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TRANSFER OF GENETIC RESISTANCE TO IMIDAZOLINONE IN SUNFLOWER HYBRIDS (*HELIANTHUS ANNUUS* L.) FOR CONTROL OF OROBANCHE (*OROBANCHE CUMANA* WALLR.)

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Orobanche cumana Wallr. Is a dangerous parasite of sunflower, even impeding its cultivation in large areas. Diffusion of sunflower genotypes carryng genetic resistance to different physiological races of *Orobanche* induced radical changes in the pathogenicity of the parasite, which become more difficult to control, because of the continuos apperance of new virulent races. The discovery of a spontaneous mutant of sunflower resistant to imidazolinone has opened a new possibility to *Orobanche* control since chemicals derived from this molecule, normally used as herbicides, are efficiently controlling the development of this parasite. The paper reports the transfer of this mutant gene for imidazolinone resistance, found originally in USA in a wild sunflower population, in domesticated sunflower lines restoring male fertility and maintaining self sterility for hybrids production. Using genetic conventional techniques it was also possible to study the genetic basis of inheritance of this character. Resistance was monogenic and dominant and therefore its transfer in highly producing lines is rather simplified. EUROGEN Society has already developed highly producing hybrids, resistant to imidazolinone, which can be successfully cultivated also in areas where *Orobanche* is strongly diffused.