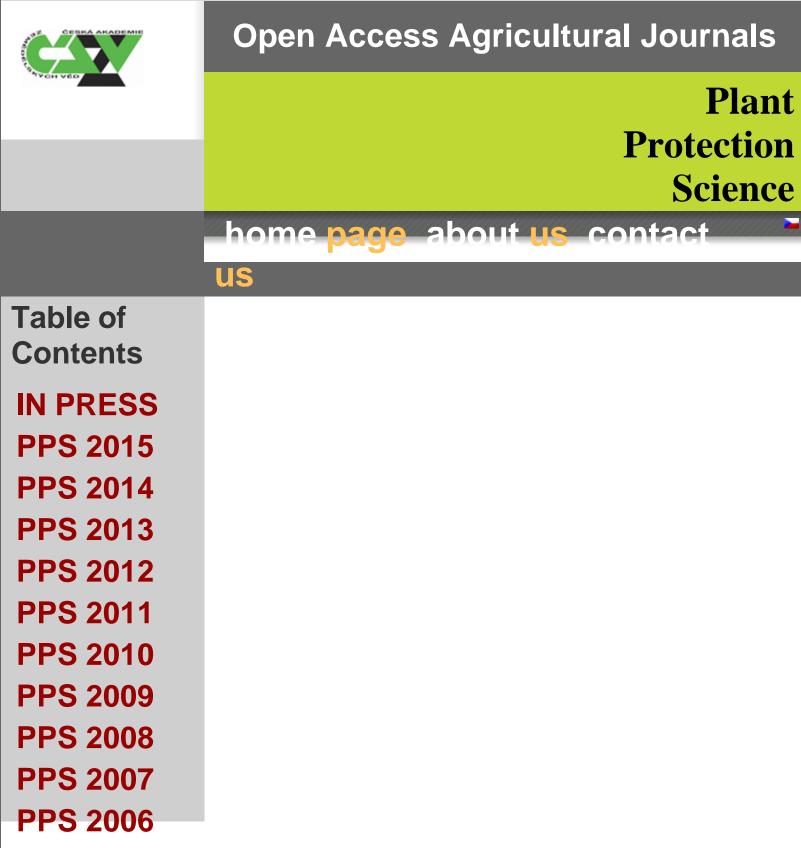
# **Czech Academy of Agricultural**

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**Plant Protection Science** 

Marker-assisted selection for leaf rust resistance in wheat by transfer of gene *Lr19* 

Šliková S., Gregorová E., Bartoš P., Kraic J.

### Plant Protect. Sci., 39 (2003): 13-17 [ fulltext ]

Cultivar Agrus, possessing a chromosomal substitution, and cultivar Sunnan, possessing a translocation from *Thinopyrum ponticum* (= *Agropyron elongatum*, 2n = 10x) with leaf rust resistance gene Lr19 against Puccinia triticina, were crossed with the susceptible winter wheat cultivars Sofia, Simona and Lívia to transfer Lr19 into agronomically better genotypes by markerassisted selection. Altogether 304 individuals of the F2 progeny were screened for endopeptidase phenotypes. We found null endopeptidase allele *Ep-D1c* (marker tightly liked with resistance gene Lr19) in 49 plants. The progenies of 40 plants of the F2 generation (with *Ep-D1c*) were reselected with the same marker and tested for leaf rust reaction. Results achieved with the isozyme marker corresponded with those of the resistance tests. We obtained 28 F3 families with resistance gene *Lr19* confirmed by presence of the null endopeptidase allele and by tests for leaf rust reaction. Field tests showed that Agrus increased the height of plants in the progenies, and the smallest negative effect on yield components was observed in both crosses with cultivar Sunnan.

#### **Keywords:**

*Puccinia triticina*; leaf rust; *Lr19*; *Triticum aestivum* L.; endopeptidase; marker-assisted selection

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