulture, where problems and possible solutions related to these aspects were discussed and recommendations were shared with all the participants of *Chaupal* for its proper implementation.

**Bundelkhand Jaivik Corridor: An action to promote organic farming**

Organic corridor programme for the promotion of organic farming among the farming community of seven districts of Bundelkhand region of Uttar Pradesh has been started by Banda University of Agriculture and Technology, Banda in association with all the seven KVKs under the jurisdiction of BUAT, Banda namely Banda, Chitrakoot, Hamirpur, Mahoba, Jalaun, Jhansi and Lalitpur. University has taken the lead role in creating awareness regarding organic farming among the farmers of these districts. The main objective of this programme is to promote organic farming, value added agri-produce and supply chain so that farmers may fetch remunerative price.

The Bundelkhand has shown a pathway showcasing its organically produced commodities and trading by adopting various marketing platform. University will act as an umbrella organization institutionalizing the efforts for promoting organic farming in the Bundelkhand region of Uttar Pradesh. The university will develop strategies to synergise the efforts of community based organizations (CBOs) and different stakeholders. In this way, a mission has been started to attain the sustainability of locale specific agro – eco systems. The programme was launched by Hon’ble Vice Chancellor at Hamirpur on June 3, 2019.

An action plan for organic corridor in Bundelkhand region was developed. Under this plan the entire activities will be carried out in five different phases. In its initial phase, two villages from each block of all seven districts have been identified. However, three more villages from each block will be selected during second phase. Interested farmers have been identified and trained by the scientists. So far, 84 operational villages have been selected from seven districts of Bundelkhand.



Hon'ble Vice Chancellor delivering a talk during Pre-Kharif Sammelan at Hamirpur



## Construction of Boundary Wall

With the financial support from RKVY under project entitled, 'Strengthening of KVK Infrastructure for Effective Transfer of Technology' the boundary wall and other infrastructures were developed at three KVKs viz., Mahoba, Hamirpur & Jalaun. The financial support of Rs. 1.00 Crore was provided to each KVK for this work. The developed infrastructure will be helpful in protection of KVK farm, seed production unit and implements and will also strengthen the ToT activities of KVKs.

## Centres of Excellence awarded to KVKs

Government of U.P has selected KVK, Banda and KVK, Hamirpur to establish Centers of Excellence on region specific themes. The KVK, Banda was awarded with Centre of Excellence in Organic Farming, while KVK, Hamirpur was awarded with Centre of Excellence in Pulse Production System. In order to meet out the following objectives of these centres Rs. 5.0 crore budget has been allocated.

Objective of Centre of Excellence in Organic Farming

- a. To develop organic production standard and package of practices.
- b. To study the strategic plan of marketing of organic produce in Bundelkhand region.

Objectives of Centre of Excellence in Pulse Production System

- a. To develop package of practices for pulses production suitable for rainfed agriculture.
- b. To develop marketing strategy for value added products of pulses.
- c. Human Resource Development and entrepreneurial skill among rural youth of Bundelkhand.

## Allocation of New Krishi Vigyan Kendra

The ICAR, New Delhi sanctioned to establish a new KVK in Prayagraj under the aegis of BUAT, Banda. For the establishment of KVK, the state government has allocated 9.67 ha land at Bahania Farm in the block Chhata, Prayagraj. The MoU and land transfer process is in final stage.



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An ISO 9001:2015 Certified

F.No.ATARI/2017-18/SSC/1463

Dated: 19.12.2019

To,

The Vice-Chancellor  
Banda University of Agriculture & Technology  
Banda - 210001  
(UP)

Sub: Establishment of Additional KVK in Prayagraj district of Uttar Pradesh - reg.

Sir,

The approval of the Competent Authority for the establishment of an additional KVK in Prayagraj district on 9.647 ha. land at Rajkiya Krishi Prakshestra, Vill. Chhata, Block. Bahariya, Tehsil. Phoolpur, Distt. Prayagraj, Uttar Pradesh under the administrative control of Banda University of Agriculture & Technology, Banda, Uttar Pradesh has been received from the Council. It is therefore, requested to kindly submit the following documents at this Institute for further processing the case.

1. 3 copies of MoU duly signed on each page by the Vice-Chancellor of the University with stamp, with two witnesses.
2. Land detail documents of (9.647 ha.) with Khata Numbers including Possession Certificate by the University.
3. The copy of Executive Order issued by the University proclaiming that the land in question has been earmarked for exclusive use of the activities of the KVK in Prayagraj district.

Yours sincerely,

Director

Enclosure :- A copy of the format of MoU.

## Major Extension Activities

### TSP Activities under KSHAMTA project

Three KVKs of BUAT, Banda namely, Mahoba, Jhansi and Lalitpur have identified and funded with KSHAMTA project under TSP with total budget of Rs 1.09 crore. Major programmes and activities were planned with key objectives of:

- Skill development of tribal community.
- Uplifting economic status of the society.
- Creating small scale entrepreneurship among rural youth.
- Demonstration of agricultural production technologies among tribal farmers to raise the average productivity.
- Keeping in view of the objectives, the following activities were planned:
  - i) Provide quality seed.

- ii) Trainings for farmers and rural youth.
- iii) Custom hiring center including all major equipment.
- iv) Sewing machines with skill trainings to women.
- v) High quality planting material.
- vi) Irrigation facilities.
- vii) NADEP and Vermicompost.
- viii) Allied agro-units of Goat, Poultry, Fish, Mushroom, etc.
- ix) Seed and grain storage facility.
- x) Small tools and equipment for weeding and plant protection.
- xi) Child and women health care through nutritional kitchen gardening.

### Activities under National Innovations on Climate Resilient Agriculture (NICRA) Project

The KVK, Hamirpur and KVK, Jhansi have conducted various activities under the NICRA project with the aim of enhancing resilience of Indian agriculture to climate change and climate vulnerability through strategic research and technology demonstration. A brief report of activities conducted during 2019-20 is given below:

#### Technology Demonstration

The technology demonstration component deals with demonstrating proven technologies for adaptation of crop and livestock production systems to climate variability. This component is implemented in selected vulnerable districts of the country through location specific interventions by Krishi Vigyan Kendras in a participatory mode. The project is implemented in 100 districts in the country involving over one lakh farm families across the country. These districts are selected based on the following criteria besides the strength of the KVKs:

Drought proneness based on 30 years rainfall data (Source : IMD)

Cyclone proneness based on frequency as recorded by IMD/State Disaster Management agencies.

Flood proneness based on IMD data and NDMA maps.

Vulnerability to heat wave and cold wave based on IMD grid data on temperatures.

Actual incidence of floods and droughts as recorded by AICRPAM centers

The interventions in the village panchayats are finalized following a participatory approach through the Village Climate Risk Management Committee (VCRMC), after the PRA to assess the climate related problems in the village and baseline survey. The program was launched formally in all the villages by involving the state line department functionaries and leaders of the panchayats to ensure local ownership of the project from the beginning and convergence of related schemes currently in operation in the panchayat. In each village, the interventions are made in the following four modules:

#### Module I: Natural Resource Management

KVKs demonstrated water saving irrigation systems such as sprinkler irrigation system, drip irrigation system and raingun on 20 ha of area with the involvement of 12 farmers. About 40-65% water saving was recorded under these interventions.

#### Module II: Crop Production

Under this module, 10 improved varieties of pulses and oilseeds (PU-I of Urd, RT-351 of Sesame, IPFD 10-12 of Field pea, JG-14 and RVG 202 of Gram, IPL 316 of Lentil, RH-749 of Mustard and Raj 4120 of Wheat) having characteristics of short duration, drought tolerant and comparatively high yield were demonstrated during *Kharif 2019* and *Rabi 2019-20*. The demonstrations were conducted on 120 ha of area and 25 – 68 % yield increase over farmers practice was observed. KVKs have also been laid out kitchen garden in 150 m<sup>2</sup> area with 51 farmer's families and it was recorded that these families fulfill their requirements of fresh vegetable up to 93% with an additional income of Rs.1500 to 6000 per year.



Drip Irrigation System





Chickpea var. RVG-202



Lentil var. IPL - 316

### Module III: Livestock and Fisheries

KVKs have conducted demonstrations on improved varieties of fodder crops such as maize var. African tall, sorghum var. MP-chari, berseem var. Vardan and oat var. JHO-822 on 15.8 ha area with 37 farmers. About 19 - 45% fodder yield was increased over farmer's practices as well as benefit: cost ratio was found 32% higher than existing practices. The interventions in balance feeding containing mineral mixture were also demonstrated and about 20% increase in milk production was observed. Breed improvement in goat (Breed- Jakharana) is also going on in adopted village.



Demonstration of forage crop under NICRA Project



Goat Breed-Jakharana and Bundelkhandi

### Module IV: Institutional Interventions

Krishi Vigyan Kendra, Kurara, Hamirpur is running this project in two adopted villages namely Manki Khurd and Pachkhura Khurd. While KVK, Jhansi has adopted Birgua and Ghandhinagar villages in district Jhansi. The farmers have been utilizing the farm implements from Custom Hiring Centre (CHC) in 280 ha of area. Total 35 trainings on different thematic areas were also imparted to farmers and farm women.

#### Development of IFS models at KVKs

More than 80% farm holdings have been shared by marginal and small farmers in Bundelkhand region. These land holdings have the least diversification which leads to the production risk and minimize the sources of additional income. Considering all the above facts, all KVKs of BUAT have established locale specific Integrated Farming System Model for best utilization of available farm resources. The IFS model included all possible allied agro units viz., Goat

Farming, Poultry, Cattle, Fish Farming, Vermicompost, NADEP, horticultural crops, etc. for maximum economic return. Recently, all KVKs have also started Apiculture units under IFS models. District wise plan of models is given in Table:

#### Skill Training under ASCI

Krishi Vigyan Kendra, Belatal, Mahoba organised two skill training programmes on 'Vermi-Compost Producer' and 'Mushroom Grower' from 27/02/2020 to 24/03/2020. The programmes were recognized by Agriculture Skill Council of India (ASCI), New Delhi. Twenty candidates were participated in each programme. Participants under 'Vermi-compost Producer' training were trained on selection of suitable place for compost preparation, size of vermi bed and preparation, selection of suitable earthworms, earthworm inoculation in the prepared bed, separation of earthworms from ready compost and packaging of compost. Trainees also got information on different species of earthworm, their functions, vermi-compost composition, precautions taken during compost preparation, benefits of vermi-compost over other composts, etc. However, trainees under 'Mushroom Grower' training gained knowledge on importance of mushroom as a food, nutritional benefits of mushroom, composition of mushroom, types of mushrooms, preparation of compost for button mushroom production, preparation of different types of bed for milky and oyster mushroom production and management of disease and insects. They also trained about medicinal properties of mushroom and its value addition into different products like pickle, soup, snacks, etc.

**Table 37: District wise plan of IFS model**

SI No.	Name of KVK	Selected Components	Area allocated (ha)
1	Banda	Crop production	0.40
		Horticulture	0.40
		Farm pond	0.10
		Cattle, , NADEP, Vermi unit, Beekeeping	0.10
2	Mahoba	Crop production	0.60
		Horticulture	0.20
		Farm pond	0.10
		Fodder, Beekeeping	0.05
		Cattle, Goat, Poultry, NADEP, Vermi unit	0.05
3	Jhansi	Crop production	0.40
		Horticulture	0.27
		Farm pond	0.105
		Fodder	0.20
		Cattle, Goat, NADEP, Vermi unit, Beekeeping	0.025
4	Jalaun	Crop production	0.40
		Horticulture	0.20
		Farm pond	0.10
		Fodder	0.05
		Cattle, Poultry, NADEP, Vermi unit, Beekeeping	0.05
5	Hamirpur	Crop production	0.38
		Horticulture	0.35
		Fodder, Azola, Beekeeping	0.2334
		Cattle, Goat, Poultry, NADEP, Vermi unit	0.0366
6	Lalitpur	Crop production	0.60
		Horticulture	0.20
		Farm pond	0.02
		Fodder	0.10
		Cattle, Goat, NADEP, Vermi unit, Beekeeping	0.08



Vermicompost unit under IFS



Dairy unit under IFS

### Interaction Program on Fish Production in Bundelkhand

Directorate of Extension and Department of Livestock Production & Management, BUAT, Banda jointly organized a one-day Training cum Scientist Farmers' Interaction Program on 'Possibilities and Scope of Scientific Fish Production in Bundelkhand' on 31.08.2019. Dr. S. K. Singh,

Principal Scientist, ICAR-National Bureau of Fish Genetic Resources, Lucknow was the chief guest and lead speaker of the program. Dr. U.S. Gautam, Hon'ble Vice Chancellor, BUAT, Banda addressed the trainees and informed that the university is committed to develop and disseminate climate resilient technologies in agriculture and allied disciplines. With this view, University has excavated 6 ponds to harvest rain water of the farm and recycle it in agricultural production. Dr. S. K. Singh, Scientist from NBFGR, Lucknow emphasized the integrated livestock fish farming system to follow in Bundelkhand, He told that livestock-fish system includes cattle-fish system, pig-fish system, poultry-fish system, duck-fish system, goat-fish system, rabbit-fish system. In this practice, excreta of ducks, chicks, pigs and cattle are either recycled for use by fish or serve as direct food for fish. He also told that, in integrated fish farming, available water, land, and pond silt can be fully used to increase food supply. Creation of a microecosystem that recycles resources, reducing organic pollution - for example, livestock and poultry manure are good organic fertilizers for fish farming; pond silt can be used as fertilizer for fodder crops, which can in turn be used to feed livestock, poultry, or fish. Dr. N. K. Bajpai, Director Extension discussed the importance of aquaculture in the state. He informed that the Directorate was also promoting seasonal fish farming in selected low land patches and water reservoir in each district of this region. Dr. Narendra Singh, Associate Director Extension told that fisheries is one of the most promising allied sectors in agriculture for enhancing income, employment generation, nutritional security and revenue generation of the state. Dr.



Farmer's Scientist Interaction programme

Mayank Dubey, Assistant Professor (LPM) convened the program and arranged the field visit of participants and experts.

