

# Green Harvest

## Agriculture Newsletter

July-September, 2022 | Volume -1., Issue-3



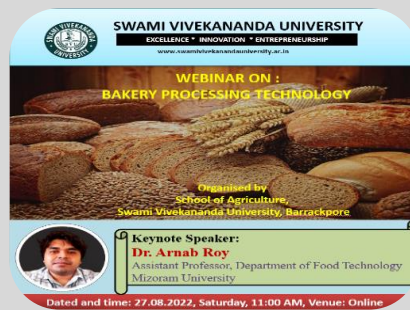
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### About School of Agriculture

The School of Agriculture, established in 2020, aims at achieving excellence in academics and research. Bachelor's degree courses in Agriculture, Agricultural engineering and Master's degree course in Agribusiness management are offered by the School. The school has designed dynamic and focused curricula as per the guidelines of Indian Council of Agricultural Research (ICAR) to develop well-trained manpower for academics, agro-based industry and extension oriented applications.

### Workshops/ Conference/ Invited Talks

The School of Agriculture has organised one invited talk with eminent Scientist, Dr. Arnab Roy, on 27/08/2022. Dr. Arnab Roy, Assistant Professor, Department of Food Technology, Mizoram University, provided an online talk on the topic of “Bakery



Processing Technology” to about 96 student participants of Swami Vivekananda University and other universities. In this Talk, Dr. Arnab Roy briefly discussed about several markets available bakery products and the technology involved related to their processing and storage. Overwhelming responses were obtained from the attended students, and the webinar ended with an excellent interaction session

with the speaker, which enriched the knowledge of the students.

### Hands-on-training on Rice Cultivation

Agricultural education largely depends on field-level exposure to important farming



operations. The School of Agriculture has arranged several Hands-on-training in August, starting with the main bed preparation for cultivating Kharif rice. In this programme, students of B. Sc. (H) Agriculture in 1<sup>st</sup>, 3<sup>rd</sup>, and 5<sup>th</sup> semesters actively participated in the puddling operation, which considers the most important step involving repeated ploughing under the standing water condition to clog the soil pore



spaces for considerable retention of water levels. Following this operation, hands-on training was also provided on transplanting rice seedlings into the



main bed. This operation involved carefully plucking three weeks-old rice (var. IET-4786) seedlings from the seedbed and its transplanting into the main bed with minimum root damage and transplanting shocks. The experienced faculties of our department scheduled these



training programmes to provide field-level experience and promote skill development in vital farming activities along with the development of group and teamwork and leadership skills. Another hands-on training programme on "Dragon fruit plantation" was organised for B.Sc and B.Tech agriculture under the supervision of our faculty members. This programme was planned with the land preparation, erection of the cemented structure, preparation of manure mixture and their application in pits, planting dragon fruit plantlets, regular watering, and weeding.



The students have explicitly executed with this great enthusiasm.

## Industrial Training Visit

The school of Agriculture is grateful to Chinsurah Rice Research Centre, Hooghly, for allowing and



providing the opportunity to the 5th semester of Agriculture (Hons.) undergraduate students to visit there on 18th August, 2022. During the visit, students were introduced to forty-six high-yielding varieties (HYVs) of Rice, i.e. Shatabdi, Khitish, Jaladhi-1, Jaladhi-2 etc., which have been released by the scientists of the research centre for different ecosystems. Students were also introduced to more than 1200



germplasms, regularly maintained, characterized and evaluated for better utilization and documentation.

Students were explicitly flabbergasted to know the success story of the researchers of the centre about the invention of arsenic resistance rice variety, IET 21845 – commercially known as *Muktoshri*. An interactive section with the scientists happened at the end of the one-day visit, where students were praised for their knowledge, love and enthusiasm for agriculture.

## Practical experience in the field

Tractor is an essential modern day agricultural machine, used as a replacement for human and animal power for various farm applications including ploughing, planting, harvesting & cultivating crops.

Concerned faculties conducted several practical sessions, where the 2nd and 3rd year students of B.Sc and B.Tech Agriculture were instructed and allowed to drive the tractor. Active participation of all the students was noticed in these practical sessions.



On our university's campus, a field practical was taken for 3<sup>rd</sup> semester agricultural engineering students on the construction of graded as well as

contour bund. They have learnt to construct bunds that control soil erosion problems and remove excess water to prevent waterlogging. The expertise they



acquired from this practical knowledge can be implemented for soil conservation purposes and make the land capable of crop production.

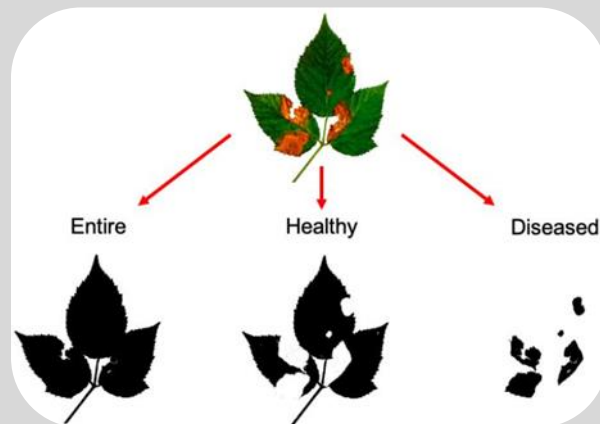
## Novel Technological Nuances

School of Agriculture is continuously striving and trying to bring forward novel agro-technologies for social upliftment.

### *Potentiality of Image Processing Based Disease Identification system in agriculture*

Accurate identification of plant diseases caused by several microorganisms like fungi, bacteria and viruses, etc. and disorders due to mineral deficiency at field level are a serious problem. Technological development in image processing system has opened a new era of detection of plant disease and disorders which is very rapid, accurate and more accessible to farmer and agricultural worker at field level as compared to traditional disease detection techniques.

Focus has been done on the early detection of fungal disease based on the symptoms. This technology leads to development of e-advisory for decision making in delivery of plant disease management advices directly from experts to crop growers with minimal delay. The different steps of image



processing based detection are image acquisition, image processing, segmentation, feature extraction, statistical analysis and classification with a classifier.

## List of publications

Faculty members of School of Agriculture have published articles of international repute and also in newspaper under the SVU affiliation.

1. Laha, A., **Sengupta, S.**, Bhattacharya, P., Mandal, J., Bhattacharyya, S., Bhattacharyya, K. (2022) Recent advances in the bioremediation of arsenic-contaminated soils: a mini review. *World Journal of Microbiology and Biotechnology* 38, 189. (**SPRINGER: Impact Factor: 4.253**)
2. Das, S., **Sengupta, S.**, Patra, P.K., Acharjee, P.U., & Pal, S.K. (2022). Appraisal of environmental,

ecological and carcinogenic risk due to heavy metals in a sewage and solid waste contaminated area, *Soil and Sediment Contamination: An International Journal*, 1-25. (**TAYLOR AND FRANCIS: Impact Factor: 3.057**)

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