

Report on educational visit to Sardarkrushinagar Agriculture university, Dantiwada

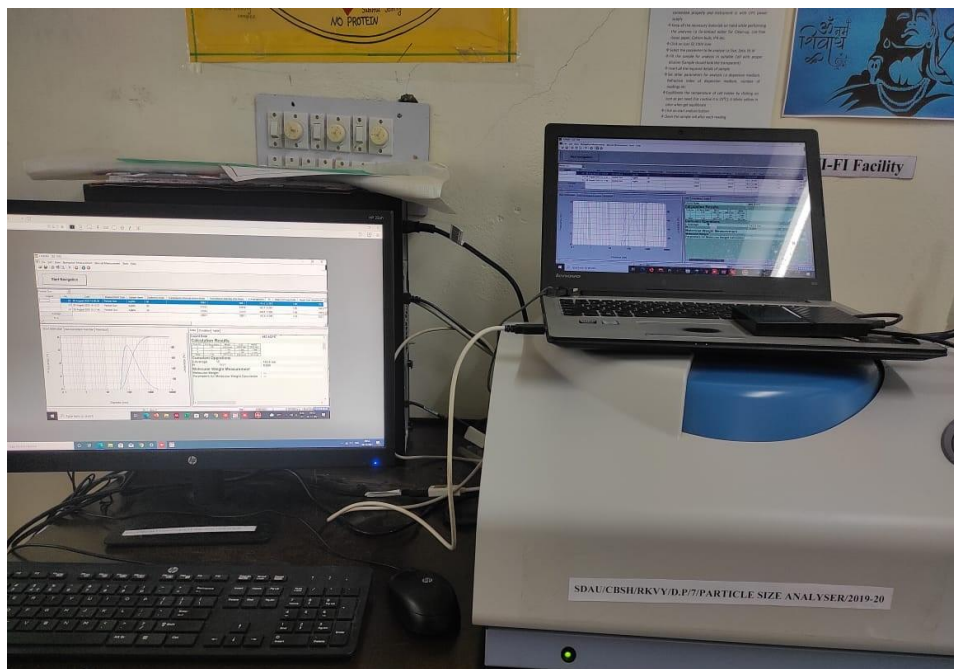
Date : 27/12/2021-28/12/2021

Day 1:

1. Introduction and interaction Session about Production, Quality compromises, and biofortification, Mutational breeding, and variety selection of *Pigeon pea* for the ongoing project by **Dr. Vineet Kaswani**(Asst. Prof. & Head of the Department)



2. Laboratory visit to Department of Biotechnology and Session about green nanotechnology and Explanation of Horiba nano partica, nanoparticles analyser(SZ-100V2) by **Dr. Karan P. Pachchigar**.



3. Discussion and Elaboration of M.Sc students dissertation.
4. Visit to Dantiwada dam.



Day 2

With great memories of last day in Dantiwada dam, we started our second day at 10 a.m. with healthy breakfast of Poha. There are three projects are ongoing in the university.

1. R.K.V.Y. Sponsored Project on Establishment of biofertilizer production unit for research and entrepreneurship development
2. ICAR- RKVY funded Project on Nano-priming: A new vista for seed germination and crop improvement
3. R.K.V.Y. Sponsored Project on Selection of aptamers against profenofos for developing rapid sensing system

From these, 2nd project was described by **Dr. Anuj Kumar, Plant Physiologist** to us. He described the nano-priming, which is an effective process that can change seed metabolism and signaling pathways, affecting not only germination and seedling establishment but also the entire plant lifecycle.

At afternoon, we visited the Pulses Research Station, where we got an opportunity to get close with nature.



We saw many species of pulses like *Vigna mungo* (Urad dal), *Vigna radiata* (Mung bean), *Phaseolus vulgaris* (Kidney bean), *Cajanus cajan* (Pigeon pea) etc. In the farm, we also got to taste the green pigeon pea and *Phyllanthus emblica* (Indian gooseberry). The farm scientist explained us that how they put their theoretical knowledge in practice on plants. The green looking color of crop makes you pleasant. Well, this was a pleasant sight.





Afterwards, we visited various labs like Bioresearch lab, Plant tissue culture lab, DNA extraction room and Biotech lab including Bioinformatics labs. In these labs, various biotechnological techniques have been used. These labs have latest biotech machinery like Gel Dock, Electrophoresis, Sanger sequencer, PCR and RT-PCR etc.



In research center, they perform several tests of unknown samples for pesticide. One of them is GCMS. Gas chromatography (GC) is the separation technique of choice for smaller volatile and semi-volatile organic molecules such as hydrocarbons, alcohols and aromatics, as well as pesticides, steroids, fatty acids and hormones, making this analytical technique common in many application areas and industry segments, particularly for food safety and environmental testing. When combined with the detection power of mass spectrometry (MS), GC-MS can be used to separate complex mixtures, quantify analytes, identify unknown peaks and determine trace levels of contamination.

They have various kind of Mass Spectroscopy machines like GCMS, GCMS-MS, HPTLC, LCMS, ICP-MS, GC ECD/NPD, GC FPD/FID, GC HRMS, LC-Q-TOF etc. These all machines are well maintained.



In the evening, we visited medicinal plant garden from where we cleared our doubts regarding natural herbs and have selected several plants for *in-silico* analysis.

Overall, this educational tour was being very beneficial for us and we are now thinking out of box for plant biology world. Additionally, we have built strong contacts with Dantiwada Agriculture University family and we came nearer to each other.