

THEORETICAL BASES ASSUMING DURABLE RESISTANCE TO *PLASMOPARA HALSTEDII* (SUNFLOWER DOWNY MILDEW)

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ABSTRACT

Sunflower downy mildew is considered as one of the most serious diseases. Therefore, vertical resistance has been used intensively, but with the appearance of many races since 2000, research on more durable resistance has been undertaken. In this review, we present new results concerning the evolution of pathogenicity under artificial conditions in order to underline a mixture model assuming durable resistance against *Plasmopara halstedii*. Examples of host-parasite interactions including the influence of plant mixture against pathogens and durable resistance are presented to integrate in our couple *P. halstedii* / *Helianthus annuus*.

Key Words: Aggressiveness, horizontal resistance, *Pl* gene, super race, vertical resistance, virulence