## **Poster Abstract – D.40**

## SELECTION OF BREAD WHEAT LINES CARRYING THE *Pm13* RESISTANCE GENE IN A BACKCROSS PROGRAMME SUPPORTED BY MARKER ASSISTED SELECTION

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Plant breeding for disease resistance has long been of foremost importance in improving crops yield and quality. Powdery mildew (*Erysiphe graminis* D.C.) is one of major fungal wheat disease.

Resistance genes to powdery mildew in wheat have been found both in the cultivated genepool and in wild relatives but most of them have already been overcome by new virulent strains. Therefore wild relatives are constantly under study for new resistance sources.

Aim of this research was the introduction of the Pm13 gene from Aegilops longissima in 18 bread wheat cultivars widely cropped in Italy and characterised by high yield and/or good quality. A backcross breeding programme, using these cultivars as recurrent parents and Pm13-Chinese Spring as resistance donor, was carried out. Marker assisted selection (MAS) with a closely linked STS marker has been applied giving good and reproducible results; the method allowed to overcome the artificial inoculation, skipping the environment-related problems, and permitting an early-stage selection on 2-3 leaves seedlings.

Agronomic and quality evaluations carried out on sixty selected lines led to the identification of three of them, two derived from a high quality cultivar and one from a high yielding cultivar, possessing adult plant resistance associated to the parent's peculiar traits.