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Czech J. Genet. Plant Breed.

**Monfared S.R.,
Humberto G.:**

**Genetic diversity in
Iranian chickpea (*Cicer
arietinum* L.) landraces
as revealed by
microsatellite markers**

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131-138

To estimate the genetic diversity of chickpea germplasm from Iran, a total of 307 landraces from 4 regions including: northern areas (29 from Ardebil, 3 from Qazvin and 5 from Mazandaran provinces), temperate (16 from Kermanshah, 2 from Semnan, 54 from Khorasan and 20 from Kerman provinces), semi-arid (28 from Ghom and 56 from Isfahan provinces) and cold areas (15 from West Azarbayjan, 52 from Tehran and 27 from East Azarbayjan provinces) were analysed using 16 microsatellite loci. The number of alleles

per microsatellite locus ranged from 8 to 29, with an average of 19.31 per locus. A high level of genetic diversity in the northern area ($He = 0.76$), even with a limited number of available landraces (37) compared with the other three regions (84– 94), might confirm the northern Persia as part of the chickpea centre of origin. The neighbour-joining tree showed a low relationship between molecular divergence and the geographical grouping of chickpea. Moreover, cluster analyses based on molecular data showed that the northern area was separated clearly from the other three regions, indicating a physical barrier or geographical and environmental differences among these regions. A wide genetic diversity of Iranian chickpea landraces is a critical component for future selection and use of this germplasm for future breeding of chickpea.

Keywords:

Cicer arietinum; chickpea; genetic structure; germplasm; microsatellite

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