

GENETIC CONTROL OF GLUCOSINOLATES OF RAPESEED (BRASSICA NAPUS L.) MEAL

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ABSTRACT

In the present investigation, the nature of genetic control of three major glucosinolates viz., gluconapin, glucobrassicinapin and progoitrin has been studied utilizing a diallel cross involving 10 rapeseed (Brassica napus L.) cultivars. The glucisinate content of the seed meal was found to be determined by the genotype of the maternal parent, rather than the embryo genotype. Significant differences between reciprocal F_1 crosses for gluconapin and progoitrin suggested cytoplasmic differences to play a vital role in the expression of these glucosinolates. The estimates of genetic parameters revealed that additive genetic effects were largely responsible for the inheritance of gluconapin, while partial to complete dominance was involved for the other two glucosinolates. Approximately equal frequencies of dominant and recessive alleles were observed in the inheritance of these traits. The cultivars Bronowski, Oro and Golden showed superior combining ability for imparting low glucosinolates content in their crosses. The possibilities of selecting out segregants transgressing for low/zero glucosinolates in the rapeseed cultivars are discussed.