

## Monochloro Benalaxyl – Enhanced Efficacy, Faster Development

Technology Domain: Chemistry

Patent Application Number: 202541015726

Status (Patent/TRL): Patent Pending / TRL 3

### Technology Summary:

This invention introduces Monochloro Benalaxyl, a novel fungicide and an efficient synthesis method for its production. The key technical solution addresses the slow pace of traditional pesticide discovery by utilizing an intermediate derivatization approach, modifying the known fungicide benalaxyl. The key inventive feature is the new compound itself, Methyl 2-(3-chloro-2,6-dimethyl-N-(2-phenylacetyl)anilino)propanoate, synthesized through a controlled chlorination process using hydrochloric acid and hydrogen peroxide in acetic acid. Results demonstrate that Monochloro Benalaxyl exhibits enhanced fungicidal efficacy against common plant pathogens like *Phytophthora sp.* and *Alternaria solani* compared to its parent compound, while maintaining a comparable toxicity profile (as shown in zebrafish models). This allows for potent pest control with potentially reduced overall pesticide usage. Its primary use is as an active ingredient in fungicidal compositions to protect plants, seeds, and soil from fungal infections, offering economic and environmental benefits to agriculture.

