



Getting back to life.....

College of Agriculture reopens for final year UG students

Contributed by: *Niharika Arora,*
B.Sc Agriculture, IIIrd Year



Facing the strenuous situation of the pandemic was an extraordinary circumstance, but ultimately the final year students of College of Agriculture resumed their campus life from January 20, 2021 onwards. The monotony came to an end and learning began through offline mode. The comeback came to reality because of the diligent efforts of Dean, College of Agriculture and to celebrate the comeback, a pleasing and cheerful get-together was organised with the theme -'Back to Life' on January 26, 2021. Currently, the final year students are undergoing the Rural Agriculture Work Experience (RAWE) of which the initial part was conducted online, and now the remaining components of RAWE would be undertaken in offline mode. The Plant Clinic and Industrial Visit will be organized wherein the students will be visiting various research centres including Agroforestry Research Centre, Horticulture Research Centre, Crop Research Centre and Model Floriculture Research Centre and different nearby industries including Parle Biscuits Pvt. Ltd., Dabur India Ltd., Century Pulp and Paper, KLA Foods India Ltd., etc.

The final year students shared their experiences and verbalised about their breakthroughs amidst the pandemic and how the news of college reopening was a matter of glee to them. Ms. Manisha Chamoli while expressing her joy said, "Returning back to campus has broken the monotony of past 10 months and finally getting to visit various research centres and industries under RAWE has put back zeal in our lives". Ms. Chitranshi Yadav reflected that "Stepping back to Pantnagar in pandemic situation was welcomed with ambiguous mind (to be honest). Yet once inside the premises the charismatic energy makes you feel alleviated and unequivocally revitalising after being locked up for almost 10 months. We started with small get together on Republic Day evening which made everyone feel elated and coming back to Pantnagar being worth. Special thanks to our Dean Sir and professors who were so thoughtful and innovative". Mr. Sarthak Kothiyal also reverberated the excitement and said, "A silver lining in the sky full of dark clouds appeared in the life of the final year students with an email stating the reopening of the university in the offline mode. The reaction was somewhat mixed with the uneasy feeling to leave our comfort zones of almost an year and finally being able to reunite with friends. But everything fell into place with the welcoming aura of Pantnagar".



"If agriculture goes wrong, nothing else will have a chance to go right."

- M.S. Swaminathan

241st meeting of BOFA held, illustrious faculty members felicitated

Contributed by: Pooja Kaira
B.Sc Agriculture, IIIrd Year



Every year on January 1, the meeting of Board of Faculty of Agriculture (BOFA) is organized by College of Agriculture, apart from other BOFA meetings round the year. Continuing with the tradition, the 241st meeting of BOFA was held on January 1, 2021 wherein the achievements and progress of the college in last one year were discussed, the future agenda was declared and the meritorious faculty members were felicitated. The selection criteria for identifying the best performing faculty members included research publications above 6 NAAS rating, research project above Rs.25 lakh, release of new variety, germplasm registration, patent received and other academic award/honour.

The BOFA meeting witnessed the presence of honourable Vice-Chancellor Dr. Tej Partap, Registrar Dr. J. Kumar, Dean Agriculture Dr. S.K. Kashyap, Dean Post Graduate Studies Dr. K.P. Raverkar and all faculty members of College of Agriculture. During the meeting, the confirmation of the proceedings of 240th

meeting was executed and the BOFA Secretary recalled all agenda items and informed about receiving no comments. Thereafter, the faculty members were nominated to board of faculty of other colleges of the University and members of College Disciplinary Committee were also nominated.

During the meeting, Dr. Tej Partap remarked that in last one year College of Agriculture has shown tremendous development and he has high hopes from the faculty members and students of the college as together they all have the potential to make the college emerge as a leading centre of agriculture education. Further, Dr. S.K. Kashyap congratulated all the faculty members for their tremendous efforts round the year in leading the teaching and research activities despite numerous hurdles posed by the pandemic. He encouraged all to continue with this spirit and declared the agenda of the college for the coming year.



