

## **YIELD COMPONENTS AND ADAPTIVE TRAITS IN A SEGREGANT POPULATION OF DURUM WHEAT UNDER DROUGHT CONDITIONS**

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In durum wheat the water scarcity is the primary constraint affecting grain production in the Mediterranean regions. In water stress conditions plant modifies his metabolic activity such as the accumulation of ABA, osmotic adjustment, ect. The risk of drought is highest during anthesis and the filling phase when a strong decrease of the grain yield can occur. In the past, morphological and yield components served as criterion for evaluating drought tolerance. The identification of QTLs for yield stability in water stress conditions is useful to develop marker assisted selection strategies.

A set of 120 recombinant inbred lines (RILs), obtained by single seed descent from the cross between the cv. Svevo and the cv. Ciccio, was cultivated by using the experimental design of split-plot, made up of two blocks with two different water levels: a rainfall one (stressed conditions) and an irrigated one (watered based on ET values). Plant adaptive traits (heading time, plant height, waxiness) and several yield components (grain yield, ear number, kernel number, 1000 kernel weight, grain yield per spike, hectolitre weight) were evaluated. Water stress conditions caused a significant decrease of grain yield. The statistical analysis shown that some yield components are more sensitive to drought in comparison to other. All yield components shown a low degree of heritability. Several molecular markers (microsatellites) polymorphic between the parental lines of the RIL population were identified. The recombinant inbred line population is being tested with microsatellites markers to identify QTLs involved in the genetic control of grain yield and its components under drought conditions.