NCS-TCP: Strengthening Sustainable Agriculture and Empowering Farmers



Modern agriculture depends not only on higher productivity but also on the availability of healthy, reliable and high-quality planting material. The **National Certification System for Tissue Culture Raised Plants (NCS-TCP)**, implemented by the Department of Biotechnology (DBT), Government of India, provides a robust quality-assurance framework for tissue culture plants and is playing an important role in promoting sustainable agriculture across the country.

Through a science-based certification system, NCS-TCP ensures that tissue culture-raised plants are **free from major pathogens such as viruses, viroids and phytoplasmas and are genetically uniform and true-to-type**. This helps farmers access planting material with better potential for uniform growth, productivity and crop establishment. The system is valuable for horticultural and plantation crops, and several crops, including apple, banana, bamboo, black pepper, citrus, date palm, gerbera, potato, strawberry, and sugarcane, are currently being tested under the programme.

Healthy planting material can reduce crop losses, improve field performance and contribute to more efficient use of land, water, fertilizers and other agricultural inputs. By reducing the risk of introducing pathogens through planting material, NCS-TCP also supports **long-term crop health and sustainable production systems**.

The benefits extend beyond individual farms. A reliable certification system strengthens the tissue culture industry, improves consumer and farmer confidence, facilitates access to quality planting material for government programmes, and supports the development of organized supply chains. It also creates opportunities for employment, particularly for women who form a significant part of the tissue culture workforce.

By connecting **science, quality assurance, industry and farmers**, NCS-TCP is helping build a stronger foundation for sustainable agriculture. Its continued expansion can contribute to healthier crops, better farm productivity, reduced production risks and improved livelihoods, while supporting India's broader goals of agricultural sustainability and food and nutritional security.