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Thirty eight accessions of three species of the genus *Mentha* (*Mentha longifolia*, *Mentha spicata* and *Mentha piperita*) and seven accessions of two species of the genus *Ocimum* (*Ocimum basilicum* and *Ocimum kilimandscharicum*) in Egypt were analyzed to assess the genetic diversity levels within and among populations and species of both genera. Three types of traits were used in this study; morphological traits, seed proteins elecrophoretic profiles under reducing conditions and variations in isozyme electrophoretic profiles on polyacrylamide gels.

Morphological variation was not completely sufficient to distinguish different species or illustrate patterns of infraspecific variation; probably due to the use of few number of morphological traits. The data obtained from polyacrylamide gel elecrophoresis of seed proteins clearly separated *Mentha spicata* from *Mentha longifolia*.

The analysis of isozyme polymorphism in both *Mentha* and *Ocimum* clearly separated different species. *Mentha piperta* was clearly delimited from *Mentha spicata* and *Mentha longifolia*. Accessions of the latter two species were also delimited as two separate groups.

Both, seed proteins and isozymes data also revealed an impact of geographic distribution on the genetic diversity particularly in *Mentha longifolia* and *Ocimum basilicum*. In *Mentha longifolia* accessions representing the Delta region showed closer similarity to each other and accessions collected from sites outside the Delta were also similar to each other. One accession representing *Mentha longifolia* subspecies *schemperi* was not delimited as a separate identity. However, considerable distance was evident between this accession and other accessions of

Mentha longifolia. In *Ocimum basilicum* accessions representing different varieties were clearly separated. The genetic variation among *Mentha* populations in Egypt, as expressed in the variation in the electrophoretic data of both seed proteins and isozymes, indicates the occurrence of natural hybridization among the different *Mentha* populations.