The College of Agriculture releases Annual Progress Report 2020



Contributed by: Simran Pundir
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With the arrival of a new decade, amidst all the complexities in the past year, College of Agriculture for the very first time published a compilation of its yearly activities and achievements called the *Annual Progress Report 2020 - The efforts, output and outcomes*. Released on January 1, 2021 in the meeting of Board of Faculty of Agriculture (BOFA), the event witnessed the presence of honourable Vice-Chancellor Dr. Tej Partap, Dean Agriculture Dr. S.K. Kashyap, Head of Departments and all the faculty members of the college. The report showcases the expedition of all the efforts taken during the past year - how the college went towards academic development,

infrastructure development and research related achievements despite the difficulties due to pandemic.

The report also contains the experience of faculty members regarding online teaching-learning, and how new initiatives of transformation of regular classrooms into digital classrooms, launch of online certificate courses, preparation of lab manuals and online webinars and trainings were led with the collective effort of all. The conscientious efforts of all the college faculty members working into 11 different departments of the college was also presented. Each department gets its mention in the report with their vision, mission, research projects running, salient achievements of the department, webinars conducted and other accomplishments.

Expressing the delight on this occasion Dr. S.K. Kashyap, Dean, College of Agriculture remarked "Year 2020 was challenging for the college. But the college fraternity translated the challenge into an opportunity, with mutual conviction and handholding. This Annual Report is a saga of that cooperative effort done by the college to showcase that we converted 2020 into an opportunity".

Thus, this report is a promise for the stakeholders of the college. It is to put the efforts made, impact created and the forthcoming outcomes into black and white, to get it documented. It is to put capabilities of the faculty members, those who are there across into the college into public domain so that the world, the people can come up to understand that the College of Agriculture is committed for greater a cause.

College of Agriculture collaborates with IIT Ropar for National Mission on Interdisciplinary Cyber-Physical Systems

Contributed by: **Anureet Kaur Sandhu**
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The College of Agriculture collaborates with Indian Institute of Technology, Ropar (IIT-Ropar) to accomplish the targets of National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS) of Department of Science and Technology, Govt. of India. This National Mission is being executed through Technology Innovation Hubs (TIHs) running in different academic institutes of the country of which one TIH is established in IIT-Ropar and the technology vertical for the same is Technologies for Agriculture and Water. Dr. Naresh Rakha who is working as Senior Scientific Officer in the Technology Innovation Hub - Agriculture and Water Technology Development Hub, is responsible for identification and development of related technologies for ultimate benefits of farmers. A brainstorming meeting was held on January 29, 2021 wherein Dr. Rakha, Dr. S.K. Kashyap, Dean, College of Agriculture and faculty members of the college participated.

This mega project on cyber physical systems encompasses technology areas of cybernetics, mechatronics, design and

embedded systems, internet of things, big data, artificial intelligence and many more and its applications in the area of agriculture. During the meeting, an extensive discussion was held on existing challenges of agriculture and how through this project suitable technologies could be developed. It was decided that the faculty members of the college would be providing technical scientific inputs related to agriculture to Dr. Rakha and his team and ground level research would be done to atleast generate suitable technology in major identified problem areas.



Training on Project Formulation, Monitoring and Evaluation: Steps for effective implementation of projects



Contributed by: **Prachi Nagarkoti**
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Project monitoring plays vital role in decision making processes and help to foresee potential risks which when left unaddressed, could derail any project. To acquaint students about what a project execution actually needs, the Department of Agricultural Economics of College of Agriculture, Pantnagar organized a three days online training programme focusing on project formulation, monitoring and evaluation for the postgraduate students of the college. Training was scheduled from January 21-23, 2021 on MS Teams platform and was sponsored by Indian Council of Agricultural Research, New Delhi under the SC sub-component plan. The topic was divided under three headings as Project Identification Process and Formulation of Bankable Projects for day one, Project Implementation and Appraisal for second day, and Project Monitoring and Evaluation

for the last day of the training.

