

## ABSTRACT

### DETERMINATION OF THE ONTOGENETIC AND MORPHOGENETIC VARIABILITY IN DIFFERENT BASIL (*Ocimum basilicum* L.) GENOTYPES

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In this study, it was aimed to determine the ontogenetic and morphogenetic variability in different basil (*Ocimum basilicum* L.) genotypes in experimental fields of Research and Practice farm of Field Crops, Department of Agricultural Faculty in Adnan Menderes University in 2013. One of the basil genotype (as experimental material) was found from the market and the other six of them was found from the Gaziosmanpaşa University. The experiment was arranged in a split-plots design with three replications. Main plots were harvesting times (pre flowering, full flowering, post flowering) and sub plots were basil genotypes. The plant was split up into five parts, namely, down (1/3), middle (1/3), up (1/3), leaf and scape in each growing stages for the determination of the morphogenetic variability. The maximum yield was obtained from the down part of the plant in different growing stages in terms of yield of the up, down and middle parts. In all five parts, the maximum values of the yield was found at the full- flowering period and the minimum values was found at the post- flowering period in the up part. The most suitable time for harvesting was the full- flowering period. In this research, the mean plant height was 37.64-95 cm and the yields of the mean fresh herb, the mean drug herb, the mean drug leaf, the mean drug flower were 795.31-3576.76 kg/da, 237.13-1225.02 kg/da, 97.92-542.42 kg/da, 52.08-339.83 kg/da respectively for basil genotypes. In the flower, the essential oil rate was between %0.13-1.23 and in the leaf, the essential oil rate was between % 0.18-1.70. It was determined that the main components of the essential oil were methyl chavicol and eugenol. In Aydın ecological conditions, the harvesting should be done at full- flowering period by using first harvesting and seventh genotype for the maximum yield and the harvesting should be done at full-flowering period by using leaf parts of the plant, second harvesting and seventh genotype for the maximum essential oil rate.

**Key words:** Basil (*Ocimum basilicum* L.), ontogenetic and morphogenetic variability, yield, essential oil rate.