

The performance of sunflower hybrids resistant to race F of *Orobanche cumana* Wall. in naturally infested fields.

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ABSTRACT

Sunflower hybrids resistant to race F of *O. cumana* seldom show complete lack of broomrape attachment and emergence. The effects on yield of 4 resistant hybrids with that of two susceptible highly productive hybrids were compared. Incidence of plants with emerged broomrapes (BI), final degree of attack (FDA), seed and oil yields, and oil content were determined in naturally infested fields of two locations of southern Spain (2004-2006). Although resistance is generally expressed by low FDA, higher BI was observed in 2006, showing much dependency on the environment. Vertical resistance of hybrid PR64A71 contrasted with horizontal resistance in Arango, Centurión and Olimpia, which showed higher FDA values in one heavily-infested field. Although year and location influenced yield variables, oil content mainly depended on hybrid. Cropping resistant hybrids in moderately-infested fields provided up to 11% seed yield increases. The high field potential of resistant hybrids is highlighted in heavily-infested fields since, despite the higher disease levels in the latter three hybrids, yield increases averaged 124 and 199% depending on water availability. Key Words: sunflower broomrape, *Helianthus annuus*, field resistance