

## Construction of a linkage map using a rye doubled haploid population

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### Abstract

A preliminary linkage map of rye (*Secale cereale* L.) was constructed using a doubled haploid (DH) population from a cross between doubled haploid parents cv. 'Voima' and cv. 'Amilo'. The population contained 90 DH individuals. The DHs were produced by an anther culture method mainly as described in Immonen & Tenhola-Roininen (2003). Different marker types were used when building the map: microsatellites, RAPDs (Random Amplified Polymorphic DNA), IRAPs (Inter-Retrotransposon Amplified Polymorphism) and REMAPs (Retrotransposon-Microsatellite Amplified Polymorphism). All seven linkage groups of rye were identified. The DHs were crossed to cv. 'Riihi' to get seed for  $\alpha$ -amylase activity measurements.  $\alpha$ -Amylase activity is negatively correlated with pre-harvest sprouting. Three QTL (quantitative trait loci) affecting pre-harvest sprouting were found.

### Reference

Immonen, S. & T. Tenhola-Roininen, 2003. Protocol for rye anther culture. In: M. Maluszynski, K.J. Kasha, B.P. Forster, I. Szarejko (Eds.), Doubled haploid production in crop plants: a manual, pp. 141-150. Kluwer Academic Publishers, Dordrecht, The Netherlands.