

ABSTRACT

The results of the research concerning vegetative dahlia propagation by different types of cuttings are presented in the work. The experimental plant material were four dahlia varieties: 'Berliner Kleene', 'Gea'; 'Orange' and 'Orietta', from which six different types of cuttings were excised: 'with heel', 'without heel', 'top', 'top long', 'middle' and 'lateral' ones.

The cuttings were rooted in a glasshouse and the quality of the obtained plants was evaluated on the basis of the following features: length of roots, weight of the underground part, height and weight of the aboveground part and the number of leaves.

The highest mean weight of the aboveground part was observed in case of plants obtained from 'top' and 'top long' cuttings. Plants obtained from the 'top', 'top long' and 'without heel' cuttings formed the most leaves during five weeks of the rooting process. The least leaves formed plants obtained from 'lateral cuttings'. The highest plants were those grown from 'top long cuttings', while the shortest were those obtained from cuttings excised from the leaves axils, so called 'lateral cuttings'. The longest roots characterized plants obtained from 'top long cuttings', while the shortest were roots of plants obtained from cuttings excised from leaves axils, so called 'lateral cuttings'. Taking into consideration the type of cutting and variety, it was noted that the longest roots formed plants obtained from cuttings 'without heel' of the 'Orange' variety. Definitely the shortest roots characterized plants grown from 'lateral' cuttings of the 'Berliner Kleene' variety.

The young plants obtained from different types of cuttings were planted into the ground and the rate of survival in the final planting area was estimated. All plants obtained from different types of cuttings, despite some differences in studied parameters, were suitable to be planted in the ground and acclimatized very well. The rate of survival exceeded 90%. The differences in a survival rate in a final destination place between the types of cuttings were not observed.

A process of tuberization was also studied. During vegetation, every two weeks, a batch of plants was dug out nine times and the following features were estimated each time: fresh weight of underground and aboveground part, fresh weight and number of tubers.

Type of dahlia cuttings influenced a starting date of tuberization. In case of plants obtained from cuttings 'with heel', of all the varieties tested, tuberization started just after planting them in a final destination area, while in case of plants obtained from 'middle' and 'lateral' cuttings, it started after 3-4 weeks. After the tubers had appeared on a rootstock, the

tuberization process proceeded in a similar way. The highest increase in fresh weight of the underground part (roots and tubers), was observed during the shortening days period, in the second half of August and in the beginning of September.

Both the starting day and the whole tuberization process are varietal characteristics and varied depending on the variety.

A tuberization process of dahlia is closely related to the increase in the fresh weight of the aboveground part. It was observed that the increase of the aboveground part of plants decreased at the end of July and in the beginning of Autumn (end of August and during September). During this time fresh weight of tubers increased intensively, what was closely linked with the day length. The highest increase in fresh weight of the aboveground part was observed during a long day, while a fresh weight of the underground part increased during shortening days, in August and in the beginning of September. A very significant influence on increase of the aboveground part fresh weight and on tuberization process have meteorological conditions. Warm summer months, with moderate amount of precipitation, advantageously affected the increase of the above and underground parts of dahlia plants fresh weight.