



## Biotech-KISAN Programme

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### Why in News

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As per the recent information shared by the Union Minister of Science and Technology in Lok Sabha, **Biotech-Krishi Innovation Science Application Network (Biotech-KISAN) programme** plays an important role in taking innovative **biotechnologies** to the farmers.

### Key Points

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- Biotech-KISAN programme is a **farmer-centric scheme** for farmers, developed by and with farmers under the **Department of Biotechnology, Ministry of Science and Technology**.
- It is a **pan-India program**, following a **hub-and-spoke model** and stimulates **entrepreneurship and innovation in farmers** and **empowers women farmers**.
  - It has a **unique feature** to identify and promote local farm **leadership in both genders**. Such leadership helps to develop science-based farming besides facilitating the transfer of knowledge.
- **Aim:** To **understand the problems** of water, soil, seed and market faced by the farmers and **provide simple solutions** to them.
  - The programme links available science and technology to the farm by first understanding the problem of the local farmer and then providing scientific solutions to those problems.
- The **Biotech-KISAN hubs** are expected to fulfil the technology required to generate agriculture and bio-resource related jobs and better livelihood ensuring biotechnological benefits to small and marginal farmers.
  - Currently, there are a total of eight Biotech-KISAN Hubs in different Agro-climatic Zones.

### Biotechnology in Agriculture

- **Government supports** research institutes, central and state agriculture universities for competitive research and development and demonstration **activities in agriculture biotechnology** including **organic farming**.
  - It has been supported across the country including **Aspirational Districts**.
  - During the last three years, approximately Rs. 310 crores have been invested in supporting the use of biotechnology in agriculture.
  - The **Integrated Human Resource Development Programme** under the Department of Biotechnology has been implemented to **provide biotechnology trained personnel in various fields** including agriculture.
- **Alternative of Conventional Farming:**
  - The **understanding of genetics and biotechnology** could enable farmers to obtain maximum yield from their fields and to minimise the use of fertilisers and chemicals so as to avoid their harmful effects on the environment.
  - **Genetically Modified Organisms**' (GMO) use is a possible solution and an alternative path to conventional farming.
    - GMOs have made crops more tolerant to abiotic stresses, reduced reliance on chemical pesticides, reduced post-harvest losses, increased efficiency of mineral usage by plants and enhanced nutritional value of food.
    - For example, **Bt cotton**, **Bt Brinjal**, etc.
  - **Genetically Modified Biopesticides** are biologically based agents used for the control of plant pests.
 

They **can be living organisms** (nematodes or micro-organisms) or **naturally occurring substances**, such as plant extracts or insect pheromones which can **provide resistance to insects without the need for chemical insecticides**.

**Source: PIB**