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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 Livia to transfer *Lr19* into agronomically better genotypes by marker-assisted selection. Altogether 304 individuals of the F₂ progeny were screened for endopeptidase phenotypes. We found null endopeptidase allele *Ep-D1c* (marker tightly linked 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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