### Training Programme

The Directorate of Extension, through its KVKs, imparted 488 trainings to the farmers, rural youth, extension functionaries and scientists. Shows the distribution of training programmes over different categories of participants. These KVKs extended their capacity building programmes to 10853 farmers, 417 rural youths and 804 extension functionaries. Besides this, the KVKs also organized 26 sponsored trainings for 1204 beneficiaries of other agencies and 12 vocational trainings for 225 potential entrepreneurs.

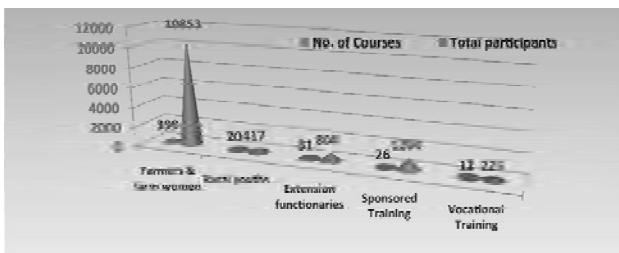


Table 38: Extension Programme

Category	No. of Programmes	Total Participants
Extension activities	2655	54558
Other extension activities	2080	3063
<b>Total</b>	<b>4735</b>	<b>57621</b>

Table 39: Mobile services

Message Type	Type of Messages						Total
	Crop	Livestock	Weather	Marke-ting	Aware-ness	Other enterprise	
Text only	2031	115	42	31	144	362	2725
Voice only	462	22	18	11	12	16	541
Voice & Text both	0	0	0	0	0	0	0
<b>Total Messages</b>	<b>2493</b>	<b>137</b>	<b>60</b>	<b>42</b>	<b>156</b>	<b>378</b>	<b>3266</b>
<b>Total farmers Benefitted</b>	<b>25303</b>	<b>105035</b>	<b>99304</b>	<b>99157</b>	<b>113248</b>	<b>105162</b>	<b>547209</b>

Table 40(A): Seed & Planting Material Production

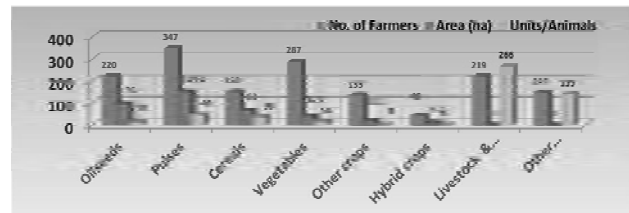
Heads	Quintal/Number	Value (Rs.)	Distributed to No. of farmers
Seed (q)	1632.52	10856758	153
Planting material (No.)	612222	67830	1306
Bio-Products (kg)	9232	60205	0
Livestock Production (No.)	1683	125460	0

Table 40(B): Soil Analysis

Type of Samples	No. of samples analyzed	No. of Beneficiaries
Soil	2439	2827

### Frontline Demonstration

Demonstration of latest technologies is approved extension methodology in rural area. The important technologies of seeds, weed control, INM and IPM were demonstrated in farmers' fields. Total 369.6 ha area covered under demonstration on 1177 farmer's field. The details of demonstration during 2019-20 are given.



### On Farm Testing

To solve the major problem of agricultural production different possible solutions have tested to assessment and refinement of technologies with support of farmers on farmers field during 2019-20 total 72 technologies were taken under OFT out of them 70 technologies gives in crops, live stock and other allied sectors were assessed and 02 technologies were refined in the field of livestock. Total 2478 trials were conducted with participation of 2599 farmers.

### Support to Farmers

Dissemination of day to day agricultural knowledge 6 KVKs of BUAT, Banda have organized following activities, input distribution, soil testing and mobile advisory services-



**Table 41: HRD & Publication**

<b>Sr. No.</b>	<b>Category</b>	<b>Number</b>
1	Workshops	15
2	Conferences	10
3	Meetings	59
4	Trainings for KVK officials	28
5	Visits of KVK officials	43
6	Book published	2
7	Training Manual	5
8	Book chapters	9
9	Research papers	27
10	Lead papers	0
11	Seminar papers	26
12	Extension folder	19
13	Proceedings	18
14	Award & recognition	8
15	On going research projects	16
16	Technical bulletins	1
17	Technical reports	3
18	Others	13



## Directorate of Seed and Farms

**B**anda University of Agriculture and Technology (BUAT) have been established in 2010 under Bundelkhand region of Uttar Pradesh which lies between the Yamuna and the Northern scarp of the Vindhyan plains. The area of operation of the university includes both the commissionaires of ChitrakootDham and Jhansi both comprising of Chitrakoot, Banda, Mohaba, Hamirpur, Jalaun&Lalitpur districts of Uttar Pradesh. The major crops of Bundelkhand region are wheat, pigeon pea, chickpea, lentil, pea, sesame, linseed and rapeseed mustard. The University has taken an initiative to provide quality seed of improved varieties with easy accessibility to increase the productivity of pulses and oilseeds and high income of the poor resource farmers of the region. In view of this, the five number of the pulse seed hub had been sanctioned to BUAT, Banda during 2016-17 in each KVK at Mahoba, Jalaun, Hamirpur, Lalitpur and BUAT, Banda to provide quality seed of pulses to the farmers of this region. The seed production of pulses is being taken at both farm and farmers field as participatory seed production programme in all the season of the year. The total 2635.06 q quality seed was successfully produced during 2018-19 comprising of 327.6q of major *kharif* pulses and oilseeds (Pigeon pea, green gram, black gram and sesame) and 2308.00 q of major *rabi* pulses, oilseeds and cereals (Chickpea, field pea, lentil, wheat, linseed, mustard, wheat and barley). The seed was distributed to

State Agril. Department, NGOs, Institutions and farmers to increase the productivity and additional income due to use of quality seed. Summary of Crop wise & Variety wise Seed Production in *Kharif*, 2018 & *Rabi*, 2018-19 are given in Tables 1 & 2. A total of 256.4 q seed of different varieties of black gram was produced; however, 13.4 q, 54.8 q and 3 q seed of green gram, pigeonpea and sesame, respectively, were produced during *Kharif*, 2018. The seed of different pulse crops viz., 667.1 q chickpea, 1115.9 q field pea, 212.6 q lentil; cereal crops viz., 288.7 q wheat, 7.7 q barley and oilseed crops viz., 13.0 q linseed and 3.0 q mustard were produced during *Rabi* 2018-19.



Seed Processing Unit at BUAT, Banda

**Table 42: Crop wise & Variety wise Seed Production in *Kharif*, 2018**

Crop	Variety	Seed Category	KVK, Hamirpur	KVK, Jalaun	KVK, Mahoba	KVK, Lalitpur	KVK, Jhansi	BUAT, Banda	RARS, Mauranipur	RARS, Gurusarai	RARS, Jhansi	TOTAL (Qtls)
<b><i>Kharif</i>, 2018</b>												
<b>Black Gram</b>	IPU 2-43	FS-I	-	11.40	-	-	-	-	-	-	-	11.4
	Uttara	FS-I	-	-	13.5	-	-	-	-	-	20.0	33.5
	Uttara	FS-II	-	-	-	42.0	-	-	-	-	-	42.0
	Shekhar-2	FS-I	-	-	-	116.0	-	-	-	-	25.0	141.0
	Shekhar-2	FS-II	-	-	-	-	6.5	-	-	-	-	6.5
	Pratap Urd-1	FS-I	-	-	-	10.0	-	-	-	-	-	10.0
	Pratap Urd-1	FS-II	-	-	-	-	12.0	-	-	-	-	12.0
<b>Total</b>				<b>11.40</b>	<b>13.5</b>	<b>168.0</b>	<b>18.5</b>				<b>45.0</b>	<b>256.4</b>
<b>Green Gram</b>	IPM 2-3	FS-I				3.0		10.40				13.4
<b>Total</b>						<b>3.0</b>		<b>10.40</b>				<b>13.4</b>
<b>Pigeon pea</b>	TGT-1	TL				3.0						3.0
	IPA 203	FS-I						51.8				51.8
<b>Total</b>						<b>3.0</b>		<b>51.8</b>			<b>54.8</b>	
<b>Sesame</b>	Pragati/T 78	TL				3.0						3.0
<b>Total</b>						<b>3.0</b>						<b>3.0</b>
<b>Grand Total <i>Kharif</i>, 2018= 327.6 Qtls</b>												

Grand Total *Kharif*, 2018= 327.6 Qtls

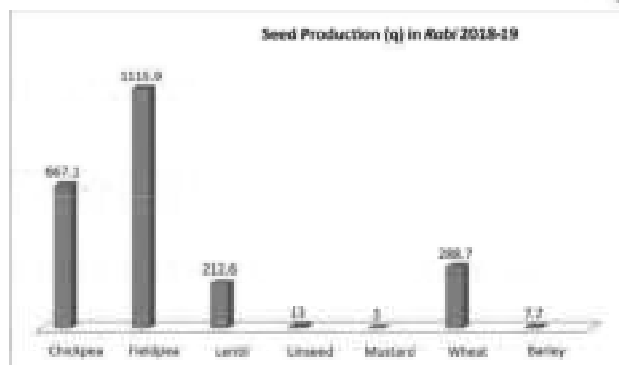
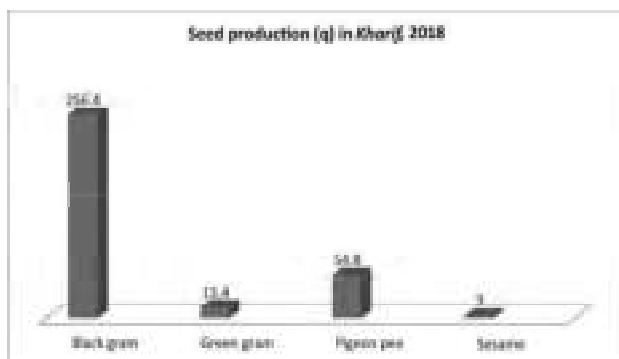


Table 43: Crop wise & Variety wise Seed Production in Rabi, 2018-19

Crop	Variety	Seed Category	KVK, Hamirpur	KVK, Jalaun	KVK, Mahoba	KVK, Lalitpur	KVK, Jhansi	BUAT, Banda	RARS, Maurani-pur	RARS, Gurusarai	RARS, Jhansi	TOTAL (Qtls)
<b>Rabi, 2018-19</b>												
<b>Chickpea</b>	RVG 202	FS-I	69.7	88.8	16.1	11.9	-	-	-	-	21.6	208.1
	JG-14	FS-I	-	20.8	-	-	-	-	-	-	-	20.8
	JG-14	FS-II	-	-	38.0	-	-	169.4	-	35	-	242.4
	JG-14	CS	102.0	14.4	47.4	-	-	-	-	-	-	163.8
	JG-14	TL	32.0	-	-	-	-	-	-	-	-	32.0
<b>Total</b>			<b>203.7</b>	<b>124.0</b>	<b>101.5</b>	<b>11.9</b>	<b>-</b>	<b>169.4</b>	<b>-</b>	<b>35.0</b>	<b>21.6</b>	<b>667.1</b>
<b>Fieldpea</b>	IPFD 10-12	FS-I	79.0	-	-	-	-	-	-	-	-	79.0
	IPFD 10-12	FS-II	-	-	117.0	-	55.0	-	34.8	130.0	-	336.8
	IPFD 10-12	CS	-	278.8	-	86.8	-	-	-	-	60.0	425.6
	IPF 4-9	FS-I	-	41.6	-	-	-	92.9	-	-	-	134.5
	Aman	FS-II	-	36.0	-	-	-	-	-	-	-	36.0
	Aman	CS	75.1	-	28.9	-	-	-	-	-	-	104.0
<b>Total</b>			<b>154.1</b>	<b>356.4</b>	<b>145.9</b>	<b>86.8</b>	<b>55.0</b>	<b>92.9</b>	<b>34.8</b>	<b>130.0</b>	<b>60.0</b>	<b>1115.9</b>
<b>Lentil</b>	IPL 316	FS -I	50.5	69.4	-	-	-	-	-	-	-	119.9
	IPL 316	FS-II	-	-	30.2	-	-	-	-	30.0	-	60.2
	KL 320	FS-II	-	-	-	-	-	21.8	-	-	-	21.8
	IPL 416	FS-I	-	-	-	-	-	5.8	-	-	-	5.8
	IPL 316	CS	-	-	4.9	-	-	-	-	-	-	4.9
<b>Total</b>			<b>50.5</b>	<b>69.4</b>	<b>35.1</b>	<b>-</b>	<b>-</b>	<b>27.6</b>	<b>-</b>	<b>30</b>	<b>-</b>	<b>212.6</b>
<b>Wheat</b>	DBW 107	FS-I	-	-	26.7	-	-	-	-	-	-	26.7
	PBW 110	FS-II	-	-	66.5	-	-	-	-	55.0	-	121.5
	Malviya 234	FS-I	-	-	4.0	-	-	-	-	-	-	4.0
	Raj 4120	FS-I	-	-	-	-	-	-	20.0	-	-	20.0
	Raj 4120	FS-II	-	-	21.3	-	-	-	-	-	-	21.3
	Raj 4120	CS	-	-	-	-	95.2	-	-	-	-	95.2
<b>Total</b>			<b>-</b>	<b>-</b>	<b>118.5</b>	<b>-</b>	<b>95.2</b>	<b>-</b>	<b>20.0</b>	<b>55.0</b>	<b>-</b>	<b>288.7</b>
<b>Linseed</b>	Padmini	BS	-	-	-	-	-	-	2.0	5.0	-	7.0
	Azad Alsi	BS	-	-	-	-	-	-	1.0	-	-	1.0
	Azad Alsi 2	BS	-	-	-	-	-	-	-	5.0	-	5.0
<b>Total</b>			<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>3.0</b>	<b>10.0</b>	<b>-</b>	<b>13.0</b>
<b>Mustard</b>	RH 749	TL	-	-	3.0	-	-	-	-	-	-	3.0
<b>Total</b>			<b>-</b>	<b>-</b>	<b>3.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>3.0</b>
<b>Barley</b>	BHS 400	TL	-	-	7.7	-	-	-	-	-	-	7.7
<b>Total</b>			<b>-</b>	<b>-</b>	<b>7.7</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>7.7</b>
<b>Grand Total Rabi, 2018-19= 2308.0 Qtls</b>												

Grand Total Rabi, 2018-19= 2308.0 Qtls



## Students' Welfare Activities

### Inauguration of New Office of the Dean Students' Welfare

The new office of the Dean Students Welfare has been established in Administrative Building for smooth conduct of students' activities. The office was inaugurated by the Hon'ble Vice Chancellor on 11<sup>th</sup> December 2019. Full-fledged facilities for office record, store room, sitting chambers of DSW and ADSW, waiting room for students and their parents/guest have been created.

