## *Annotation*

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***Peculiarities of symbiotic productivity of kidney beans varieties depending on depth of seed placement in the conditions of Right-Bank Forest-Steppe***

*The article reviews peculiarities of forming symbiotic productivity of kidney beans varieties used for grain-growing purposes. The dynamics of quantity and accumulation of nodule mass by plants of different varieties at different depth of seed placement were shown. It was found that the quantity of nodules was increasing to the flowering phase of kidney bean plants, and during the period of seed formation symbiosis activity was decreasing both in quantitative and weight measurements. Studies showed that crops of kidney beans in accordance with the variety and the depth of seed placement by the time of full flowering have formed the total number of nodules from 22.7 to 28.8, and the active ones from 19.7 to 24.7 on the root system of plants. The largest total number of nodules was found in Bukovynka variety at the sowing depth of 4–5 cm, while the smallest indicator was identified in Schedra variety at the sowing depth of 2–3 cm. This tendency was observed in all studied varieties and the best conditions were created at the sowing depth of 4–5cm. The reason for this is decreasing reserves of productive moisture in the upper layer of the soil.*

*The accumulation of nodule mass was analyzed during all periods of growth and development of kidney beans crops. Thus, during the period of flowering the studied crops of kidney beans in accordance with the variety and the depth of seed placement have accumulated nodule weight from 247.3 to 311.2 mg per plant where the mass of active nodules ranges between 164.4 and 225.2 mg per plant. The highest nodule weight was found in crops of Bukovynka variety at the sowing depth of 6–7 cm (225.2 mg per plant) while at the sowing depth of 2–3 cm this figure decreased to 291.5 mg per plant which is 19.7 mg per plant less. Also it was noted that at the beginning of the vegetation bigger mass of nodules was formed by crops of beans at the sowing depth of 2–3 cm and later at the sowing depth of 6–7 cm.*

*Indicators of the total and active symbiotic potentials were calculated in accordance with the studied factors in the conditions of the Right-Bank Forest-Steppe. The largest symbiotic productivity was found in crops of Bukovynka variety which at the sowing depth of 4–5 cm have formed the total symbiotic potential within the limits of 4.34 thousand kg per day/ha and the active symbiotic potential on the level of 2.41 thousand kg per day/ha. The lowest total symbiotic potential in the research – 3.65 thousand kg per day/ha, we have identified in crops of Schedra variety at the sowing depth of 2–3 cm. It was established that in accordance with the depth of seed placement the correlation between the total and the active potentials differed.*

*Therefore, in the conditions of Right-Bank Forest-Steppe the highest symbiotic productivity was discovered in crops of Bukovynka variety which at the sowing depth of 4–5 cm have formed the total symbiotic potential in number of 4.34 thousand kg per day/ha and the active symbiotic potential on the level of 2.41 thousand kg per day/ha.*

***Key words:*** *kidney bean, variety, phases of growth and development, symbiotic productivity.*