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RECOVERY AND CHARACTERIZATION OF TYPICAL ITALIAN LENTILS

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In the last 50 years, Italian lentils suffered a dramatic reduction of both growing area and production due to constraints such as the lack of innovative agro-techniques, the high harvesting costs, the use of improved foreign cultivars, and a reduced consumption. Because of these factors, Italian local populations of lentil risk severe genetic erosion. The opportunity of introducing again this legume into the daily diet lays on its well-known healthy traits linked with the benefits of a better soil management and a dry land recovery. Among the local germplasm, Onano and Altamura lentils, coming from the homonymous locations in Latium (high Tuscia) and Apulia regions, respectively, were greatly appreciated due to their good organoleptic traits, easy cooking and superior taste. The lentil of Onano has old origins dating back to the XVI century and, since the beginning of 1900, received different prizes at several national and international exhibitions. Its present production of about 40 tonns is involving now a growing area of 57 hectares that, however, not always is referred to the same ecotype traditionally cultivated and appreciated in the area. Few farmers are sporadically growing the lentil of Altamura, exclusively for self-consumption.

The present work is aimed at identifying and characterising the true-to-type local populations of both these lentils for a safeguard and the valorisation of an Italian genetic heritage that, in the past, represented a great economical support to Onano and Altamura communities.

The lentil of Onano, grown in comparison with the Canadian cv. Eston (100 seed weight ~3 g) in different locations such as Onano, Viterbo and Rome during 2002-2004, was characterised for morpho-physiological traits in the different phases of its biological cycle. Plant height overcame of 12% the Canadian control but with a lodging of 20%. The plants, generally with semi-erect habitus, were better adapted to their typical growing environment; if winter sown, they showed a biological cycle of about 6 months that were reduced to 3-4 months in case of spring sowing. The grain had a light green colour with a 100 seed weight of ~ 5-6 g. Compared with the cv. Eston in the countryside around Altamura, the homonymous lentil revealed a vegetative habitus not much different from the Canadian variety; it showed a plant height of about 48 cm and a quite good number of both branches and pods per plant. The grain yield of both Italian ecotypes was a little lower than the cv. Eston. The large and flat grain of Altamura lentil was characterised by a 100 seed weight of ~ 7-8 g and a light green colour.

The lentil populations of Onano and Altamura together with other Italian ecotypes such as Castelluccio, Ustica and Pantelleria were submitted to a molecular characterisation by intermicrosatellites (I-SSRs). Their relationship to the Canadian variety Eston was evaluated. The ploidy level of some populations was also analysed by flow cytometry.