### Sports Activities

A University Sports Board has been constituted to conduct the calendar based sports' events for the students. The board organises the indoor and outdoor sports activities (indoor and outdoor) round the year. The board also conducts special practice sessions for various sports and motivates the students to participate in tournaments at state and national levels.

### National Sports Day

The National Sports Day was celebrated on the occasion of birthday of Major Dhyan Chand on 29<sup>th</sup> August, 2019. Hon'ble Vice Chancellor casted light on the legendary figure Major Dhyan Chand and importance of games. During this occasion, 5 km race was organized based on theme 'RUN BUAT'. The winners were awarded with prizes and certificates. This programme was aimed to deliver a message to be fit and healthy. Hon'ble VC asked the students to play game daily for a while as per the interest. He also encouraged the students to participate in National level sports competition.

### AGRIUNISPORTS 2020

University sports team consisting of 28 studentathletes and two faculties as team manager and team coach, respectively, participated in 20<sup>th</sup> All India Inter Agricultural Universities Sports and Games Meet (Agri-UniSports) held at Sri Venkateshwara Veterinary University, Tirupati, Andhra Pradesh from March 1-5, 2020. BUAT team participated in various sports' events viz., Kabaddi, Badminton, Table Tennis and Athletics etc. during the event.

- 5<sup>th</sup> International Day of Yoga was celebrated in University on 21<sup>st</sup> June, 2019. In which all the faculty, staff and family members of the residential staff actively participated.
- A gymnasium for university students and staff members has been established. It is provided with different equipments i.e. weightlifting, and others are equipped in gymnasium. In addition, provision for indoor games e.g., table tennis, carom, chess has also been made in a separate section of the gymnasium.



March past by BUAT team during AGRIUNISPORTS 2020

- Organized Various sports activities including Inter Class Cricket, Chess & Slow Cycling Competition, Inter College Tug of War, Kabaddi, Volleyball & Track & Field Competition for Men's & Women's section as per the university sports calendar.
- Organized Mass Display program, PT Display & Inter College Staff Cricket Tournament on the occasion of Republic Day held on 26<sup>th</sup> Jan, 2020.

### Cultural Activities

To provide the better opportunities for students and conducting the competition pertaining to cultural (theatre, music and song), literary (debate, quiz, extempore and elocution) and Fine arts activities in very befitting manner; a University Cultural Committee has been constituted.

### AGRIUNIFEST 2020

The university team consisting of 10 students and two team managers participated in the 20<sup>th</sup> All India Inter Agricultural Universities Youth Festival Agri-Unifest which was organized by Indira Gandhi Krishi Vishwavidyalaya, Raipur (Chhattisgarh). The event was held during February 8-12 2020. During the program the students participated in various events viz., Drama, Fine Arts and Literary activities.



University cultural team of AGRIUNIFEST 2020

## University Foundation Day

10<sup>th</sup> Foundation Day of the University was organized on March 2<sup>nd</sup> 2020. Dr. U.S. Gautam Hon'ble Vice Chancellor, BUAT Banda graced the occasion as chief guest and addressed the gathering. The winner students of college and university level competitions organized during National Youth Week and other events like sports, cultural, literary, fine arts and NSS were awarded by Dr. U.S. Gautam, Hon'ble Vice Chancellor. The earmarked achievements of the university were also presented by the chief guest. He congratulated to all the winners and invoked to other students to come forward and participate ardently in the coming events.



Hon'ble Vice Chancellor distributing certificates during Foundation Day

## Other Important Events

### Workshop on Technical Writing for PG Students

Directorate of Research organized a workshop on "Modus of writing the synopsis, thesis, research papers and citation of references" on 27.07.2019 in Conference Hall, College of Horticulture. Dr. U.S. Gautam, Hon'ble Vice Chancellor presided the workshop. The PG students of all disciplines attended the workshop. The speakers of different disciplines gave detailed presentation on technical writing. The objective of this workshop was to orient the students about synopsis and thesis writing.

### Orientation programme for UG and PG students of Batch-2019

Orientation programme for the newly admitted students of batch 2019 in undergraduate and post-graduate degree programme of College of Agriculture and College of Horticulture and undergraduate degree programme of College of Forestry and College of Home Science was organized during 21<sup>st</sup> – 24<sup>th</sup> August, 2019 at college level. The students were formally welcomed and introduced to the campus, college and university. Hon'ble Vice Chancellor Dr. U. S. Gautam addressed the gathering and motivated the students and asked to excel in their academics. He pointed out the characters of a scholar and asked the students to develop high moral values by retaining those characters. The programme was aimed to imbibe a sense of commitment and responsibility among the students. The Registrar, Dean and

other authoritative bodies discussed about the university, college, academic regulations, courses' structure, examination patterns, library rules, students' welfare programmes, hostel rules, etc. through detailed presentations in this programme. The newly admitted students were also familiarized with the teaching and non-teaching staff members of the university.

## NSS Activities

The independent NSS cell in Banda University of Agriculture and Technology, Banda came in to existence w.e.f 19/07/2019 wide letter of OSD and State Liaison Officer NSS, U.P (No.04/70-NSS-19-21/17 dated 19/07/2019.) with allotment of 300 NSS volunteers. NSS CELL comprises three NSS units viz. Unit I (College of Agriculture), Unit-II (College of Horticulture) and Unit-III (College of Forestry) with a strength of 100 NSS Volunteers in each unit. After the allotment of NSS unit in BUAT Banda the University has deputed to Dr. Anand Kumar Chaubey as Programme coordinator, NSS Cell and three Programme officers namely Dr. Mukesh Kumar Mishra, Dr. Om Prakash and Dr. Chandrakant Tiwari for NSS Unit I, II & III, respectively on 16th October, 2019 to enforce the NSS activities in BUAT, Banda. An Orientation Programme was organized by the each NSS unit to aware the NSS Volunteers about NSS and its activities in 2019. In this orientation lectures, NSS volunteers of CoF were made aware about NSS origin, NSS philosophy, NSS activities (regular & special), NSS motto, etc.

## Blood Donation Camp

An awareness cum voluntary blood donation camp was conducted in collaboration with District Blood Bank office, Banda on March 4<sup>th</sup>, 2020 in the multipurpose hall of College of Agriculture, BUAT. Dr. U.S. Gautam, Hon'ble Vice Chancellor, BUAT inaugurated the camp by donating blood himself. Total 70 units blood was collected from the NSS volunteers, faculty members and staffs of the university. In the beginning of the programme Dr. S.K. Bajpai, Blood Bank Officer, Banda addressed the gathering and exhorted the audience about the importance of blood donation.



Hon'ble Vice Chancellor donating blood during Blood Donation Camp



### Parthenium Awareness Day celebration by NSS volunteers

Parthenium Awareness Day was celebrated by the NSS volunteers on 21<sup>st</sup> August, 2019. On this occasion, Dr. Dinesh Sah, Associate Professor and project coordinator, AICRP on Weed Management delivered a talk on Parthenium weed to the NSS volunteers. Dr. Sanjeev Kumar, Associate Dean, CoF addressed the NSS volunteers about the exotic weed problems associated with the forest lands. He called upon the students to make the campus free from this obnoxious weed. Dr. Chandrakant Tiwari, Dr. Dinesh Gupta and Dr. J. K. Tiwari also motivated the NSS volunteers to eradicate the parthenium and contribute to make a healthy society.

### Celebration of Swachha Bharat Mission and National Constitution Day

NSS unit of College of Forestry celebrated Swachha Bharat Abhiyan during the entire Month of October on every Saturday. Various programmes on different activities were organized to increase the awareness among the students and employees of the college. The programme was coordinated by Dr. Chandrakant Tiwari & Dr. Dinesh Gupta. NSS Unit of College of forestry also celebrated National Constitution Day on November 26, 2019. NSS volunteers, students, faculty and staff participated in the programme.

### National Youth Week Celebration

National Youth Week-2020 was organized during January 12-19, 2020. On very first day, inaugural programme was conducted by the NSS officials and volunteers. Dr. U.S. Gautam, Hon'ble Vice Chancellor was the chief guest in this occasion. On the birth anniversary of Swamy Vivekanad, he pointed out the famous quote "*Uttishtha Jagrat Prapya Varaannibodhat*" given by Swamy Ji and asked to the students to do excel in the field of academics and social services. He also guided to the officials to chalk out a comprehensive plan for NSS scheme. Dr. Anand Kumar Chaubey, NSS Coordinator highlighted about the purpose of celebration and released the schedules of week-long events. A wide array of activities like debate, essay writing, on the spot painting, quiz, chess, rangoli & slow cycling race were conducted during this week. Dr. Mukesh



Felicitation of Hon'ble Vice Chancellor during National Youth Week celebration

Kumar Mishra, Dr. Om Prakash and Dr. C.K. Tiwari, NSS Programme Officers of CoA, CoH and CoF, respectively, motivated the students and monitored the various activities during entire week. Dr. V.K. Singh, DSW and Mr. K.S. Tomar, ADSW provided their consistent support throughout entire week-long programme.



Students participating during chess competition event

### Anti-Ragging Cell

Anti-Ragging Cell was constituted as supervisory and advisory body for maintaining Ragging Free Environment in the University Campus. The main objectives of this cell are as follows:

1. To aware the students of dehumanizing effect of ragging inherent in its perversity.
2. To keep a continuous watch and vigil over ragging so as to prevent its occurrence and recurrence.
3. To promptly and stringently deal with the incidents of ragging brought to our notice.
4. To generate an atmosphere of discipline by sending a clear message that no act of ragging shall be tolerated and any act of ragging shall not go unnoticed and unpunished.

### Fellowships and Awards

The financial assistance to the UG and PG students is available for limited UG, and PG students as per rules of concerned Agriculture universities. There are several scholarships such as University financed scholarships, I.C.A.R., Samaj Kalyan Scholarship for scheduled castes, / scheduled tribes, general categories, other backward class



Recipients of scholarships with Hon'ble Vice Chancellor and authorities of BUAT

and minority students from Govt. of U.P. and Individual Fellowships, Mandi Samiti scholarships for the meritorious students.

Name of Scholarships	Remarks
ICAR Fellowship National Talent Scholarship	For Undergraduate Programme, @ 3000 per month for 04 year
U.P. Govt. Scholarship/ Dashmottar Scholarship	The scholarship is given to those students whose guardian's income is below Rs. 2.0 lac per year.

#### Students' Amenities

- i. An awareness and orientation programme on Post Matric Scholarship was organized on September 28, 2019.

- ii. Considering the economic condition of the university students, accidental life insurance policies have been implemented for all the bonafide students and their parents/guardians with the association of The Oriental Insurance Company Limited Thane, West Mumbai.
- iii. Railway concession facilities for the students have been created to avail the concession during educational tour, all India competitions and home town during semester break.
- iv. A Program was organised for distributing of scholarship approval certificates to the beneficiary students on the occasion of Republic Day 2020.

#### Celebration of Important Days and Awareness Programmes

Event	Date
World Earth Day	22th April, 2019
Maharana Pratap Jayanti	9th May 2019
International Day of Yoga	21st June 2019
73rd Independence Day	15th August, 2019
A Parthenium Awareness Week	16th - 22nd August 2019
National Sports Day	29th August 2019
World Ozone Day	16th September, 2019
Gandhi Jayanti	2nd October 2019
Wildlife Awareness Programme	17th October, 2019
Freshers day function	22nd October 2019
Birth Anniversary of Sardar Vallabh Bhai Patel/ National Unity Day	31st October 2019
National Constitution Day	26th November, 2019
Agricultural Education Day	03rd December, 2019
National Farmers' Day	23rd December, 2019
Awareness Programme for TB patients	31st December, 2019
New Year Day	01st January, 2020
Birth Anniversary of Swami Vivekananda/ National Youth Day	12th January, 2020
Birth Anniversary of Karpuri Thakur	24th January, 2020
National Voter's Day	25th January, 2020
71st Republic Day	26th January, 2020
International Day of Women and Girls in Science	11th February, 2020
National Science Day	28th February, 2020
10th University Foundation Day	2nd March, 2020
Wildlife Day	3rd March, 2020
Blood Donation Camp	4th March, 2020
International Women's Day	08th March, 2020
World Forestry Day	21st March, 2020



## Major Activities

### 1<sup>st</sup> Extension Council Meet

The first extension council meet of the university was held on April 13, 2019 under the chairmanship of Hon'ble Vice Chancellor, Dr. U.S. Gautam. Dr. A.K. Singh, DDG, Agricultural Extension, ICAR, New Delhi was the chief guest of this occasion. Hon'ble Vice Chancellor said that various improved technologies in context to farming will be disseminated through different tools of ICT in near future. Dr. A.K. Singh insisted to develop farming as business model on the pattern of Maharashtra state. Self sustainable IFS models should be developed in huge numbers as per the need of the region. Dr. N.K. Bajpai, Director Extension, presented the annual report of the directorate. Dr. Dhoom Singh, Director Extension, CSAUAT, Kanpur and Dr. Dev Singh, a progressive farmer of Hamirpur were also present in the meeting. The members of the council recommended that organic farming and employment generation through improved livestock production and management may be key sectors for agricultural development in this region. 'Extension Highlights 2018-19', the annual report of the Directorate was released by the dignitaries on this occasion.

