

**DIAPORTHE HELIANTHI ON SUNFLOWER IN HUNGARY AND THE RESULT OF BREEDING FOR RESISTANCE.**

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*Diaporthe helianthi* /anamorph stage: *Phomopsis helianthi*/ Munt.-Cvet.et al., a new fungal pathogen was detected in Hungary in 1981 on the south, south-eastern part of the country. Serious losses in seed yield was caused by the disease in the last two years, too, in spite of repeated treatments with fungicides. Regarding to not only the aspects of economy, but protection of environment, improvement of resistant sunflower hybrids might be the optimal means of plant protection. Forty inbred lines, combinations, hybrids and open pollinated varieties were tested to sum up their resistance with artificial inoculation method both under greenhouse and field conditions. Wild species of genus *Helianthus* were infected with the same method in order to find resistant genetic resources for interspecific hybridizations. Some weed species and ornamental plants belonging to the family Asteraceae were also investigated as possible reservoirs or hosts. Two cytoplasmatically male sterile lines /CMS 7 and L 2178/ and two restorers /R5E and BR/ proved resistant and this character was inherited in their combinations. Some of the hybrids, e.g.: IH-182 and Koflor-2 showed resistant reaction. Among the wild species *H. argophyllus* was prominently resistant, *H. decapetalus* and an intermediate form between *H. tuberosus* and *H. scaberrimus* proved tolerant while *H. serotinus* and a local type of *H. tuberosus* were susceptible. On the basis of these preliminary investigations reality of breeding for resistance can be concluded, because gene sources of resistance are available in inbred material and among wild species as well.