

A MAJOR QTL EXPLAINS DURABLE RESISTANCE AGAINST LEAF RUST IN DURUM WHEAT CRESO

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The Italian durum wheat cultivar Creso possesses a high level of durable resistance to leaf rust based on both hypersensitive and non hypersensitive components. In order to investigate the genetic bases of this resistance, a segregating population composed by 123 recombinant inbred lines (RILs) deriving from the cross Creso x Pedroso, a Spanish susceptible durum wheat variety, was evaluated for disease severity in adult plants under field conditions. Furthermore the resistance of parents and RILs was evaluated in controlled conditions at two developmental stages (seedling and adult plant) by assessing macroscopically the latency period and microscopically the number and type of pathogen colonies formed following artificial inoculation with a specific isolate. A genetic linkage map for QTL analysis was developed from this cross, consisting of more than 400 molecular markers and spanning greater than 1800 cM. One major QTL explaining both reduction of disease severity in the field and increased latency period was found on the long arm of 7B chromosome, and microsatellite and DArT markers strictly associated were identified.