### Celebration of World Earth Day

The World Earth day is a global event and every year more than 1 billion people in 192 countries participate in order to plant saplings, clean up their cities & roads and take pledge to protect their mother earth. This year, the Day was celebrated with the theme of '**Protect Our Species**' on April 22, 2019 at College of Forestry. Dr. U.S. Gautam, Hon'ble VC and the chief guest of the function, encouraged the students and motivated them to keep earth clean, green & sustainable by planting more and more trees, avoid using plastic bottles, polythene bags, etc. Dr. Sanjeev Kumar, Associate Dean, College of Forestry welcomed the guests. Rangoli making & Poster making competition were also organized. The students from different colleges actively participated and inked their ideas in the form of Rangoli & Posters. Students Ichha and Madhulika from CoF, stood first & second, respectively, in Rangoli competition & student Harsha, Kajal & Shambhvi stood first, second & third position, respectively, in poster making competition. Other senior officials of the university including Director, Admin. & Monitoring, Dean, CoA, Dean, CoH, ADSW, and other faculty members were present during the celebration.

### Visit of DG, UPCAR

Dr. Brijendra Singh, Director General, Uttar Pradesh Council of Agricultural Research (UPCAR), Lucknow visited the University on May 21, 2019 with Sri Gyan Singh, Secretary, UPCAR and an Interaction Meeting was organized by the Directorate of Research with faculty members of BUAT in the Chairmanship of Hon'ble Vice

Chancellor. During the meeting, ongoing teaching, research and extension activities were discussed and many valuable suggestions emerged out for quality teaching and need-based research in the perspective of socio-economic and agro-ecological situations of Bundelkhand region.



Hon'ble Vice Chancellor felicitating Director General UPCAR

### Celebration of International Yoga Day

5<sup>th</sup> International Yoga Day was celebrated at the university on June 21, 2019. Hon'ble Vice Chancellor Dr. U.S. Gautam encouraged the students and faculty members about yoga. Inclusion of yoga in daily life makes fit everybody physically and mentally. Dr. Abhishek Yadav, Assistant Professor (Physical Education) conducted yoga classes as per the programme defined by Ministry of Ayush, Govt. of India. The programme was initiated with the message of Hon'ble Prime Minister, Govt. of India followed by warm up yoga, different yoga asans, pranayam and meditation exercises. On the occasion of International Yoga Day, the gymnasium of the university was inaugurated by Hon'ble Vice Chancellor. Different tools of gym including weightlifting and others are equipped in gymnasium. In addition, indoor games e.g., table tennis, carom, chess can also be played in another section. The students and faculty members will be benefitted by these additional amenities in maintaining their fitness.



University officials practicing yoga on the occasion of International Yoga Day

### Student's visit to Bahilpurva Village, Chitrakoot

A trip of B.Sc. (Hons) Forestry, Batch 2017 was conducted on May 11, 2019 with the objective to document the valuable Indigenous Technical Knowledge (ITK) of the *Kol* tribe residing in Bahilpurva village of Chitrakoot, U.P. The information regarding usage and application of

various plant species in different activities viz. for construction of huts, agriculture implements, furniture, transport, hygiene, rituals and as ethno-medicines were recorded from the various age groups with the help of standard questionnaire. The uses of wood and other plant parts like leaf, bark, roots, etc. were observed and recorded directly from the tribal informants. These uses were grouped in categories. The visit was coordinated by Dr. Kaushal Singh and Dr. Dinesh Gupta.

### Plantation Drive

A mega plantation drive was organized in the university campus during 'Van Mahotsava Maah'. Dr. Mohammed Nasir, Assistant Professor, CoF organized *Avenue Plantation* programme at BUAT, Banda on 9<sup>th</sup> August 2019. Programme was inaugurated by Hon'ble VC and planted the tree saplings at different sites. Mega plantation drive of the species viz., *Delonix regia*, *Ficus tinctoria*, *Anthocephalus kadamba*, *Cassia siamea* and *Albizia* spp. were planted. Besides, plantation drive was continued during the entire 'Van Mahotsava Maah'. Dr. B.S. Rajpoot and Dr. Dinesh Gupta, Assistant Professors, CoF also carried out Teak plantation programme in the premises of Teacher's Hostel and along boundary wall of BUAT as on 24<sup>th</sup> to 31<sup>st</sup> August, 2019. All the senior officials, faculty members of different departments and students of all the four colleges participated in mega event and planted several saplings throughout the university campus.



Hon'ble Vice Chancellor planting a tree during plantation drive

### Celebration of Independence Day

The 73 Independence Day was celebrated with intense patriotic fervor in the university. On this occasion,

Hon'ble Vice Chancellor hoisted the flag and addressed the gathering. He highlighted the achievements of the university during recent past. He impelled to the faculty and students to make the farmers of Bundelkhand region self-reliant. He also thrusted upon to speed up the seed production programme. He asked that a number of development programmes would have been launched in near future.

### World Ozone Day

International Ozone day was organized by College of

Forestry on 16.09.2019. The event was inaugurated by the chief guest Hon'ble Vice Chancellor Dr. U.S. Gautam. An exhibition gallery was presented by the students on this occasion. The chief guest observed the models and posters made by the students and appreciated the efforts. He addressed to the students about the importance of ozone layer. This utmost important layer saves us from harmful ultraviolet radiation. Dr. U.S. Gautam asked everyone to stop using ozone depleting substances and save our planet earth. All the senior officials of the college and the university were present during the event.

### Fifth Convocation

The fifth convocation of BUAT was held on October 03, 2019 in the university. The programme was chaired by Hon'ble Governor of U.P. and Chancellor of the university Smt. Anandiben Patel. Prof Panjab Singh (President, National



Glimpses of Fifth Convocation

Academy of Agricultural Sciences) was the chief guest in that occasion. The B.Sc. (Hons.) Agriculture degree was conferred to 55 students of College of Agriculture and 48 students were awarded the B.Sc. (Hons.) Horticulture degree. The three students of each college viz. CoA and CoH were awarded Vice Chancellor Gold, Silver and Bronze Medal for attaining 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> position, respectively. In addition, total 26 Merit Certificates were also distributed to the students of colleges of Agriculture and Horticulture during this event. Hon'ble Governor asked to the university officials to do excel in the academics and also to serve the weaker section of the society. Hon'ble Governor emphasized to adopt the patients of tuberculosis (TB) to alleviate this infectious disease from the society. Prof. Panjab Singh said to transform the Bundelkhand region by different interventions of agriculture. Hon'ble Vice Chancellor Dr. U.S. Gautam highlighted the various ongoing developmental programmes for Bundelkhand region.

### Visit of Hon'ble Chief Minister, Govt. of U.P.

Hon'ble Chief Minister, Govt. of U.P., Shri Yogi Adityanath visited the university campus first time on December 08, 2019. Dr. U.S. Gautam, Hon'ble Vice Chancellor welcomed the Hon'ble Chief Minister and briefed the achievements of the university. Hon'ble Chief Minister reviewed the preparation of proposed National Conference on "Bundelkhand Development: Issues, Strategies and Way Forward" to be scheduled during January 10-11, 2020. He also reviewed the progress of developmental activities made by line department officials for Bundelkhand region.



Hon'ble Chief Minister, Govt. of Uttar Pradesh reviewing the progress activities

### Wildlife Awareness programme

The College of Forestry on October 17, 2019. The students from university participated in the programme. Dr. Sanjeev Kumar Associate Dean, CoF told the students about the constitutional provisions for wildlife conservation in the opening remark. Dr. G.S. Panwar, Dean CoA & Dr. S.V. Dwivedi, Dean CoH also addressed the gathering. A movie show about wildlife was organized and Dr. Aishwarya Maheshwari and Dr. Kaushal Singh faculties from CoF delivered special lectures on the different aspects on wildlife conservation to the participants.



Wildlife Week Celebration

### Meetings of Bundelkhand Vikas Board

Govt. of Uttar Pradesh has established Bundelkhand Vikas Board to chalk out the strategic plan at local level and to expedite the development processes in Bundelkhand region. Hon'ble Vice Chancellor, BUAT Dr. U.S. Gautam is one of the important members of this board. The 1<sup>st</sup> meeting of this board was organized in the chairmanship of Kunwar Manvendra Singh at Jhansi on November 11, 2019. Hon'ble Vice Chancellor proposed that the office of this board should be open in the university campus. In the same order Shri Kumar Kamlesh, Additional Chief Secretary and Shri K.V. Raju, Economic Counsellor, Govt. of U.P. visited the university campus on November 21, 2019 and a meeting was also held along with Shri Heera Lal, District Magistrate and other officials of the university regarding establishment of office of the board. After the discussion, it was decided to develop an office of the board in BUAT campus.

### ISEE National Seminar on Socio-Digital Approaches for Transforming Indian Agriculture

Banda University of Agriculture and Technology jointly organized a National Seminar on "Socio-Digital Approaches for Transforming Indian Agriculture" in association with Indian Society of Extension Education (ISEE), New Delhi and CCS Haryana Agricultural University, Hisar. The seminar was organized during November 20-22, 2019 at CCS Haryana Agricultural University, Hisar. More than 500 participants included scientists, academicians, extension professionals, research scholars and farmers across the country marked their presence. Prof. K.P. Singh, Hon'ble Vice Chancellor, CCSHAU, Hisar was the Chief Guest of the Inaugural Session, however, Dr. U.S. Gautam, President, ISEE and Hon'ble Vice Chancellor, BUAT, Banda presided over the session. A total of 63 research papers and 24 lead papers were presented in 12 technical sessions on various themes and one plenary session during three days' seminar. The seminar witnessed the august presence of many stalwarts from the field of extension education including Dr. V.V. Sadamate, Dr. O.S. Verma, Dr. G. Trivedi, Dr. C. Prasad, Dr. Veerbhadraiah, Dr. G. Eswarappa, Dr. Prabhu Kumar and Dr. K.L. Dangi.

### Celebration of Agricultural Education Day

The university and its constituent colleges celebrated Agricultural Education Day on Sunday December 3, 2019 to

commemorate the birth anniversary of Dr. Rajendra Prasad, first president of India. The main objective of agricultural education day was to attract school students towards agriculture. Dr. G.S. Panwar, Dean, College of Agriculture, Dr. S.V. Dwivedi Dean, College of Horticulture and Dr. Sanjeev Kumar, Assoc. Dean CoF arranged the visit of school students. About 450 students of different schools of Hamirpur and Banda districts visited the laboratories of different departments, experiential learning unit of mushroom, nursery and farms. A series of lectures were also delivered to the students in multipurpose hall of CoA on December 05-06, 2019.

### Celebration of World Soil Health Day

The World Soil Health Day was celebrated on December 05, 2019. The theme of World Soil Day 2019 was "Stop Soil Erosion, Save our Future". The theme focused on the increasing challenges in soil management and raised the profile of healthy soil by encouraging organizations, governments, communities and individuals around the world to work towards improving the soil health and its conservation. The programme was aimed to create the awareness on the importance of sustaining soil health and reduce the faulty agricultural practices. Dr. G.S. Panwar, Dr. Sanjeev Kumar, Dr. V.K. Singh, Head, KVK, Dr. Amit Mishra, Dr. Deo Kumar and, Dr. Arbind Kumar Gupta had delivered a lecture on soil conservation and their management. Students and faculty members of different colleges participated during this event.

### Celebration of National Farmers Day

The National Farmer Day (Rashtriya Kisan Divas) was celebrated on December 23, 2019 in the occasion of the birth anniversary of Chaudhary Charan Singh. Different speakers addressed the farmers, faculty members and students regarding agrarian reforms and new policies being introduced by Chaudhary Charan Singh. Kisan Divas is an acknowledgement of the vision of Chaudhary Charan Singh of a strong and independent Indian farmer. Members of the rural community and farmers organize agricultural shows and pay tribute to their beloved leader. Distinguished farmers of Bundelkhand region were awarded in the respective themes during this occasion.

### Awareness programme for TB patients

The faculty members of the university have adopted at least one TB patient. In that way, a total 79 TB patients from five blocks of Banda district were taken care of by the faculty members of the university. In this order, an awareness programme was organized on December 31, 2019 in the university. Hon'ble Vice Chancellor Dr. U.S. Gautam said that the capable civilians should come forward in the adoption of patients particularly those suffer from malnutrition problems. Dr. D.P. Verma, District Officer highlighted about the symptoms of TB and the preventive measures of this disease. During this event, the food articles

were distributed among the TB patients and their family members. The faculty members visited to the villages of adopted patients and interacted to the family members about the well being of the patients. Additionally, faculties also met the doctors of CHSs of the respective zones and got acquainted with the progress of the patients. The faculties motivated thoroughly to the patients and their family members to get rid of this disease from the society this kind of service is still running by the university officials.



Hon'ble Vice Chancellor presenting gift packet to the TB patient

### Republic Day Celebration 2020

The 71<sup>st</sup> Republic Day was celebrated in presence of the Chief Guest, Dr. U.S. Gautam, Hon'ble Vice Chancellor, BUAT, Banda, all students and faculty members of the university. The ceremony began with the unfurling of the National Flag by the Chief Guest, accompanied by the rendition of National Anthem led by the university students. Hon'ble Vice Chancellor addressed the gathering and highlighted upon the significance of Republic Day and the role of the youth in developing the nation. He also presented a glimpse of the recent achievements of the university and a roadmap for strengthening the units of the university. On this occasion, University Sports Board organized a mass display performance of students along with a friendly cricket match among staff members of the university.



