

Nano Bio Tech Capsules (Microbial Consortia) for sustainable cultivation of FCV tobacco

Nano Biotech Capsules technology developed by IISR, Calicut is evaluated by ICAR-NIRCA for FCV tobacco production in irrigated alfisols of Andhra Pradesh and rainfed alfisols of Karnataka. The formulation is a consortium of microorganisms which reproduce and grow in the soil by utilizing carbon source available near root zone. The combination of microorganisms has the ability to increase the uptake of the nutrients. Converts insoluble major nutrients into easily available form to the plants and improve the utilization of fertilizer. Ten capsules dissolved in 200 liters of water and drench in the root zone (30 ml per plant) 10 days after planting tobacco.

Nano Bio-Tech Capsules improved important agronomic and soil health parameters such as leaf area index, microbial population, root development and phosphorus uptake. Cured leaf quality attributes nicotine, reducing sugars, and chlorides remained within permissible limits, ensuring no compromise on market standards.

Nano Bio-Tech Capsules along with the 100% recommended dose of fertilizers (RDF) and farmyard manure (FYM) enhanced cured leaf yield significantly by 7% over 100% RDF alone in rainfed conditions of Karnataka. In irrigated conditions of Andhra Pradesh, the same treatment resulted in a 5% numerical yield increase and economically, the application of 10 Nano Bio-capsules per acre with 100% RDF and FYM yielded a higher benefit-cost ratio (1.43) compared to 1.39 with 100% RDF alone, ensuring an additional income of Rs. 12,152 per hectare.

Impact: Nano Bio Capsules, when applied with 100% RDF and FYM improved root growth, microbial population and phosphorus uptake. This eco-friendly technology strengthens integrated nutrient management and promote sustainable FCV tobacco cultivation.



100% RDF



100% RDF + Nano Bio Capsules