Professionals of the training included Dr. Kriti Bardhan Gupta, Associate Professor and an eminent expert of Food and Agribusiness Management, Indian Institute of Management, Lucknow, esteemed faculty members of the college, Dr. Virendra Singh, Professor, Department of Agricultural Economics, Dr. Ajay Kumar Tripathi, Assistant Professor, Department of Agricultural Economics and Dr. Shweta Chaudhary, Assistant Professor, Department of Agricultural Economics. Training was coordinated by determined faculty members of the department, Dr. Virendra Singh and co-coordinated by Dr. Shweta Chaudhary.

The complete training was designed to help students understand various aspects of project like project classification, characteristics, and different types of tools used in project identification, dimensions, classification of projects, various attributes of project, techniques of monitoring, evaluation and presented a holistic view of how a project needs to be executed.

On successful completion of the training programme, Dr. M.L. Sharma, Professor and Head of the Department of Agricultural Economics stated that the training was meant to incorporate necessary idea of project identification among students which will help them in generation of new ideas about entrepreneurial projects. Overall the training was planned in accordance with the current scenario of skill development of the students as it will help them to implement intended projects more effectively.

Three days online training programme organized on agromet advisory services

Contributed by: **Anubhav Singh Raj**
B.Sc Agriculture, IIIrd Year



In modern agriculture where ecology and economy are on equal terms, productivity relies mostly on weather conditions. With careful planning and research in fields, agrometeorology helps farmers to meet the world demand for food and other agricultural products. In this regard, a three days online training programme was held under the ICAR SC sub-component plan from January 25-27, 2021. The topic of the training session was *Novel Application of Weather Forecasting and Agromet Advisory in Agriculture*.

Dr. Prabhjyot Kaur Sidhu, Head of Department, Climate Change and Agriculture Meteorology, Punjab Agricultural University, Ludhiana was the keynote speaker for the inaugural session of the training. The other experts of the training were Dr. A.V.M Subba Rao, Senior Scientist (Agromet), ICAR-Central Research Institute for Dryland Agriculture, Hyderabad; Dr. K.K Singh, Head, Agromet Advisory Services, India Meteorological Department, New Delhi; Dr. Ankita Jha, Scientist, ICAR-Indian Institute of Water Management, Bhubaneswar; and two scientists from Department of Agrometeorology, College of Agriculture, Pantnagar i.e. Dr. Ravi Kiran, Associate Professor and Dr. Rajeev Ranjan, Assistant Professor.

The focus areas of the training programme were microclimate modification for field crops, crop simulation modeling and its application in agriculture, basics of climate and their

classification, evapotranspiration: basics and application, agromet advisory services: challenges and opportunities, and solar radiation and their interception by plant. The discussions and deliberations on these issues helped the participants in understanding various concepts related to agrometeorology. Some of the other major highlights of the training included importance of microclimate in field crops, crop simulation models application, climate elements, climate zones, climatic control, factors affecting evapotranspiration and types, forecast application for risk management in agriculture, agro advisory services to farmers, crop architecture for efficient use of radiation, and duration of light in various types of plants. Overall these three days of online training programme helped the students in building their conceptual understanding as well as application areas of agrometeorology.



Role of agrometeorology in boosting agricultural production

Contributed by: **Gautam Harbola**
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The Department of Agrometeorology of College of Agriculture, Pantnagar organized a three days online training programme for undergraduate students of the college. The training was organized under the series of trainings sponsored by ICAR SC sub-component plan which is currently operational in the college. Under this plan, funding for all the workshops and training programmes is given by ICAR in order to provide learning opportunities for students in different areas of agriculture and technological advancements. Into this three days

online training programme organized from January 21-23, 2021, the role of agrometeorology in boosting agricultural production was discussed. The training mainly focused on five fundamental issues, namely Earth and its atmosphere, an overview of agrometeorological instruments, weather hazards and climate change scenario, atmospheric pressure and winds, and role of geospatial technology in precision farming. The training was led by faculty members of Department of Agrometeorology and included Dr. R.K. Singh, Professor and Head, Dr. Ravi Kiran, Associate Professor, and Dr. Rajeev Ranjan, Assistant Professor. This three days training programme indeed helped the participants strengthen their basic concepts of agrometeorology and relate its significance with agricultural production and productivity.



