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Poster Abstract - G.04

BIODIVERSITY OF SARDINIA AND CALABRIA MYRTLE (*MYRTUS COMMUNIS*) ASSESSED THROUGH MORPHOLOGICAL CHARACTERS AND AFLP MARKERS

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Myrtle (*Myrtus communis*), a shrub widespread in the Mediterranean area, is the only species of Myrtaceae family growing in Europe. In the last years it is appreciated for its pharmacological and aromatic properties. The use of myrtle as aromatic plant is traditionally rooted in coastal areas of Mediterranean Sea, especially in the Italian regions of Sardinia and Calabria, where it represents a potential in food and medicinal herbs industry.

In this work an evaluation of biodiversity in 14 populations of Sardinia and Calabria myrtle was carried out by means of morphological characters and AFLP markers.

Principal Component Analysis (PCA) done on morphological characters showed that phenotipic variability was primarily related to branch diameter, seed characteristics and leaf dimensions.

Genetic diversity, assessed with AFLP markers revealed a clear separation between populations of Sardinia and Calabria. AMOVA analysis indicated that genetic variation was greater within populations (51.86%) than among populations (16.99%), as reported for outcrossing species. A significant amount of variation (31.15%) was attributable to variation between the two groups including populations of Sardinia and Calabria, suggesting a genotypic differentiation between myrtle collected in these two regions.

Genetic diversity within populations was assessed estimating expected unbiased heterozigosity (H_E) that ranged from 0.0595 to 0.2595. These values resulted correlated with population extension ($r= 0.918$, $p<0.01$) and with two reproductive parameters: seed germinability ($r=0.793$; $p<0.01$) and number of seeds per fruit ($r=0.631$; $p< 0.05$). A moderate gene flow within Sardinia and Calabria myrtle (1.2719 and 1.0478 respectively) counteracts the loss of genetic variation observed in some populations and avoids their differentiation and isolation.