Hon'ble Vice Chancellor delivering oration on the occasion of Republic Day

### State Level Seminar on Apiculture as Entrepreneurial Venture Doubling Farmers' Income

A Seminar on Apiculture as Entrepreneurial Venture

Doubling Farmers' Income was organized by Banda University of Agriculture and Technology, Banda during February 25<sup>th</sup> – 26<sup>th</sup>, 2020. The outset of inaugural ceremony was with the lightening of lamp by the Chief Guest Dr. U. S. Gautam, Hon'ble Vice Chancellor, BUAT. Looking at demand for honey in the nation and international market and potential of beekeeping in the Bundelkhand region Dr. U. S. Gautam urged the participating youths and farmers to come forward and to opt beekeeping as a profession. The assurance about necessary support for the establishment of apiary and marketing of bee produce will be provided by the university. Dr A. K. Singh, Organizing Secretary, briefed about the background and purpose of seminar. He expressed his sincere thanks to the funding Agency *Rashtriya Krishi Vikas Yojna* (RKYV) for providing financial and technical support. There were five technical sessions on Apiculture and conservation of honeybees, Management of honey Bees, Apiculture as an entrepreneurial venture, Role of honey bees in angiosperms and Bee Flora and floral dearth. Total 18 deliberations were given by the distinguished experts of different fields. Dr. H.P. Singh, Professor, Institute of Agricultural Science, BHU, Varanasi; Dr. A.K. Pandey, Dean, College of Horticulture and Forestry, RLBCAU, Jhansi and Dr. Neeraj Kumar, Associate Professor, TCA, Dholi, DRPCAU, Pusa (Bihar) participated as key invited speakers.



Hon'ble vice chancellor addressing the delegates in state level seminar

### AGRIVISION: 1st Zonal Convention of UP East Zone

1<sup>st</sup> Zonal Convention of UP East Zone on “Climate Resilient Agriculture for Sustainable Development of Rural Economy” was jointly organized by Vidyarthi Kalyan Nyas, Bhopal and BUAT, Banda during February 25–26, 2020. Sadhvi Niranjani Jyoti, Hon'ble Minister of State for Rural Development, Govt. of India was the chief guest during

inaugural session; Dr. U. S. Gautam, Hon'ble Vice Chancellor, BUAT; Guest of Honour, Dr. H. P. Singh, Registrar, CSAUA&T, Kanpur; Shri Sreehari Borikar, Shri Ramesh Garhiya, Shri Gajendra Tomar and Shri Prabhakar Chandel. Hon'ble Minister said that youths are showing less interest in agriculture in present scenario hence, all possible efforts should be taken in to consideration by the officials to create the awareness and to seek the employment in agriculture and allied sectors among youth. Hon'ble Vice Chancellor highlighted the importance of climate resilient agriculture. Dr. A.K. Singh, Organizing Secretary of the convention briefed about the background and purpose of the event. There were total three technical sessions in which Dr. Deepa Dwivedi, Professor, BBAU, Lucknow; Dr. U.K. Shukla, DRI, Chitrakoot; Dr. Punit K Dwivedi, Professor, MGI, Indore interacted to the participants on various aspects. The chief guest of the valedictory session was Dr. Arvind Kumar, Hon'ble Vice-chancellor, RLBCAU, Jhansi. Dr. S.V. Dwivedi, Chairman, Organising Committee, extended the vote of thanks. Agri-Quiz was also organized during the convention. A total of 230 participants were participated from different agricultural universities of Eastern Uttar Pradesh region.

### Celebration of International Day of Women and Girls in Sciences

International Day of women and girls in Sciences was organized on February 11<sup>th</sup> 2020 at College of Forestry. The event was chaired by Dr. Sanjeev Kumar, Associate Dean, CoF. The role and contribution of women and girls in various science sectors was discussed by the key speakers. The participants exchanged their views to empower the women and girl in the society. The short movies, based on the world renowned women scientists with their great inventions, were displayed to motivate the students during the event.

### National Science Day Celebration

National Science Day was organized by CoF on February 28<sup>th</sup> 2020. The theme of the event was “Women in Science” and the event was started with wreathing to Sir C.V. Raman. The contributions of legendary scientists all across the globe in the field of science were displayed through short movies to inspire the students. The faculty members shared their opinions about science and its horizon to motivate the students in their academics and scientific innovations.

### Wildlife Day Celebration

The wildlife conservation is embedded in the Constitution of India. So, it becomes our duty and responsibility to conserve and preserve our flora and fauna and natural ecosystems. Wildlife day was organized by college of Forestry on March 3<sup>rd</sup> 2020. During the event organized by Dr. Aishwarya Maheshwari, Assistant Professor, Wildlife Sciences, CoF along with Dr. Sanjeev

Kumar, Associate Dean and faculty members of the CoF, the students of the university were briefed about the value of wildlife. The value of wildlife may be defined on the classification adopted and also relies on a pragmatic approach differentiating among the ecological role of wildlife, the economic importance of wildlife, the nutritional value of wildlife, the socio-cultural significance of wildlife. Altogether, wildlife is one the major contributing biodiversity component, ensures life and ecological balance on the planet. With the expectation of contributing in the field of wildlife research and conservation and in the Bundelkhand region in particular, the programme was ended with showing a documentary on wildlife.

### World Forestry Day Celebration

The World Forestry Day was organized on March 21<sup>st</sup> 2020 at CoF. This event was organized by Dr. Dinesh Gupta, Dr. Bhalendra Singh Rajput, Dr. Chandrakant Tiwari and Dr. Avanish Sharma in the leadership of Dr. Sanjeev Kumar, Associate Dean, College of Forestry. The other faculty members of College of Forestry accompanied the event. Dr. G.S.Panwar, Registrar, BUAT was invited as special guest for the event. He planted a seedling of *Saracaasoca*, State tree of Uttar Pradesh in the premises of CoF. The issues of global warming and role of forest to combat the adverse effects of climate change were addressed.

### Awareness on COVID 19 and safety issues

In light of outbreak of COVID 19, as per the direction of Hon'ble Vice Chancellor, BUAT, urgent action and initiatives were taken by all the university authorities Deans of CoA, CoH and Associate Deans of CoF and CoHSc. The guidelines released by Govt. of India and Govt. Of U.P. were strictly followed in the university. The area wide sanitization programme implemented by the respective authorities. All the field labourers, mess staff were trained by Dr. B.S. Rajput and Mr. K.S. Tomar about COVID 19 and the masks, gloves and hand sanitizers were also distributed to them. Awareness among students including NSS volunteers were made through presentations and informal interaction by Dr. Dinesh Gupta and Dr. Chandrakant Tiwari.

### National Seminar on 'Bundelkhand Development: Issues, Strategies & Way Forward'

National Seminar on 'Bundelkhand Development: Issues, Strategies & Way Forward' was organized by Banda University of Agriculture and Technology, Banda in collaboration with Department of Planning, Government of U.P. The seminar was held during January 10-11, 2020 at BUAT, Banda. The seminar was attended by 1595 delegates from Primary, Manufacturing, Service and Water sector including scientists, Experts, Policy makers, Beneficiaries, Bureaucrats, Bankers, Markets Producers and NGOs. Hon'ble Minister of Agriculture, Agriculture Education and Research, Shri Surya Pratap Shahi inaugurated the seminar with key presence of Shri Kunwar Manvendra Singh, Chairman, Bundelkhand Development Board, Dr. U.S. Gautam, Hon'ble Vice Chancellor, BUAT and other dignitaries.



Hon'ble Minister and Members of Bundelkhand Vikas Board inaugurating the National Seminar



Hon'ble Vice Chancellor presenting a report during National Seminar

**Table 44: The University released COVID19 advisories time to time**

Date	Advisory
05/02/2020	Release of Advisory to all students to create awareness about Corona disease infestation.
12/03/2020	Advisory released among the students in hostels for adopting personal safety measures.
13/03/2020	Suspension of all academic activities of university.
13/03/2020	A Camp Office was established for helping the students residing in hostels and follow precautionary measures. All hostel wardens and 06 associated persons were deputed for 24 hour services in hostel with a temporary ambulance.
13/03/2020	Poster and Banners were displayed in all colleges, hostels, university main gate, shopping centre and stadium for general awareness.
13/03/2020	Sanitation campaign was conducted through out the campus and mask, gloves, sanitizers were provided to all staff members.
17/03/2020	After suspension of all academic activities, the students were directed to vacate the hostels excluding international students.
21/03/2020	Directives issued to all colleges, directorates, KVKs and Research Centers to depute 50 percent staff in rotation system. Advisory given to remaining staff for work from home and to start online classes.



During the seminar, various issues under Primary, Manufacturing, Social, Water and Service sectors were addressed with holistic approach to develop master plan for the development of Bundelkhand region. Crop diversification, climate change, *Anna Pratha*, skill development of rural youth, organic-farming and farm mechanization were major themes of Primary sector. Valedictory Session of seminar was conducted on January 11<sup>th</sup> 2020 in the presence of Chief Guest Dr. Mahendra Singh, Hon'ble Minister of Jal Shakti, Govt. of U.P. Smt. Kamal Rani Varun, Hon'ble Minister of Technical Education and Shri Lakhan Singh Rajpoot, Hon'ble Minister of state Agriculture, Agriculture Education and Research were also present during the occasion as special guests. The principal secretaries of concerned sector and key rapporteurs of the session presented brief report during wrap-up session. The two days National Seminar was ended with vote of thanks by Dr. U.S. Gautam, Hon'ble Vice Chancellor, BUAT.

### EDP on Goat Farming

Department of Agricultural Extension, College of Agriculture organized 5 days Entrepreneurship Development Programme on Goat Farming from 18 to 22 February, 2020. The EDP was conducted under SC-ST Sub Plan Scheme of ICAR, New Delhi. The programme was designed such a way that the aspiring entrepreneurs equip themselves with Managerial, Financial and Entrepreneurial skills along with Domain specific skills. The twenty participants were selected for the programme on the basis of their interest and need. The participants were comprised of twelve men and eight women farmers from Banda district. Dr. Mayank Dubey, Assistant Professor, (LPM) has given lectures on feed and nutrition, and housing management, while Dr. Manvendra Singh, SMS (Animal Science) explained health and disease management; and reproductive management, etc., Dr. P.K. Ojha, Assistant Professor (Agril. Ext.) conducted a session on entrepreneurship development and management. An exposure visit to IGFRI, Jhansi was also conducted during the programme. On the closing day of programme, twenty units of *Bundelkhandi* goats (one male and two females per unit) were distributed to each



Hon'ble Vice Chancellor distributing Bundelkhandi goats to the farmers

participant. Hon'ble Vice Chancellor advised farmers to start value addition products of goat meat and milk for profitable goat farming. He was the Chief Guest of valedictory function. Dr. G.S. Panwar, Dean, CoA said that goat farming gives sure income to the farmers and well suits for Bundelkhand region. Dr. B.P. Mishra, HoD (Agril. Ext.) proposed vote of thanks. The programme was coordinated by Dr. Dheeraj Mishra.

### District level Farmers' Training organized under MIDH

A One Day district level farmers' training on 'Scientific Cultivation of Spices in Bundelkhand' was organized by Department of Agricultural Extension on 16<sup>th</sup> May, 2020 at Krishi Vigyan Kendra, Banda. The training programme was funded by Directorate of Arecanut and Spices Development (MoA&FW), Calicut, Kerala under Centrally Sponsored Scheme- Mission of Integrated Development of Horticulture. The programme was inaugurated by Dr. G.S. Panwar, Dean, CoA as Chief Guest. He encouraged the farmers to grow different location specific spices crops for fetching the remunerative prices.



Farmer's Training

### Pisciculture in water reservoirs

The University has started fish farming in University farm ponds. Initially the ponds were developed as a rain water harvesting unit in the University to facilitate life saving irrigation to the crops in the time of water scarcity. At present, the university has eight farm ponds located at different places as per topographical features of the land, out of which, three ponds were selected in the year 2019 to promote pisciculture. Approximately 18000 fish seeds and fingerlings of different types of Indian carp like Rohu, Katla, Nain, Grass and Silver carp fish was released in these ponds. The first harvesting of fish is yet to be done, however the average growth was found satisfactory. These units will serve in developing the region specific aquaculture based integrated models for Bundelkhand.

### Activities under JRF Cell

In the field of Agriculture and allied sciences, students of the university have been excelling up in ICAR-JRF and other competitive examinations to pursue their higher

education. During the last academic year (2018-19), three students of the university secured presence in All India level by achieving of JRF's in horticulture. Although, 74 students were appeared for the ICAR JRF examination, out of which 21 students (28.4 %) were qualified for counseling and finally 13 students took admission in IARI, SAUs and other institutes of national repute. Altogether, 3 students have got admission in PG degree programmes with fellowship. For the preparation of JRF aspirants, the cell has been consistently conducting special classes, mock tests and invited lectures. During the year 2019-20, 60 classes, 6 invited lectures and 13 mock tests were scheduled. Besides this, the cell is also providing comprehensive study material on specified subjects and general agriculture.

### Activities of Placement and Counseling Cell

#### Students- Industry interface

Counseling and Placement cell of university, organized a Students-Industry interface by inviting Crystal Crop Protection on 8/10/19 and Geolife Agritech Pvt Ltd on 13/10/19, an interactive sessions were conducted by their professional team with the final year students of B.Sc.(Ag) to make them aware about the different horizons of agri-input sectors and working of their company. After that, through written test and personnel interview, 53 students were selected for their internship of 45 days in the company (pan India).

#### Career Orientation workshop

Cell organized One-day Career Orientation workshop on 14/10/19 by the professionals of Agriposition. Com and I.S.A.B to sensitize the Undergraduate and Post graduate students about future career prospects related to management in agriculture and allied streams. In this program 240 students participated.

#### Personality Development session for students

The Counseling and Placement Cell, BUAT organized a special session on personality development for



Mr. Dimpy Mishra delivering a talk during personality development session

undergraduate and post graduate students. The session was focused on “The Role of Performing Arts in Improving Communication Skills”. The key speaker was renowned theatre director Mr. Dimpy Mishra, Uttar Pradesh Sangeet Natak Academy Awardee 2020. He emphasized that performing arts, especially theatre is one of the best icebreaker and team building tools. It is impactful on expected communication and presentation skills. He also demonstrated some basic exercises helpful to improve oral skills and to overcome stage jitters. Dr. Abhishek Kalia moderated the session and more than 250 students joined this session.

#### Workshop on Development of Soft Skills for Entrepreneurship among Agri-graduates

The Counseling and Placement Cell of the university organized one-day awareness Workshop on ‘Development of Soft Skills for Entrepreneurship among Agri-graduates’ on February 29<sup>th</sup> 2020 with the objective to create the awareness among agri-graduates on soft skills, innovativeness and entrepreneurship. The workshop was organized in collaboration with ICAR-NAARM, Hyderabad under National Agricultural Higher Education Project. A total of 102 students from CoA and CoH were participated in this workshop.



