

RESEARCH ARTICLE

# Reaction of sunflower hybrids to powdery mildew caused by *Erysiphe cichoracearum* DC.

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## ABSTRACT

Five sunflower hybrids KBSH -1, KBSH -41, KBSH -42, KBSH -44 and KBSH -53 were assessed under glasshouse conditions for resistance to a field population of powdery mildew fungus *Erysiphe cichoracearum* DC. Hybrid KBSH 53 recorded least powdery mildew severity of 4.2 per cent as compared with other hybrids and was resistant to powdery mildew. The highest disease severity (61 %) was recorded in hybrid KBSH-44 which was highly susceptible to powdery mildew.

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## INTRODUCTION

*Erysiphe cichoracearum* DC. is a widely distributed pathogen of cultivated annual sunflower (*Helianthus annuus* L.). Infection of sunflower by *E. cichoracearum* causes early senescence during the flowering stage and upto 15 per cent stunting and 81 per cent reduction in yield in the greenhouse. Powdery mildew may also cause economically significant reduction in sunflower production in tropical areas. Cultivars of sunflower are known to differ in their reaction to the powdery mildew fungus (Zimmer and Hoes, 1978). The only known source of resistance lies in wild *Helianthus* species (Jan and Chandler, 1985). The annual species of *Helianthus debelis* sub.sp. *sylvestris*, *H. praecox* sub.sp. *praecox* and *H. bolanderi* and the perennial species, *H. californicus*, *H. ciliaris*, *H. decapetalus*, *H. lacinatus* and *H. rigidus* were reported to be tolerant to powdery mildew under green house and natural conditions (Saliman *et al.*, 1982).

Powdery mildew affects most of the commercial varieties under present cultivation and it has been reported from different parts of the world. The powdery mildew of sunflower was first reported from US in 1928 (Anonymous, 1928). In India, the disease was first reported from Bombay province

(Patel *et al.*, 1949), later from Rajasthan (Prasada *et al.*, 1968), West Bengal (Goswami and Dasgupta, 1981) and Punjab (Bains *et al.*, 1996) causing considerable reduction in yield. The disease manifests as minute discoloured speck on leaves from which powdery mass radiates in all directions. All the aerial parts of the host are covered with white powdery mass containing mycelia and conidia of the fungus (Plate A).

