

## Advertisement for Incubation of Technology

<b>Title of the technology</b>	ANU-CHAITANYA: A versatile bioregulator for sustainable crop production
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### Current state of Technology

- ✓ Basic principles observed
- ✓ Technology concept formulated
- ✓ Proof of concept established experimentally
- ✓ Technology validated in lab
- ✓ Technology validated in relevant environment (industrially relevant environment in the case of key enabling technologies)
- ✓ Technology demonstrated in relevant environment (industrially relevant environment in the case of key enabling technologies)
- ✓ System prototype demonstration in operational environment (System complete and qualified)
- ✓ Actual system proven in operational environment (competitive manufacturing in the case of key enabling technologies; or in space)

### General Information

In the field of agriculture, major problem is the loss in crop yield due to different abiotic stresses and, increased episodes of climatic variations and unpredictability. NABTD, in collaboration with Vasantdada Sugar Institute, Pune, has developed gamma-irradiated chitosan (a linear polysaccharide composed of randomly distributed  $\beta$ -linked D-glucosamine and N-acetyl-D-glucosamine) based formulation which boost the plant growth and crop productivity. The formulation is easy to prepare, cost-effective and versatile to be applied upon different crops including the flowering plants. The multi-location replicated field trials have been completed and JOINT-AGRESO recommendation has been obtained in 2018, confirming the plant growth-stimulatory potential of gamma-irradiated chitosan. The principal technology named “Anu-Chaitanya” has been developed and technology has been transferred to VSI, for further commercialization. In view of this, the technology incubation is proposed to complete the detailed toxicological evaluation of gamma-irradiated chitosan in the certified laboratories and obtain FCO (Fertilizer Control Order) approval.

### Features/Specification of Current system

The formulation is a general purpose growth stimulator, which is versatile to be applied on various crops, including the flowering plants. The formulation is ready-to-use, pH adjusted and can be scaled-up or scaled-down, as per the requirement.

### Applications of the System

The technology can be used directly on-site at the farmer’s field for improving plant growth and yield, under the realistic field conditions.

## Picture/Photo of the System



**Whether the parent product/ technology/ process is patented: No**

**If yes, provide the details: Not Applicable**

### Deliverables

Following are the deliverables of incubation:

- The detailed toxicological evaluation of gamma-irradiated chitosan and proposal submission for FCO approval.
- The split-dose studies for minimizing the effective dose of gamma radiation.
- Evaluating the storage stability of the formulation.
- Process optimization for large scale irradiation at private facilities.
- The required certification will be obtained for large-scale commercialization of irradiated-chitosan based formulation.
- Study the feasibility, economics and applicability of electron-beam based irradiation.

### Justification for Incubation

The technology incubation is essential to complete the detailed toxicological evaluation of gamma-irradiated chitosan and to obtain necessary approvals for its large-scale commercialization.

### Facility and Infrastructure requirements

<b>Manpower/ expertise:</b> Scientific/Technical staff
<b>Machinery and Equipment:</b> Lab facility for detailed characterization and storage stability of irradiated-chitosan.
Any special requirements for plant, industry, location utilities, handling storage, safety etc.: Private gamma-irradiation facility

### Notes:

1. This technology has been jointly developed by BARC and VSI (Vasantdada Sugar Institute), Pune. They have the first right for entering incubation agreement with BARC for detailed toxicological evaluation of gamma-irradiated chitosan and to obtain necessary approvals for its large-scale commercialization.
2. As per incubation policy, the incubatee (other than VSI) should be a licensee of the existing technology. Alternatively, the applicant will be required to take the license of the existing technology before entering incubation agreement.
3. The Technology Transfer Agreement permitting use of license for the existing technology will be entered between BARC and VSI, Pune on one side and the transferee on the other side.

If interested in Incubation, kindly **download** -> **fill** -> **scan** -> **send** the application form to -

**Convener**  
**Task Force, Incubation Centre - BARC**  
**Knowledge Management Group**  
**Training School Complex**  
**Anushakti Nagar**  
**Mumbai - 400094.**