## University Publications

### Research Papers/Review Papers/Lead Papers

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12. Kumura, A., Pandey, G., Mishra, P.P. and Kumar, R. 2019. Effect of integrated nutrient management on growth and flowering of African marigold (*Tagetes erecta*) cv. Pusa Narangi Gaiinda. *International Journal of Current Microbiology and Applied Science*, 8(11): 1271-1278.
13. Longjam, S., Heisnam, P., Moirangthem, A., Sah, D. and Irungbam, P. 2019. Response of integrated nutrient management on dry matter, yield and nutrients uptake at different growth stages of tomato. *Current Advances in Agricultural Sciences* 11 (1):71-74.
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- Popular Articles**
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- Books-Self authored/co-authored/edited**
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  3. Mishra, B.P., Gupta, B.K., Mishra, D., Ojha, P.K. and Gautam, U.S. 2019. Doubling Farmers' Income through Appropriate Agricultural Technologies and Extension Approaches. Biotech Books, New Delhi.
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  5. Singh, K., Singh, M.K., Bisht, V. and Maheshwari, A. 2020. Ethnobotany for Foresters. New India Publishing Agency, New Delhi. (ISBN 978-938-95-7192-9)
- Book Chapters**
1. Chandra, U. and Maheshwari, H. 2019. Dissemination of Indian Agriculture Information through Information and Communication Technology. *Agricultural Extension for Rural Development* Biotech Books, New Delhi, ISBN 978-81-7622-460-4 (Accepted).
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  5. Singh S., Pathak, J., Singh M.P., Singh R.P. and Singh A.K. 2020. Review on changing scenario of technological interventions under organic farming in India. Published by: AkiNik Publications, (Edts): A.K. Rawat and U.K. Tripathi. Pp:63-80.
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- Manuals**
1. Mishra, A.C.; Srivastava, A.K.; Prasad, D. and Singh, V. (eds) *In: Nagaich, V.P., Soni, P.K. and Tiwari M.M.* 2019. *Alsi me Utpadan evam Moolya Sanvardhan hetu Unnat Takniki*. Publication No. DoR 01/2019, Directorate of Research, BUAT Banda. 8 pages.
  2. Mishra, A.C.; Srivastava, A.K.; Prasad, D. and Singh, V. (eds). 2019. *Research Highlights-2019*. Publication No. DOR 02/2019, Directorate of Research, BUAT, Banda. 44 pages
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  6. Prasad, D. 2020. *Button Mushroom Utpadan Taknik*, Publication No. BUAT(F)/01/2020. 6pp
  7. Prasad, D. 2020. *Dhingri (Oyster) Mushroom Utpadan Taknik*, Publication No. BUAT(F)/02/2020. 6pp
  8. Prasad, D. 2020. *Dudhiya (Milky) Mushroom Utpadan Taknik*, Publication No. BUAT(F)/03/2020. 6pp
  9. Prasad, D. 2020. *Pual (Paddy Straw) Mushroom Utpadan Taknik*, Publication No. BUAT(F)/04/2020. 6pp
  10. Prasad, D. 2020. *Mushroom Samvardhan (Culture) evam Mushroom Beej (Spawn) Utpadan Taknik*, Publication No. BUAT(F)/05/2020. 6pp
  11. Prasad, D. 2020. *Mushroom ke Pramukh Rog evam Keet: Lakshan and Roktham*, Publication No. BUAT(F)/06/2020. 6pp
  12. Prasad, D. 2020. *Mushroom ke Vibhinn Vyanjan*, Publication No. BUAT(F)/07/2020. 6pp



## Faculty Development

The College has highly competent faculty who are contributing significantly in teaching, research and extension activities of the University. College is continuously finding new avenues to upgrade the academic standards of teaching, research and extension activities. College always motivates faculty to participate in the various capacity development programmes, seminars, workshops, etc. organized by reputed agencies/organizations. The experience gained through such programmes has been effectively utilized in teaching and research programme.

### Faculty participation in Capacity Development Programmes/Trainings /Conferences

#### College of Agriculture

S. No.	Name & Designation	Nature of programme	Date	Venue	Name of the Programme
1.	Dr. Kamaluddin, Associate Professor	Brainstorming session	May 20, 2019	BUAT, Banda	Prioritization of agricultural research in Bundelkhand region of Uttar Pradesh
2.	Dr. C. M. Singh, Assistant Professor	Brainstorming session	May 20, 2019	BUAT, Banda	Prioritization of agricultural research in Bundelkhand region of Uttar Pradesh
3.	Dr. Vijay Sharma, Assistant Professor	Brainstorming session	May 20, 2019	BUAT, Banda	Prioritization of agricultural research in Bundelkhand region of Uttar Pradesh
4.	Dr. Hitesh Kumar, Assistant Professor	Brainstorming session	May 20, 2019	BUAT, Banda	Prioritization of agricultural research in Bundelkhand region of Uttar Pradesh
5.	Dr. Mukul Kumar, Professor	Brainstorming session	May 20, 2019	BUAT, Banda	Prioritization of agricultural research in Bundelkhand region of Uttar Pradesh
6.	Dr. Vaishali Gangwar, Assistant Professor	Brainstorming session	May 20, 2019	BUAT, Banda	Prioritization of agricultural research in Bundelkhand region of Uttar Pradesh
7.	Dr. Mayank Dubey, Assistant Professor	Brainstorming session	May 20, 2019	BUAT, Banda	Prioritization of agricultural research in Bundelkhand region of Uttar Pradesh
8.	Dr. Umesh Chandra, Assistant Professor	Brainstorming session	May 20, 2019	BUAT, Banda	Prioritization of agricultural research in Bundelkhand region of Uttar Pradesh
9.	Dr. Kamaluddin, Associate Professor	Workshop	May 25-27, 2019	Agricultural University, Kota	AICRP-Pigeon pea workshop
10.	Dr. Dinesh Sah, Associate Professor	Conference	Jun. 1-5, 2019	Online	1 <sup>st</sup> International Virtual Conference on alternative resources and technology based agriculture (ARTBA-2019)
11.	Dr. Aniket H Kalhapure Assistant Professor	Conference	Jun. 1-5, 2019	Online	1 <sup>st</sup> International Virtual Conference on alternative resources and technology based agriculture (ARTBA-2019)
12.	Dr. Arun Kumar Assistant Professor	Conference	Jun. 1-5, 2019	Online	1 <sup>st</sup> International Virtual Conference on alternative resources and technology based agriculture (ARTBA-2019)
13.	Dr. Bhanu Prakash Mishra Associate Professor	Annual Review Meeting	Jun. 11-12, 2019	OUAT, Bhubaneswar	16 <sup>th</sup> Annual Review Meeting of MIDH Programme
14.	Dr. Dheeraj Mishra Assistant Professor	Annual Review Meeting	Jun. 11-12, 2019	OUAT, Bhubaneswar	16 <sup>th</sup> Annual Review Meeting of MIDH Programme
15.	Dr. Jagannath Pathak, Associate Professor	Conference	Jun. 29, 2019	UPCAR, Lucknow	Workshop on Soil organic carbon status in U.P.: strategies and management
16.	Dr. Amit Mishra Assistant Professor	Conference	Jun. 29, 2019	UPCAR, Lucknow	Workshop on Soil organic carbon status in U.P.: strategies and management
17.	Dr. J. K. Tiwari, Assistant Professor	Conference	Jun. 29, 2019	Govt. Medical College, Banda	International conference on : Contemporary Social and Health issues Global Perspective
18.	Dr. Dharmendra Kumar Associate Professor	Annual Group Meeting	Aug. 03-5, 2019	BAU, Ranchi	26 <sup>th</sup> Annual Group Meeting of Rapeseed-Mustard Research workers
19.	Dr. Pankaj Kumar Ojha Assistant Professor	National Conference	Aug. 10-11, 2019	BAU, Ranchi	National Conference on Doubling Farmers Income for Sustainable & Harmonious Agriculture (DISHA- 2019)
20.					
21.	Dr. Dheeraj Mishra Assistant Professor	National Conference	Aug. 10-11, 2019	BAU, Ranchi	Doubling Farmers' Income for Sustainable & Harmonious Agriculture
22.	Dr. Surendra Kumar Singh, Associate Professor	Annual Group Meet	Aug. 24-29, 2019	BAU, Ranchi Jharkhand	Annual Group Meet of AICRP Chickpea



S. No.	Name & Designation	Nature of programme	Date	Venue	Name of the Programme
23.	Dr Hitesh Kumar Assistant Professor	Workshop	Aug. 27-29, 2019	Birsa Agricultural University, Ranchi.	Workshop Annual Group Meet of AICRP Chickpea
24.	Dr. Bhanu Prakash Mishra Associate Professor	ToT workshop	Sep. 17-18, 2019	NAARM, Hyderabad	Development of Soft skills for Entrepreneurship among Agri Graduates
25.	Dr. Dheeraj Mishra Assistant Professor	ToT workshop	Sep. 17-18, 2019	NAARM, Hyderabad	Development of Soft skills for Entrepreneurship among Agri Graduates
26.	Dr. Umesh Chandra, Assistant Professor	CAFT	Sep. 21- Oct. 11, 2019	ICAR-IASRI IASRI, New Delhi	Advances in Data Science using R”
27.	Dr. Amit Mishra Assistant Professor	Training	Oct. 01-21, 2019	PAU, Ludhiana	Winter School
28.	Dr. V. K. Singh Associate Professor	Workshop	Oct. 24, 2019	BUAT Banda	Rabi Workshop
29.	Dr. Dharmendra Kumar Associate Professor	Workshop	Oct. 24, 2019	BUAT Banda	Rabi Workshop
30.	Dr. Vivek Singh Assistant Professor	Workshop	Oct. 24, 2019	BUAT Banda	Rabi Workshop
31.	Dr. H.S. Negi Assistant Professor	Workshop	Oct. 24, 2019	BUAT Banda	Rabi Workshop
32.	Dr. Durga Prasad Assistant Professor	Workshop	Oct. 24, 2019	BUAT Banda	Rabi Workshop
33.	Dr. Deo Kumar Assistant Professor	Training	Nov. 08-28, 2019	RARI, Jaipur	Winter School
34.	Dr. B. K. Singh Associate Professor	Conference	Nov. 10-14, 2019	Hyderabad, Telangana	XIX International Plant Protection Congress (IPPC 2019)
35.	Dr. Rakesh Pandey, Associate Professor;	Conference	Nov. 10-14, 2019	Hyderabad, Telangana	XIX International Plant Protection Congress (IPPC 2019)
36.	Dr. A.K Singh, Assistant Professor	Conference	Nov. 10-14, 2019	Hyderabad, Telangana	XIX International Plant Protection Congress (IPPC 2019)
37.	Dr. H. S. Negi Assistant Professor	Training Programme	Nov. 15-16, 2019	ICAR-IVRI, Bareilly	Implementation of Koha-Open Source (LMS) and Creation of User Friendly Interface-OPAC
38.	Dr. Jagannath Pathak, Associate Professor	Conference	Nov. 15-18, 2019	BHU Varanasi	ISSS-National Seminar on “Developments in Soil Science”
39.	Dr. Vijay Sharma, Assistant Professor	National Seminar	Nov. 20-22, 2019	CCS HAU, Hisar	ISEE National Seminar on Socio-Digital Approaches transforming Indian Agriculture
40.	Dr. Mayank Dubey, Assistant Professor	National Seminar	Nov. 20-22, 2019	CCS HAU, Hisar	ISEE National Seminar on Socio-Digital Approaches transforming Indian Agriculture
41.	Dr. G S Panwar, Professor	Seminar	Nov. 20-22, 2019	CCSHAU, Hisar, Haryana	National Seminar on “Socio- Digital Approaches for Transforming Indian Agriculture”
42.	Dr. Narendra Singh, Associate Professor	Seminar	Nov. 20-22, 2019	CCSHAU, Hisar, Haryana	National Seminar on “Socio- Digital Approaches for Transforming Indian Agriculture”
43.	Dr. Dinesh Sah, Associate Professor	Seminar	Nov. 20-22, 2019	CCSHAU, Hisar, Haryana	National Seminar on “Socio- Digital Approaches for Transforming Indian Agriculture”
44.	Dr. S. B. Singh, Assistant Professor	Seminar	Nov. 20-22, 2019	CCSHAU, Hisar, Haryana	National Seminar on “Socio- Digital Approaches for Transforming Indian Agriculture”
45.	Dr. Aniket H Kalhapure Assistant Professor	Seminar	Nov. 20-22, 2019	CCSHAU, Hisar, Haryana	National Seminar on “Socio- Digital Approaches for Transforming Indian Agriculture”
46.	Dr. B. K. Singh Associate Professor	Seminar	Nov. 20-22, 2019	CCSHAU, Hisar, Haryana	ISEE National Seminar on Socio-Digital Approaches for Transforming Indian Agriculture
47.	Dr. M.K. Mishra Assistant Professor	Seminar	Nov. 20-22, 2019	CCSHAU, Hisar, Haryana	ISEE National Seminar on Socio-Digital Approaches for Transforming Indian Agriculture
48.	Dr. Jagannath Pathak, Associate Professor	Seminar	Nov. 20-22, 2019	CCSHAU, Hisar	ISEE national seminar on “Socio-Digital Approaches for Transforming Indian Agriculture
49.	Dr. A. K. Chaubey, Associate Professor	Seminar	Nov. 20-22, 2019	HAU, Hisar	ISEE national seminar on “Socio-Digital Approaches for Transforming Indian Agriculture
50.	Dr. Bhanu Prakash Mishra Associate Professor	Seminar	Nov. 20-22, 2019	HAU, Hisar	ISEE national seminar on “Socio-Digital Approaches for Transforming Indian Agriculture
51.	Dr. B.K. Gupta Assistant Professor	Seminar	Nov. 20-22, 2019	HAU, Hisar	ISEE national seminar on “Socio-Digital Approaches for Transforming Indian Agriculture
52.	Dr. P.K. Ojha Assistant Professor	Conference	Nov. 20-22, 2019	HAU, Hisar	ISEE national seminar on “Socio-Digital Approaches for Transforming Indian Agriculture

