

**INFLUENCE OF SOWING PERIODS ON THE DYNAMICS OF
FORMING OF LEAF SURFACE AND ROOT WEIGHT OF PARSNIP
(PASTINACA SATIVA L.)**

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Actuality. The main task of horticulture is supplying population with fresh products at the expense of increasing of production and assortment enhancing. Parsnip has less production volume than other vegetables but it is a unique source of vitamins, freely soluble mineral salts and essential oils. All these components regulate metabolism and are highly important all the year [1, p. 152].

Necessity of studying the wide range of sowing periods (1/04–10/06) can be explained by long sowing period and necessity of establishing permissible sowing periods which do not cause crop capacity. Urgency of specification of sowing periods of parsnip in certain soil and climate conditions is caused by appearance of new varieties of parsnip, concentration of production and increasing of sown areas.

According to L. M. Puzik and O. I. Philimonova dominating influence (65 %) on marketable harvest of parsnip has duration of vegetative period [2, p. 191–195].

Sowing can be carried out towards winter but such plants often form bolters on the first year. Thus sowing mainly is carried out in early spring on mature soil at 5–6 °C at a depth of 10 cm. Such temperature is typical for the first decade of April [3, p. 228].

According to M.A. Maksimov [7, p. 495] the better developed surface of a leaf the more total accumulation of dry matter. Plants with quite high intensity of assimilation of every leaf but with small surface of leaf have poor growth and accumulate limited quantity of organic matters.

Thus different measures which promote quick growth of assimilation surface of a leaf extension of storing in active state promote favour high yields of parsnip.

The objective is to identify the influence of sowing period on the dynamics of forming of root weight and leaf surface of parsnip.

The materials and methods for investigation. The research was conducted in 2015–2016 on the basis of experimental field at the Department of Vegetable-Growing in SRD “Plodoovochevyi Sad” of NULES of Ukraine on parsnip (*Pastinaca sativa* L.) (sort Stymul).

The soil on experimental plots – sod-podzol, coarse-pulverescent light loamy.

The investigation was carried out according to the Methodology of Investigations in Horticulture and Melon Growing [8, p. 369]. Seeds were planted at + 4...+ 6 °C (I decade of April), + 6 ...+ 8 °C (control) (II decade of April), + 8...+ 10 °C (III decade of April), +12...+ 14 °C (I decade of May), +14...+ 16 °C (II decade of May), + 16...+ 18 °C (III decade of May), + 18...+ 20 °C (I decade of June). Sowing scheme – wide-space sowing. Growing space after formation of terminal thickness – 45x10 cm (222222 pieces per hectare). Planting depth – 1,5–2 cm. Allocation of plots – systematic, repeatability – four-time. Discount area – 5,1 m². Attendance was carried out according to common growing technology for right-bank Ukrainian forest-steppe.

Results. During the vegetative period of parsnip at different sowing terms accumulation of crude mass of roots and leaves was irregular. The most intense growth of leaves was in August. The most intense growth of roots was in August with average daily increase of crude mass of roots from 3,5 grams (sowing period – I decade of April) to 2,9 grams (sowing period – III decade of April) and in September with average daily increase of crude mass of roots from 2,7 grams (sowing period – I decade of May) to 1,7 grams (sowing period – I decade of June).

The results of investigation showed that influence of sowing terms of biometrical indexes was not dissimilar. The root was the longest 28,6 cm if sowing was carried out in the first decade of April (2,5 cm longer than control) and the shortest – 17,9 cm if sowing was carried out in the first decade of June (8,2 cm longer than control). Root diameter was the biggest 9,5 cm (sowing period – I decade of April) and the least – 4,1 cm (sowing period – I decade of June). The length of the

crown was the biggest (65,4) if sowing was carried out in the first decade of April, difference with control was slight. The maximum quantity of leaves (9,1 pieces) (sowing period – I decade of April) and the minimum quantity – 5,6 pieces (sowing period – I decade of June).

Enumerations which were carried on the October, 1 showed that surface area of leaves decrease in comparison with the previous date of enumeration (September, 15). It was the biggest 47200 m²/hectare (sowing period – I decade of April) and 46700 m²/hectare (sowing period – II decade of April – control). As of October, 1 the surface area of leaves continued to increase in comparison with the previous date of enumeration (if sowing was carried out in the first decade June).

Conclusion. The results of research showed that maximum crop productivity depends on growing technologies and sowing periods which will provide forming the optimal area of leaves and duration of photosynthetic activity. Later sowing periods of parsnip cause reducing of growth and plant development. In turn it directly influences on increasing of root weight. During the investigation (2015–2016) the biggest mass of root (233 grams) was received if sowing was carried out in the first decade of April and the least (61 grams) was received if sowing was carried out in the first decade of June. The most intense increasing of mass of leaves was in August. As of September, 1 the biggest surface area of leaves was 66400–44400 m²/hectare (if sowing was carried out from I decade of April till II decade of May). As of September, 15 the biggest surface area of leaves was 38400 m²/hectare (sowing period – III decade of May). As of October, 1 the biggest surface area of leaves was 337000 m²/hectare (sowing period – I decade of June). It was detected direct relation between the surface area of leaves and the mass of roots under different sowing periods ($r=0,95$).