

Genetic diversity and crown rust resistance of oat landraces from various locations throughout Turkey

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Contact: Ziya Dumlupinar, Dept. Agricultural Biotech., Faculty of Agriculture, Kahramanmaraş Sütçü İmam University, Kahramanmaraş, Turkey.

Summary:

We used microsatellite and SNP markers to study the genetic diversity of 375 oat landraces (*Avena sativa* L. and *Avena byzantina* K. Koch) collected from Turkey. The first two principal components from the principal component analysis separated two groups of accessions and explained 9.3% of the variation in the marker data. This division matched well with the geographic origin of the landraces. Similarly, when classified by plant growth habit, the spring types originated mostly from the highlands of East Anatolia and from inner Anatolia and the winter types originated from coastal areas. Testing for crown rust resistance showed that most of the lines did not contain major resistance genes. This study has provided genetic characterization of unique germplasm from the center of oat domestication, which will be useful to oat breeding programs wishing to diversify their breeding pool. Seed of the Turkish landraces is available from the senior author, who remains active in oat research.