S. No.	Name & Designation	Nature of programme	Date	Venue	Name of the Programme
53.	Dr. Umesh Chandra Assistant Professor	National Seminar	Nov. 20-22, 2019	CCS HAU, Hisar	ISEE National Seminar on Socio-Digital Approaches transforming Indian Agriculture
54.	Dr. Gaurav Shukla Assistant Professor	National Seminar	Nov. 20-22, 2019	CCS HAU, Hisar	ISEE National Seminar on Socio-Digital Approaches transforming Indian Agriculture
55.	Dr. Dheeraj Mishra Assistant Professor	National Seminar	Nov. 20-22, 2019	CCSHAU, Hisar	ISEE National Seminar on Socio-Digital Approaches for Transforming Indian Agriculture
56.	Dr. Amit Mishra Assistant Professor	Seminar	Nov. 20-22-2019	CCS -HAU, Hisar, Karnal	ISEE National Seminar on Socio Digital Approaches for transforming Indian Agriculture.
57.	Dr. C. M. Singh	Online-training	Dec. 03, 2019	Organized by IIT, Kanpur	Detection, diagnosis and management of plant diseases
58.	Dr. Durga Prasad Assistant Professor	CAFT Training programme	Dec. 3-23, 2019	GBPUAT, Pantnagar	Crop Diseases & their Management through Manipulation of Soil Health
59.	Dr. H.S. Negi Assistant Professor	CAFT Training programme	Dec. 04- 24, 2019	IARI, New Delhi	Plant disease monitoring for timely management options
60.	Dr. Mayank Dubey Assistant Professor	National Seminar	Dec. 06-07, 2019	MGCGV, Chitrakoot, Satna (MP)	National Seminar on "River Development, Water Resource Conservation and management"
61.	Dr. Bhanu Prakash Mishra Associate Professor	National Workshop	Dec. 16, 2019	The Landmark, Kanpur	Kanpur AROMA Workshop Organised By Fragrance & Flavours Association of India
62.	Dr. B.K. Gupta Assistant Professor	National Workshop	Dec. 16, 2019	The Landmark, Kanpur	Kanpur AROMA Workshop Organised By Fragrance & Flavours Association of India
63.	Dr. Dharmendra Kumar Associate Professor	Seminar	Jan. 10-11, 2020	BUAT Banda	Bundelkhand development: Issues, strategies and way forward
64.	Dr. Vivek Singh Assistant Professor	Seminar	Jan. 10-11, 2020	BUAT Banda	Bundelkhand development: Issues, strategies and way forward
65.	Dr. H.S. Negi Assistant Professor	Seminar	Jan. 10-11, 2020	BUAT Banda	Bundelkhand development: Issues, strategies and way forward
66.	Dr. Durga Prasad Assistant Professor	Seminar	Jan. 10-11, 2020	BUAT Banda	Bundelkhand development: Issues, strategies and way forward
67.	Dr. Pankaj Kumar Ojha Assistant Professor	Seminar	Jan. 10-11, 2020	BUAT Banda	Bundelkhand development: Issues, strategies and way forward
68.	Dr. Dharmendra Kumar Associate Professor	International Conference	Jan. 16-20, 2020	IARI -New Delhi	Phytopathology in achieving UN sustainable development goals
69.	Dr. Dheeraj Mishra Assistant Professor	National Workshop	Feb. 03-05, 2020	Varanasi	Awareness Workshop on Community Radio Station
70.	Dr. Vaishali Gangwar, Assistant Professor	CAFT	Feb. 4-24, 2020	GBPUAT, Pantnagar	Safe and sustainable agriculture for enhancing the factor productivity of crops and cropping systems.
71.	Dr. Mukul Kumar, Professor	International Conference	Feb. 10-12, 2020	Bhopal, MP	International Conference on Pulses as the Climate Smart Crops: Challenges and Opportunities
72.	Dr. A. K. Singh Assistant Professor	Summit	Feb. 14- 16, 2020	MGCGVV, Chitrakoot	Indian Horticulture Summit 2020
73.	Dr. Bhanu Prakash Mishra Associate Professor	National Seminar	Feb. 15-17, 2020	Career Point University, Hamirpur, HP	Doubling Farmers Income by 2022: Challenges, Opportunities and way Forward organized by MOBILIZATION and Career Point University, Hamirpur
74.	Dr. B.K. Gupta Assistant Professor	National Seminar	Feb. 15-17, 2020	Career Point University, Hamirpur, HP	Doubling Farmers Income by 2022: Challenges, Opportunities and way Forward organized by MOBILIZATION and Career Point University, Hamirpur
75.	Dr. Amit Kumar Singh Assistant Professor	National Conference	Feb. 22-23, 2020	Prayagraj	22 <sup>nd</sup> Agricultural Scientists and Farmers' Congress on Post harvest Technology and Management for empowering the rural society and employment generation
76.	Dr. S. B. Singh, Assistant Professor	Conference	Feb. 22-23, 2020	St. John's College, Agra	National conference on Recent Trends and New Frontiers in Biotechnology, Agriculture, Science and Environment
77.	Dr. Dheeraj Mishra Assistant Professor	National Conference	Feb. 22-23, 2020	St. John's College, Agra	Recent Trends and New Frontiers in Biotechnology, Agriculture, Science and Environment
78.	Dr. Surendra Kumar Singh Associate Professor	Seminar	Feb. 25-26, 2020	BUAT, Banda	State level Seminar on Apiculture as Entrepreneurial venture for Doubling Farmers' Income
79.	Dr. B. K. Singh Associate Professor	Seminar	Feb. 25-26, 2020	BUAT, Banda	State level Seminar on Apiculture as Entrepreneurial venture for Doubling Farmers' Income
80.	Dr. Rakesh Pandey, Associate Professor	Seminar	Feb. 25-26, 2020	BUAT, Banda	State level Seminar on Apiculture as Entrepreneurial venture for Doubling Farmers' Income
81.	Dr. Bhanu Prakash Mishra Associate Professor	Seminar	Feb. 25-26, 2020	BUAT, Banda	State level Seminar on Apiculture as Entrepreneurial venture for Doubling Farmers' Income

S. No.	Name & Designation	Nature of programme	Date	Venue	Name of the Programme
82.	Dr. B.K. Gupta Assistant Professor	Seminar	Feb. 25-26, 2020	BUAT, Banda	State level Seminar on Apiculture as Entrepreneurial venture for Doubling Farmers' Income
83.	Dr. M.K. Mishra, Assistant Professor	Seminar	Feb. 25-26, 2020	BUAT, Banda	State level Seminar on Apiculture as Entrepreneurial venture for Doubling Farmers' Income
84.	Dr. H. S. Negi Assistant Professor	Zonal Convention	Feb. 25-26, 2020	BUAT Banda	Climate resilient agriculture for sustainable development of rural economy
85.	Dr. Vivek Singh Assistant Professor	Seminar	Feb. 25-26, 2020	BUAT Banda	Apiculture as entrepreneurial venture for doubling farmers income
86.	Dr. Durga Prasad Assistant Professor	Seminar	Feb. 25-26, 2020	BUAT Banda	Apiculture as entrepreneurial venture for doubling farmers income
87.	Dr. Jagannath Pathak, Associate Professor	Conference	Feb. 25-26, 2020	BUAT, Banda	First Zonal Convention on "Climate resilient agriculture for sustainable development of rural economy"
88.	Dr. Amit Mishra Assistant Professor	State level Seminar	Feb. 25-26, 2020	BUAT, Banda	Apiculture as Entrepreneurial Venture for Doubling Farmer's Income
89.	Dr. Gaurav Shukla Assistant Professor	State Seminar	Feb. 25-26, 2020	BUAT Banda	Apiculture as Entrepreneurial Venture for Doubling Farmer's Income
90.	Dr. Dheeraj Mishra Assistant Professor	State Level Seminar	Feb. 25-26, 2020	BUAT, Banda	State Level Seminar on Apiculture: As an Entrepreneurial Venture for Doubling Farmers' Income
91.	Dr. M.K. Mishra Assistant Professor	Convention	Feb. 25-29, 2020	BUAT, Banda	1 <sup>st</sup> Zonal convention on Climate resilient agriculture for sustainable development of rural economy
92.	Dr. Dharmendra Kumar Associate Professor	National seminar	Feb. 28-29, 2020	BHU Varanasi	Recent advances in fungal diversity, plant microbe interaction and disease management

### College of Horticulture

S. No.	Name & Designation	Nature of Programme	Date	Venue	Theme of the Programme
1	Dr. A.C. Mishra, Associate Professor	Seminar	Jun. 14, 2019	IISR, Lucknow	Seminar on Priorities and strategies to boost farmers' income organized by UPCAR, IISR & UPAAS, Lucknow,
2	Dr. Punam Pandey, Assistant Professor	Refresher Programme	Sep. 15, 2019- Feb. 16, 2020	Gujrat University, Ahmedabad	Refresher Programme in English Language Teaching
3	Dr. R. K. Singh, Associate Professor	Conference	Oct. 11-13, 2019	Banaras Hindu University, Varanasi	International Conference on Sustainable Agriculture Development in Changing Global Scenari
4	Sh. K.S. Tomar, Assistant Professor	Annual Group Meeting	Oct. 18-20, 2019	Dr. YSRHU, Venkataraman nagudem, AP.	27 <sup>th</sup> Annual Group Meeting of AICRP on MAP& B
5	Dr. Vigya Mishra, Assistant Professor	Winter school	Nov. 07-27, 2019	SKRAU, Bikaner, Rajsthan	Hi-tech approaches for production and value addition of horticultural crops in arid and semi-arid regions
6	Dr. Nidhika Thakur, Assistant Professor	Winter school	Nov. 07-27, 2019	SKRAU, Bikaner, Rajsthan	Hi-tech approaches for production and value addition of horticultural crops in arid and semi-arid regions
7	Dr. Sunil Kumar, Assistant Professor	Winter School	Nov. 07-27, 2019	SKRAU, Bikaner, Rajsthan	Hi-tech approaches for production and value addition of horticultural crops in arid and semi-arid regions
8	Dr. S.V. Dwivedi, Professor	National Seminar	Nov. 20-22, 2019	CCS HAU, Hisar	Socio-Digital Approaches for transforming Indian Agriculture, Hissar
9	Dr. Neetu, Assistant Professor	National Seminar	Nov. 20-22, 2019	CCS HAU, Hisar	Socio-Digital Approaches for transforming Indian Agriculture, Hissar
10	Dr. A.C. Mishra, Associate Professor	National Seminar	Nov. 20-22, 2019	CCSHAU, Hisar	National Seminar-2019 on Socio-digital approaches for transforming Indian agriculture organized by Indian Society of Extension Education
11	Dr. Rakesh Kumar, Assistant Professor	CAFT Programme	Nov. 20 - Dec. 10, 2019	UHS, Bagalkot, Karnataka	21 days training under CAFT programme on 'Advances in Conservation and Utilization of PGRs in Major Flowers & Ornamental Plants

S. No.	Name & Designation	Nature of Programme	Date	Venue	Theme of the Programme
12	Dr. Ajay Kumar Singh, Associate Professor	National Conference	Jan. 10-11, 2020	BUAT, Banda	National conference on "Bundelkhand development: Issues, Strategies & Way forward" organized by Department of Agriculture and Planning, Govt. Of Uttar Pradesh
13	Dr. A.C. Mishra, Associate Professor	National Conference	Jan. 10-11, 2020	BUAT, Banda	National Conference on Bundelkhand Development: Issues, Strategies and way forward
14	Dr. A.C. Mishra, Associate Professor	National Conference	Feb. 14-16, 2020	M.G. Chitrakoot Gramodaya University, Chitrakoot	Indian Horticulture Summit-2020 National Conference on Mitigating climatic changes and doubling farmers' income through diversification
15	Dr. R. K. Singh, Associate Professor	Conference	Feb. 22-24, 2020	Banaras Hindu University, Varanasi	5 <sup>th</sup> Uttar Pradesh Agriculture Science Congress- Enhancing Farmers Income and Water Conservation: Opportunities and Challenges
16	Dr. Ajay Kumar Singh, Associate Professor	Advance Training	Mar. 02-06, 2020	DFR, Pune	Collabrative training programme on "Advances in Commercial Floriculture" at ICAR-Directorate of Floricultural Research (DFR), Pune, Maharashtra
17	Dr. R. K. Singh, Associate Professor	Conference	Mar. 23-24, 2019	University of Madras, Guindy Campus, Chennai, Tamil Nadu.	National Seminar cum Interactive workshop on "Noni and Medicinal Plants in Human Wellness" Organized by Center of Advanced Studies in Botany, University of Madras

### College of Forestry

Sl. No.	Name & Designation	Nature of programme	Date	Venue	Name of the Programme
1	Dr. B.S. Rajput, Assistant Professor	Workshop	May 10, 2019	VikasBhawan, Banda	One Day Workshop on 'Convergence'
2	Dr. Abhishek Kalia, Assistant Professor	Workshop	May 10, 2019	VikasBhawan, Banda	One Day Workshop on 'Convergence'
3	Dr. Poonam, Assistant Professor	Winter School	Aug. 06-28, 2019	PAU, Ludhiyana	21 Days winter school on "Biotic and Abiotic stree tolerance in plants under changing climatic conditions"
4	Dr. Abhishek Kaliya, Assistant Professors	Training programme	Sept. 17-18, 2019	NAARM, Hyderabad	Training of Trainers on "Development of Soft Skills & entrepreneurship among Agri graduates"
5	Dr Vinita Bisht, Assistant Professor	National seminar	Nov. 20-22, 2019	CCS HAU, Hisar	Socio-digital approaches for transforming the Indian agriculture
6	Er Sanjay Kumar, Assistant Professor	National seminar	Nov. 20-22, 2019	CCS HAU, Hisar	Socio-digital approaches for transforming the Indian agriculture CCS HAU, Hisar
7	Dr. Dinesh Gupta, Assistant Professor	Training	Nov. 27, 2019	Dte. of Agriculture Uttarakhand	One day training on geo-tagging under RKVY scheme
8	Dr. Chandrakant Tiwari, Assistant Professor	Winter School	Jan. 17-Feb. 06, 2020	ICAR-IARI, New Delhi	21 days winter school on Non-conventional Approaches for Genetic Improvement of Perennial Horticultural Crops
9	Dr. Kaushal Singh, Assistant Professor	International symposium	Feb. 13-14, 2020	BSI, Kolkata	International symposium on Plant Taxonomy
10	Dr. Arbind Kumar Gupta, Assistant Professor	National conference	Feb. 03-05, 2020	ICAR-IISWC RC-Datia, M.P	Poster presentation in National conference on Resource Conservation for soil security and jalshakti: Farmers perspective in Bundelkhand (RCSSJ-2020)
11	Dr. Monika Jain, Assistant Professor	Winter School	Dec. 26, 2019- Jan. 15, 2020	ICAR-IARI, New Delhi	21 days winter school on Harnessing new generation green technologies from plant, microbial and waste sources for sustainable crop, environmental and human health