Dept. of Agricultural Economics initiates expert lecture series

Dr. Raman Srivastava alumnus of College and DG in Canada invited as expert

Contributed by: **Vikash Kumar**
B.Sc Agriculture, IIIrd Year



The Department of Agricultural Economics of College of Agriculture, Pantnagar has initiated an expert lecture series wherein agricultural experts from renowned national and international institutes and professional organizations would be invited to share their insights and experiences with the college students. The first expert of this lecture series was Dr. Raman Srivastava, a distinguished alumnus of College of Agriculture, Pantnagar and the lecture was entitled as *My Professional Journey, Lessons Learnt and Opportunities in Canada: An Open House Discussion*. Dr. Srivastava is currently serving as the Director General, Federal Department of National Defence, Canada.

The professional journey of Dr. Srivastava is indeed praiseworthy and inspirational. He joined the Federal Public Service of Canada in January 1997. Over the past 24 years, he has had a unique privilege to serve eight federal departments and agencies. He began his career as Policy Economist with Agriculture and Agri-Food Canada, and subsequently worked in various capacities at the Department of Foreign Affairs and International Trade Canada (Trade Commissioner), Department of Health (Manager and then Director of Policy), Treasury Board Secretariat of Canada (Director), Canadian Food Inspection

Agency (Director and then Executive Director), Department of Citizenship and Immigration Canada (Director General), Public Service Commission of Canada (Director General), before joining the Department of National Defence of Canada in October 2016 as Director General of Evaluation. He has also received President's Leadership Excellence Award at the Canadian Food Inspection Agency, and the most prestigious Queen's Diamond Jubilee Medal recognizing his services to the Public Service of Canada.



Dr. Raman Srivastava
Director General
Federal Department of
National Defence, Canada

During his talk, Dr. Srivastava said that one does not and should not have monopoly on good ideas, one must involve others for broader impact creation. He attributes his excellence in professional life to the values of life he nurtured in him while pursuing his agriculture degree from Pantnagar. During the session, he also threw light on his Pantnagar journey and told the current generation of Pantnagar students to stretch out and work hard. He said that only when we make efforts to go beyond our limits, we realize our true potential. The entire session was much enjoyed by all the participants as they could connect and feel the inspiration behind Dr. Srivastava's utterances.

Training held on applications of remote sensing in agriculture

Contributed by: **Geetika Joshi**
B.Sc Agriculture, IIIrd Year



The College of Agriculture in collaboration with IDP-NAHEP, Pantnagar organized a two days online training programme on *Advances in Remote Sensing and Machine Learning Techniques for Agriculture Applications* on January 18-19, 2021. The applications of remote sensing and machine learning are emerging rapidly in agriculture and have huge potential in accelerating the growth of agribusiness as well. The two days training was mentored by Prof. Arnon Karnieli, Director, Remote Sensing Lab, Jacob Blaustein Institutes for Desert Research, Ben Gurion University, Israel; Dr. Arun Pattathal Vijaykumar, Post Doc Researcher, Jacob Blaustein Institutes for Desert Research, Ben Gurion University, Israel, and Dr. Dharmesh Verma, Former Global Head Technical, RNZ Institution, Dubai.

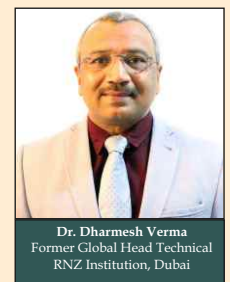
The training was conducted with a focus on applied advanced remote sensing techniques in agriculture and role of machine learning in smart farming. The training mentors told that remote sensing and machine learning techniques have become very essential in agriculture in the present context, where along with



