

Mass production of Trichoderma

Potent bio control agent and used extensively for soil born plant diseases. It has been used successfully against pathogenic fungi belonging to various genera- Fusarium, Phytophthora, sclerotia etc. Trichoderma is most useful for all types of Plants and Vegetables such as cauliflower, cotton, tobacco, soybean, sugarcane, brinjal, Bengal gram, banana, tomato, chillies, potato, citrus, onion, coffee, tea, ginger, turmeric, pepper, betel vine, cardamom etc. Trichoderma strains solubilize phosphates and micronutrients. The application of Trichoderma strains with plants increases the number of deep roots, thereby increasing the plant's ability to resist drought.



Trichoderma may suppress the growth of the pathogen population in the rhizosphere through competition and thus reduce disease development. It produces antibiotics and toxins such as trichothecin and a Sesquiterpene, Trichodermin, which have a direct effect on other organisms. Steps in mass production of Trichoderma is given below.

- Isolation from soil on Trichoderma selective medium (TSM) and incubates 7 days at 25°C
- Components of TSM - Glucose-3g, K₂HPO₄-0.9g., Ammonium nitrate-1g, Magnesium sulphate-0.2g, Rose Bengal-0.15g, KCl-0.15g, Chloramphenicol-0.25g, Distilled water – 1000ml, Agar-20g
- Take rhizosphere soil from different places and pool together
- 10g of soil from the pooled mixture
- Mix it into 250ml flask containing 90ml sterile water and shake it well. It gives the dilution 1:10
- dilute up to 10⁻⁵
- aliquots of 1ml suspension from 10⁻³ or 10⁻⁴ dilutions into separate Petri plates and pour melted TSM into the plate
- In the plates at room temperature for 7days
- culturing in PDA
- Cultures are screened in order to select the most effective strain

- To test efficacy dual culture is done
- Best strain selected which is used in pot culture
- Effectiveness as a bio control agent is tested in field condition under natural occurrence of disease
- Best strain used for mass multiplication
- Potato dextrose broth is liquid medium for large scale multiplication. The inoculated PDB should be kept at room temperature
- When it attains sufficient growth (ie, in 7-8 days from inoculation) the mat along with the broth should be mixed well with talc in the proportion 1:8
- Packed in polythene cover and sealed
- PDA is used for quality assessment of the products
- The analysis has to be conducted at 15 days, 1 month, 2 months etc. from the date of packing.

