

## Screening and Optimization of pesticide degrading bacteria from tomato field of Telangana region

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### ABSTRACT

Pesticide fate in the environment is affected by microbial activity. Some pesticides are readily degraded by microorganisms and others have proven to be recalcitrant. A diverse group of bacteria, including members of the genera *Alcaligenes*, *Flavobacterium*, *Pseudomonas* and *Rhodococcus* can degrade pesticides (*Aislabie and lioyd-jones*1995). Enzymes produced by *Flavobacterium* degrade Coumaphos (kills insect pests of livestock) and *Achromobacter* produce enzymes that degrade Carbofuran (controls corn rootworm) and other crop insects (*Jeffrey Karns*). This shows that by exploring and understanding the biochemical pathways of some of these pesticide degrading bacteria might be useful for reducing the pesticide pollution, increases the soil fertility and also bioaccumulation of chemicals in the food chain can be stopped by introducing these bacteria into the respective crop fields.

The present study aims at screening and optimisation studies for pesticide degrading bacteria from tomato fields of Telangana region using chlorantraniliprole 18.5% EC, in which maximum pesticide degradation was seen at 10mg/lit concentration of pesticide with pH 7 at 37°C in 5hrs 30 minutes physically evident by the formation of froth in the broth. This study may be useful in understanding the organism's role in degradation of certain pesticide samples invitro and as well as in the field later.

**Keywords:** Pesticide degrading bacteria, pesticide pollution, optimization, bioaccumulation, Chlorantraniliprole.