Prof. Arnon Karnieli
Director, Remote Sensing Lab
Ben Gurion University, Israel



Dr. Arun Pattathal Vijaykumar
Post Doc Researcher
Ben Gurion University, Israel



Dr. Dharmesh Verma
Former Global Head Technical
RNZ Institution, Dubai

food sufficiency surplus too is a target. These techniques provide us with various information on weather, soil conditions, crop diseases, etc. The data is further analyzed to draw results and foresee the conditions according to which preventive measures and management can be practiced. Hence the analyzed soil, crop, weather conditions can be used to predict yield, disease infestation, quality, resource availability, etc. within a span in which the measures can be taken to maximize the profits or minimize the losses. The training was coordinated by Dr. A.S. Nain, Director Research and Professor, Department of Agrometeorology, College of Agriculture, Pantnagar. The training programme served as an intervention to make the students aware about latest technological advancements in field of agriculture.

Veteran plant breeder from Texas A&M University, USA interacted with Pantnagar fraternity

Contributed by: **Vanshika Gupta**
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The College of Agriculture is association with IDP-NAHEP, Pantnagar is pooling experts of agriculture and allied sciences from across the world in order to have workshops, interactive sessions, trainings for the student community of Pantnagar. In this series, one very revered academican Dr. B.B. Singh, Visiting Professor, Department of Soil and Crop Science, Borlaug Institute of International Agriculture, Texas A&M University, USA took two online interactive sessions with the students.

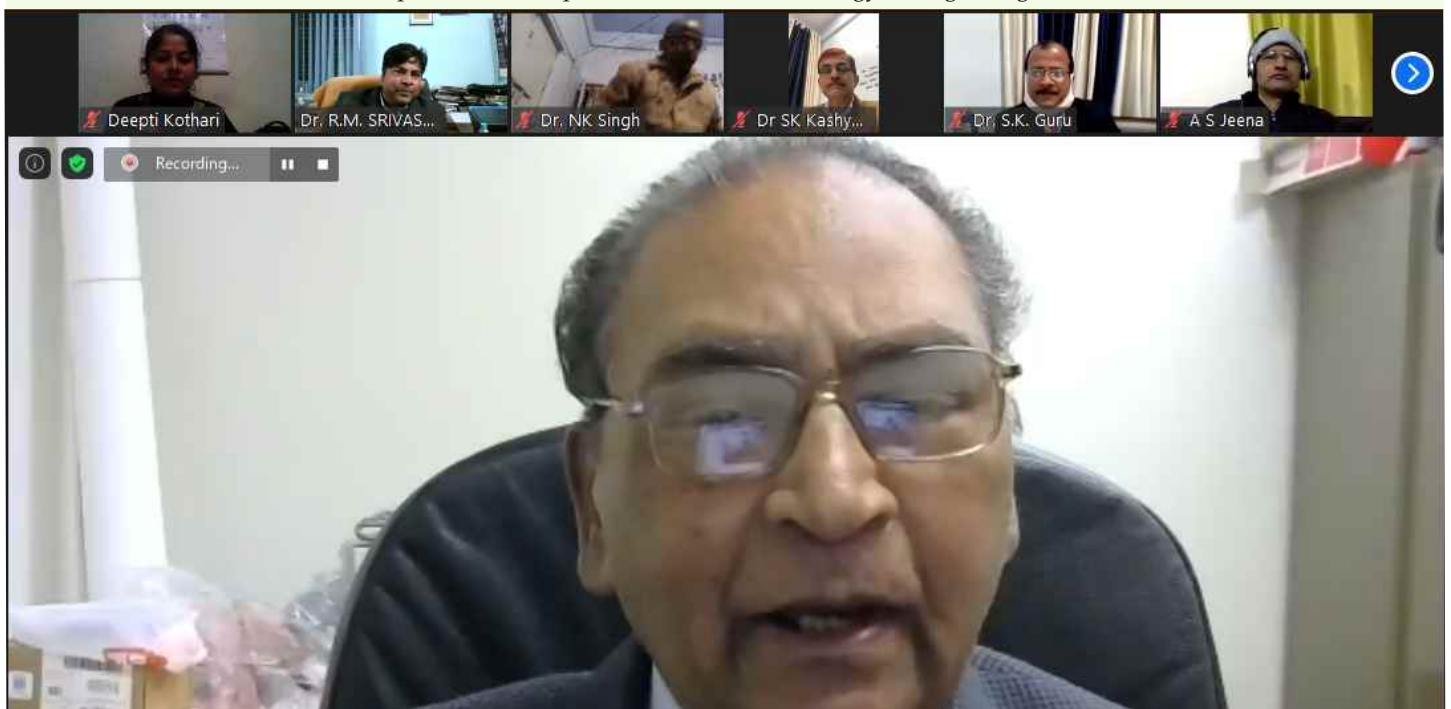
The first interactive session was held on January 15, 2021 on the topic *Breeding for Resistance to Biotic and Abiotic Stresses and Development of Bt-Cowpea*. During the session, Dr. Singh gave a brief account on the importance of cowpea as a major cereal in the African and American context. He added that cowpea is one of the rich sources of protein and other nutrients; therefore it's important for breeders to understand the disease and pathogens that infest the plant and cause a major damage to the crop yield. He gave detailed account of the work done by his team at Texas which even yielded them lot of applauds and international recognitions, the experiments they worked upon by applying strip cropping method, and use of farmers participatory evaluation based cropping system for providing sustainable alternatives for production of cowpea. He added that the genetic engineering which yielded the Bt crops have also significantly contributed in ensuring the food security and Bt-Cowpea is an exemplary case of it. He also gave an account of why and how Bt-Crops came into existence and the misconceptions that exists amongst masses regarding the acceptability of Bt-Crops. Dr. Singh added that being into agriculture we need to understand the issues and concerns of farmers and then work upon to solve the problem.

