

NEW SEED TREATMENT SOLUTIONS FOR PLASMOSPORA RESISTANCE MANAGEMENT IN SUNFLOWER

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ABSTRACT

Seed treatment products help to assure a good crop establishment and reduce primary systemic infections from soil born zoospores of *Plasmopara halstedii* which result in plant loss or stunted plants. Downy mildew fungi are considered as high risk pathogens in term of becoming resistant to fungicides and therefore special attention has to be paid to minimize risks using different control methods like resistant sunflower varieties, reducing disease risk via crop rotation sunflowers and using seed treatments. Currently there are molecules from the chemical classes of phenylamides and strobilurins used as seed treatment in sunflowers. As the pathogen and as well as the chemicals are known to be at high risk to develop resistance there is a need to find new chemicals with different mode of actions to maintain high level of downy mildew control under field conditions. Field trials were set up in a number of countries in Europe, LATAM and USA to evaluate the level of activity in randomized complete block small plot trials. While Mefenoxam good protection of the young plants against downy mildew in field where *P. halstedii* was sensitive to phenylamides, Mefenoxam did not provide sufficient control in fields where *P. halstedii* was resistant to phenylamides. Two new molecules, each one with a new mode of action, were tested in the field under conditions of either sensitive or resistance *P. halstedii* races. In both cases a significant higher level of control *P. halstedii* over Mefenoxam alone was observed in all geographies. A combination of the new mode of actions with resistant sunflower traits will provide the best level of *P. halstedii* control while ensuring a sustainable approach to *P. halstedii* resistance management.

Key Words : Plasmopara seed treatment resistance management