

IDENTIFICATION OF NEW SOURCES OF RESISTANCE TO FUNGAL DISEASES IN BREAD WHEAT

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Bread wheat (*Triticum aestivum*) is economically and nutritionally important for the production of bread and other bakery products. Significant yield losses and downgrading in quality are caused by fungal infections. Among the most important fungal diseases in Italy are leaf, stem and yellow rusts, which may cause up to 50% yield losses, mainly due to a reduction in biomass, harvest index, and kernels per square meter. The recent emergence of new widely virulent and aggressive strains of rusts (particularly stripe and stem rust) threatens Italian wheat production, especially under the trend of higher temperature and humidity. Therefore, identifying resistant cultivars is one of the best means for controlling the rust diseases. In the present research, a set of ten bread wheat cultivars selected on the basis of morpho-phenological traits and agronomic performance in different Italian environments were tested in two locations and evaluated for different agronomic traits and for reaction to the main fungal pathogens under natural infection conditions, together with a susceptible check. The trial was carried out in such a way to evaluate also the effect of the application of two optimized solid and liquid formulations from defatted seed meals of *B. carinata* and *E. sativa* on plant reaction to diseases. During the growth cycle the main morpho-phenological traits have been assessed together with the reaction to yellow, leaf and stem rust, for which very strong infections occurred in both locations. Some completely resistant cultivars were identified which will be employed in the

development of segregating populations for studying the genetic bases of this resistance.

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