The second interactive session was organized on January 22, 2021 on the topic *Sustained Food Security in India: Need for Multi Institutional Collaboration*. Land is becoming a diminishing resource for agriculture due to the increasing pressure on land for food with passing time, and if the conditions remain same this will definitely lead to certain uncontrolled scenarios. To resolve this, we need to understand the concept of sustainability and sustainable food security in India. During the lecture, Dr. Singh focused on the concept of food security, the need to bring back seed diversity, and the need to shift farmers from local varieties to genetically uniform high yielding breeds. He also talked about the multi-institutional collaborations for improving food security and need to focus on worldwide food chain industries to cope up with the demands and expectation as well as limited resource in our country. Dr. Singh explained that the production issue can be addressed by applying advanced breeding techniques like gene editing and biotechnology, good management practices and diversification of agriculture. He also explained that collaborative efforts like strengthening linkages, developing partnerships, integrated teaching-research and extension endeavours can help to overcome the challenges of sustained food security.

The interactive sessions witnessed not only participation of the students but also faculty members including Dr. Salil Tiwari, Professor and Head, Dept. of Genetics and Plant Breeding, Dr. J.P. Jaiswal, Professor, Genetics and Plant Breeding, and Dr. N.K. Singh, Professor, Genetics and Plant Breeding. The sessions were coordinated by Dr. R.M. Srivastava, Professor, Department of Entomology, College of Agriculture.



Dr. B.B. Singh



Online guest lectures organized by Department of Agronomy

Contributed by: *Samiksha Yadav*
B.Sc Agriculture, IIIrd Year



The Department of Agronomy of College of Agriculture, Pantnagar organized two online guest lectures on January 6-7, 2021. On day one, the guest lecture was held on the topic *Advances in Soil, Crop and Weed Management* and was delivered by Dr. Asim Biswas, Associate Professor, School of Environmental Sciences, University of Guelph, Ontario (Canada). The focus area of the lecture was soil sensing technology and advance techniques for sustainable soil management.