## Awards and Recognitions

Sl. No.	Name of Award	Awarding Agency	Name of awardee	Year
1.	SERS Fellow	SERS Society, Meerut	Dr. Kamaluddin	2019
2.	Best Oral Presentation award	MGCGV, Chitrakoot, Satna (MP)	Dr. Mayank Dubey	2019
3.	Young Scientist Award-2019	Kalash Research and Welfare Society, Allahabad, UP, India	Dr. Mayank Dubey	2019
4.	Certificate of Appreciation for rendering outstanding service	Banda University of Agriculture & Technology, Banda	Dr. Amit Kumar Singh	2019
5.	Life Fellow	The Entomological Society of India	Dr. S.K. Singh	2019
6.	Excellence in Teaching Award	Dr. Ram Avatar Shiksha Samiti (DRASS)	Dr. Rakesh Pandey	2019
7.	Life Fellow	The Entomological Society of India	Dr. Rakesh Pandey	2019
8.	Life Fellow	The Entomological Society of India	Dr. M.K. Mishra	2019
9.	ISEE Appreciation Award	Indian Society of Extension Education, New Delhi	Dr. Dheeraj Mishra	2019
10.	ISEE Appreciation Award	Indian Society of Extension Education, New Delhi	Dr. B.K. Gupta	2019
11.	ISEE Appreciation Award	Indian Society of Extension Education, New Delhi	Dr. P. K. Ojha	2019
12.	ISEE Appreciation Award	Indian Society of Extension Education, New Delhi	Dr. Gaurav Shukla	2019
13.	Young Scientist award	Tribhuvan University, Kathmandu Nepal	Dr. Neetu	2019
14.	Young Horticulturist Award	Agro Environmental Development Society	Dr. Shweta Soni	2019
15.	Excellence in Research Award	“Dr. Ram Awtar Shiksha Samiti (DRASS), Lucknow	Dr. R. K. Singh	2019
16.	Young Scientist-2019	Royal Association for Science-led Socio-Culture Advancement (RASSA), New Delhi	Dr. R. K. Singh	2019
17.	Earth Heroes Award	The Royal Bank of Scotland	Dr. Aishwarya Maheshwari	2019
18.	Young scientist award	Society of Human Resource & Innovation, Agra (UP)	Dr. Aniket H. Kalhapure	2019
19.	Excellence in Teaching Award	Society of Human Resource & Innovation, Agra (UP)	Dr. Arun Kumar	2019
20.	Best oral presentation award	UPAAS, 5th Uttar Pradesh Agricultural Science Congress	Dr. Hitesh Kumar	2020
21.	Appreciation certificate for outstanding services rendered in the University for 2019-20.	BUAT, Banda	Dr. Mukul Kumar	2020
22.	Young Scientist Associate Award-2020	Bioved Research Institute of Agriculture Technology and Science (BRAITS), Prayagraj	Dr. Amit Kumar Singh	2020
23.	Award for Excellence in Research	8 <sup>th</sup> Academic Brilliance Award 2020 by Education Expo TV, Noida Uttar Pradesh.	Dr. Amit Kumar Singh	2020
24.	Best teacher award	Academy for Environment and Life Sciences, Agra	Dr. S. B. Singh	2020
25.	Certificate of Appreciation for rendering outstanding service	Banda University of Agriculture & Technology, Banda	Dr. Aniket H. Kalhapure	2020
26.	Best paper Award	Society for horticultural research and development	Dr. A. K. Singh	2020
27.	Best Teacher Award-2020	Academy for Environment and Life Sciences, Agra U.P.(India)	Dr. Deo Kumar	2020
28.	Certificate of Appreciation	Banda University of Agriculture & Technology, Banda	Dr. Amit Mishra	2020
29.	Best Oral Presentation	Indian Phytopathological Society	Dr. Dharmendra Kumar	2020
30.	Young Plant Pathologist	Academy for Environment and Life Sciences	Dr. Vivek Singh	2020
31.	Certificate of Appreciation-2020 for Outstanding Services rendered to University	Banda University of Agriculture & Technology, Banda	Dr. A.C. Mishra	2020
32.	Certificate of appreciation for outstanding services rendered in the University	Banda University of Agriculture & Technology, Banda	Dr. Nidhika Thakur	2020
33.	Certificate of appreciation for outstanding services rendered in the University	Banda University of Agriculture & Technology, Banda	Dr. Vigya Mishra	2020
34.	Young Scientist Associate Award 2020	Bioved Research Institute of Agriculture, Technology and Science, Prayagraj	Dr. R. K. Singh	2020

## Visits of Distinguished Dignitaries

Sl. No.	Name	Designation	Date of visit
1.	Smt. Anandiben Patel	Hon'ble Governor, Uttar Pradesh	October 03, 2019
2.	Shri Yogi Adityanath	Hon'ble Chief Minister, Uttar Pradesh	December 08, 2019
3.	Shri Surya Pratap Shahi	Hon'ble Minister, Agriculture, Agriculture Education & Research, Govt. of Uttar Pradesh	January 10-11, 2020
4.	Shri Lakhan Singh Rajput	Hon'ble State Minister, Agriculture, Agriculture Education & Research, Govt. of Uttar Pradesh	September 17, 2019
5.	Shri Chandrika Prasad Upadhyay	Hon'ble State Minister, PWD, Govt. of Uttar Pradesh	November 08, 2019
6.	Dr. Mahendra Singh Ji	Hon'ble minister of Jal Sakti, Govt. of U.P.	January 10-11, 2020
7.	Smt. Kamal Rani Varun	Hon'ble Minister of Technology education, Govt. of U.P.	January 10-11, 2020
8.	Shri Sriram Chauhan	Minister Food and processing, Govt. of U.P.	January 10-11, 2020
9.	Shri G.S. Dharmath	State Minister Social welfare, Govt. of U.P.	January 10-11, 2020
10.	Dr. A.K. Singh	Hon'ble Vice Chancellor, BAU, Sabour	November 30, 2019
11.	Dr. Arvind Kumar	Hon'ble Vice Chancellor, RLBCAU, Jhansi	February 26, 2020
12.	DR. G.K. Singh	Vice Chancellor Deendayal Veterinary University, Mathura	January 10-11, 2020
13.	Dr. S. Soloman	Vice Chancellor, CSAUAT, Kanpur	January 10-11, 2020
14.	Dr. Bijendra Singh	Vice Chancellor, NDUAT, Ayodhya	January 10-11, 2020
15.	Dr. A.K. Singh	DDG (Extension), ICAR, New Delhi	April 13, 2019
16.	Dr. Bijendra Singh	DG, UPCAR	May 21, 2019
17.	Dr. Mangala Rai	Former DG, ICAR	January 10, 2020
18.	Dr. Panjab Singh	Former DG, ICAR	October 03, 2019
19.	Dr. Gaya Prasad	Ex-Vice Chancellor, SVPUAT, Meerut	November 13-14, 2019
20.	Dr. Ram Chandra	Ex-DDG, ICAR, New Delhi	November 13-14, 2019
21.	Dr. Mathura Rai	Ex- Director, ICAR-IIVR, Varanasi	November 13-14, 2019
22.	Dr. O.P. Singh	Ex- Director Extension, SVPUAT, Meerut	November 13-14, 2019
23.	Dr. Y.P.S. Dabas	Ex-Director Extension, GBPUAT, Pantnagar	November 13-14, 2019
24.	Dr. Dhoom Singh	Director Extension, CSAUAT, Kanpur	April 13, 2019
25.	Dr. Ramesh Chand	Director, IAS, BHU, Varanasi	December 31, 2019
26.	Shri Arvind Kumar	Director, IRRI, Varanasi	January 10-11, 2020
27.	Shri KV Raju	Advisor, Govt. of Uttar Pradesh	November 21, 2019
28.	Shri Gyan Singh	Secretary, UPCAR	May 21, 2019
29.	Dr. Sadhana Pandey	Principle Scientist, ICAR-ATARI, Kanpur	November 13-14, 2019
30.	Dr. S.R.K. Singh	Principle Scientist, ICAR-ATARI, Jabalpur	November 13-14, 2019
31.	Dr. S.K. Singh	Principle Scientist, ICAR-NBFGR, Lucknow	August 31, 2019
32.	Dr. H.P. Singh	Professor, BHU, Varanasi	February 26, 2020
33.	Dr. H.P. Singh	Registrar, CSAUAT, Kanpur	February 26, 2020
34.	Kunwar Manvendra Singh	Chairman, Bundelkhand Development Board	January 10-11, 2020
35.	Shri A.P. Patel	Vice Chairman, Bundelkhand Development Board	January 10-11, 2020
36.	Shri Raja Bundela	Vice Chairman, Govt. of U.P, Bundelkhand Development Board	January 10-11, 2020
37.	Shri Kumar Kamlesh	Additional Chief Secretary, Deptt. of Planning.	January 10-11, 2020
38.	Shri K.V. Raju	Economic Advisor, Hon'ble CM	January 10-11, 2020
39.	Shri R.K. Patel	M.P., Banda, Chitrakoot	January 10-11, 2020
40.	Shri T. Venkatesh	PS, Jal Sakti, Govt. of Uttar Pradesh	January 10-11, 2020
41.	Shri Amit Mohan Prasad	PS, Agriculture, Govt. of Uttar Pradesh	January 10-11, 2020
42.	Dr. Devesh Chaturvedi	PS, Health, Govt. of Uttar Pradesh	January 10-11, 2020
43.	Shri Sudhir Garg	PS, Horticulture, Govt. of Uttar Pradesh	January 10-11, 2020
44.	Shri B.L. Meena	PS, Animal, Govt. of Uttar Pradesh	January 10-11, 2020
45.	Shri Manoj Kumar Singh	PS, Urban Development, Govt. of Uttar Pradesh	January 10-11, 2020
46.	Shri Navneet Sahgal	PS, MSME & Export, Govt. of Uttar Pradesh	January 10-11, 2020
47.	Shri Jitendra Kumar	PS, Torism & Culture, Govt. of Uttar Pradesh	January 10-11, 2020



# अमर उजाल

अमर उजाला 9

कानपुर, शुक्रवार, 7 नवंबर 2014

## कृषि विश्वविद्यालय का एकीकृतेशन



कृषि विश्वविद्यालय के महामन्त्री अरविण्ड कुमार सिंह (बाएं) का कानपुर में एकीकृतेशन के दौरान विद्यार्थियों के साथ संवाद।

कृषि विश्वविद्यालय के महामन्त्री अरविण्ड कुमार सिंह (बाएं) का कानपुर में एकीकृतेशन के दौरान विद्यार्थियों के साथ संवाद।

# राष्ट्रीय सहारा

## कृषि के विकास के लिए दक्षता के साथ जानकारी जरूरी : डॉ. चन्द्रिका



कृषि विकास के लिए दक्षता के साथ जानकारी जरूरी है। डॉ. चन्द्रिका ने कहा कि किसानों को नए तकनीकी उपकरणों और विधियों के बारे में सही जानकारी देना जरूरी है।

डॉ. चन्द्रिका ने कहा कि किसानों को नए तकनीकी उपकरणों और विधियों के बारे में सही जानकारी देना जरूरी है।

# राष्ट्रीय सहारा

## आमदनी का अच्छा साधन है मशहूम उत्कृष्ट व्यवसाय



आमदनी का अच्छा साधन है मशहूम उत्कृष्ट व्यवसाय। यह व्यवसाय किसानों को अच्छी आमदनी देता है और उनके जीवन को बेहतर बनाता है।

# the pioneer

## Campaign to promote organic farming in seven districts of Bundelkhand



A campaign to promote organic farming is being launched in seven districts of Bundelkhand. The initiative aims to help farmers improve their yields and reduce the use of chemical fertilizers.

The campaign will involve providing farmers with training and resources to help them transition to organic farming practices.

# the pioneer

## Scientists visit BUAT to assess research work on mustard



A team of scientists from the International Rice Research Institute (IRRI) visited BUAT to assess the progress of research work on mustard. They discussed the challenges faced by farmers and the potential of mustard as a cash crop.

The scientists also conducted field visits to see the mustard crops growing in the field. They found that the crops were healthy and growing well.

# बुंदेली किसानों की आय बढ़ाएगा सीड हब परिषदीय बच्चों को मिला आनंदी बेन का दुलार

बुंदेली किसानों की आय बढ़ाएगा सीड हब परिषदीय बच्चों को मिला आनंदी बेन का दुलार। यह पहल किसानों को बेहतर उत्पादन के लिए सहायता देगी और बच्चों को शिक्षा के माध्यम से बेहतर जीवन देगी।

कृषि विश्वविद्यालय के महामन्त्री अरविण्ड कुमार सिंह ने कहा कि यह पहल किसानों की आय बढ़ाएगी और बच्चों को शिक्षा के माध्यम से बेहतर जीवन देगी।



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# the pioneer

## IFS model of agriculture can prove to be a boon: Singh



The IFS model of agriculture can prove to be a boon for farmers. It involves providing farmers with training and resources to help them improve their yields and reduce the use of chemical fertilizers.

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