The informative lecture started with the topic, importance of soil and challenges in the field management. He talked about various factors that affect the crop and crop production. Dr. Biswas also pointed out defects in the traditional soil measurement and mapping system. He gave the concept of '4M'- Measurement, Modelling, Mapping, and Management to overcome various drawbacks in the traditional systems. He said that the main focus should be on improving crop production while maintaining environmental health. He advised to use sensors like aerial soil sensors and proximal soil sensors for soil characterization and electric and electromagnetic sensors for large agriculture land. The main purpose of the sensors is to measure values accurately. He said eyes can make mistakes during detecting the soil colour but a sensor (soil spectroscope) cannot. A farmer can know about moisture, soil content, and nitrogen in the soil accurately with the help of various sensors. He even mentioned about technologies like MIR spectrometry, gamma ray sensing, electrical conductivity map etc. The participants really appreciated the technology and techniques described by Dr. Asim Biswas. The session was further vibrant with the discussions among the course instructors, resource

person and the participants.

On the second day, the topic of guest lecture was *Digital Soil Mapping and Recent Initiatives*. Mr. Daniel Saurette, Land



Daniel Saurette
Land Resource Specialist
OMAFRA, Canada



Dr. Asim Biswas
Associate Professor
Univ. of Guelph, Canada

Resource Specialist, Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA), Canada, was the lead speaker. Mr. Saurette introduced the lecture by giving brief information on drivers for digital soil mapping in Ontario. He talked about the various pressures on Ontario's soil. Thereafter, he said that the current scenario in digital soil mapping includes creating datasets with updated regional soil information, transferring soil knowledge and technology at local levels, and developing the data for sustainable soil management and land management. Dr. Saurette then added digital soil mapping theories and it's environmental covariates in his lecture to make it more explicit to the audience. He further included the sample designs in the lecture to make it more informative. As exemplary cases, he discussed about the Hipple Farm and Smeltzer Farm and various initiatives related to soil mapping taken in these farms. The session lend wings to all the participants to advance in soil, crop and weed management when Mr. Saurette deliberated about machine learning, Ottawa regional soil survey and soil moisture prediction techniques.

Overall the sessions were extremely interesting and helped in creating a wider perspective for students towards new developments in the field of agriculture. The two guest lectures were coordinated by Dr V.C. Dhyani, Associate Professor and Dr. Amit Kesarwani, Assistant Professor both from Department of Agronomy of College of Agriculture.



If the learner didn't learn, the teacher didn't teach

Understanding pedagogical concerns in agricultural education

*Contributed by: Neeraj Tewari
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Agricultural education is a significant entity of the entire agriculture framework and system in the Indian context. However, its true potential is yet to be unleashed for which the teaching aspects and especially the pedagogical aspects need to be strengthened. Recently, Dr. S.K. Kashyap, Dean, College of Agriculture, Pantnagar was invited for a talk in the Agricultural Education Series 2021 organized by Banaras Hindu University, Varanasi to speak on the same issue.

Dr. Kashyap initiated the talk by sharing his life experience, his role in the department of agricultural communication and as a professional of extension, head of the department, and then getting up to Dean of an agriculture college. He said it starts with 'Justification', as a teacher we align with the biggest role, this role in university needs a separate outlook, skillset, and philosophy without them it becomes difficult to justify the role. The concept of I, Me, Myself doesn't work in this profession, a teacher is nothing

without a learner, a guru is nothing without a disciple and followers makes a leader. He added that if the learner didn't learn, the teacher didn't teach, and explained that there are millions of sources from where we can get the content, the role of a teacher is beyond that and from this point, teaching skills arise where a teacher has to integrate hundreds of odd minds and develop an ecosystem. Pedagogy emerges in the delivery of the content, translating teaching into learning processes, how to design a lecture, and all these issues are beyond content and all of these pertain to learner oriented learning. He further talked about Kolbe's model and said that the content delivered is an experience given but experience doesn't translate into stable learning until it is processed, generalized, and applied. As concluding remarks he told that teaching philosophy, teaching pedagogy, teaching excellence must be a prerequisite of any teacher of agricultural university as this will only help in improving the quality of agricultural education.

This insightful talk raised a pertinent question, 'Should there be an evolving system for agricultural education and conscious inclusion of teaching pedagogy?'



Keep reading for more updates !



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