DEPENDENCE OF WATER EXCHANGE OFARTICHOKE PRICKLY ON ITS STANDING THICKNESS

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As the authors believe, in a variant where the plants were placed according to the scheme of 90x40x2, and watering was carried out according to the scheme 2-5-2 between the intensity of transpiration and many physiological-biochemical processes of artichoke prickly, a positive close correlation is observed.
On the basis of the obtained results in order to obtain a greater biomass, the authors consider it expedient to grow plants of artichoke prickly in accordance with the layout of 90x40x2 with a density of 45.5 thousand hectares per hectare when watering is according to the scheme 2-5-2. All this will give us reason to believe that by ascertaining a certain density of standing of an artichoke prickly per ha, we largely influence its water regime, which in turn depends on the photosynthetic activity and productivity (biomass) of the plant as a whole.

Objective. It should be noted that the intensity of many enzymatic processes, photosynthesis and respiration depends on the water content of the cells, which, on the whole, ensure the growth and development of plants. Hence, natural attempts to study the indices of water exchange of artichoke prickly for the scientific substantiation of the studied density and plant layouts are natural.

Methods of research: the experiments were carried out in soils of typical sierozem of the training and research station of the Tashkent State Agrarian University from 2012 to 2017. We studied two schemes for placing an artichoke prickly: 90-40-2 with the leaving of two plants in the nest, allowing to obtain a density of plant standing of 45.5 thousand per hectare (actually received 45.1 thousand/ha); 90-20-2 also with the leaving two plants in the nest, but already with the density of standing plants 91 thousand hectares (actually 87.3 thousand/ha). Fertilizers were applied in the following doses: nitrogen-250, phosphorus-180 and potassium-125 kg per hectare, in terms of the active principle. In the leaves of the artichoke prickly, free (more accessible to plants) and associated (less accessible) water fractions were determined according to the method of N.A. Guseva (1966).

Results of the study: as a rule, in plants that grow intensively, there is always a greater content of free water and vice versa. Under the conditions of our experiments, beginning with the budding phase, plants in crops with a density of 45.5 thousand hectares were intensively overtaken by plant growth in crops with a density of 91.0 thousand hectares/ha. The difference in the content of free water, amounting to 2.34% in the period of 3-4 true leaves, reaches a maximum value of 3.43 during the period of fruit formation. Then it drops sharply to 0.83% at the beginning of the ripening of the seeds, i.e., when the growth processes are sharply reduced. Consequently, in artichoke prickly there is a close relationship between the content of free water in cells and the intensity of growth. An equally important indicator, reflecting the state

of plants, is the intensity of transpiration. Analysis of the obtained results shows that the intensity of transpiration of leaves of artichoke prickly grows to 11 hours, and then a sharp decrease is observed. This is due to the fact that as a result of a decrease in the supply of the plant, as a whole, with water by the roots, which shows that the water consumption of the leaves exceeds its arrival, i.e., water intake by roots from the soil. After lowering the temperature of both air and soil for a short time after 17 hours, a slight increase in the free water content and, correspondingly, an increase in the intensity of transpiration is observed. After this, due to a decrease in the ambient temperature, there is a marked decrease in the intensity of transpiration by plants. At the same time, a higher intensity of transpiration was observed in plants on crops with a density of 45.5 thousand hectares /ha compared to a density of 91.0 thousand/ha i.e., plants with the first option spends more water on evaporation than plants from the second option.

This is of no small importance in conditions of high ambient temperatures and especially for plants where the main limiting factor for the cultivation of artichoke prickly is the availability of water resources. These data indicate a close relationship between the intensity of transpiration and the vital activity of the artichoke prickly, which is subject to data on the accumulation of dry mass by the plant. Differences between the variants studied in the accumulation of dry mass of leaves and fruit organisms are especially clearly revealed. This is indicated by the ratio of the mass of generative organs to the mass of the vegetative organs. If in June this indicator was 0.024 in the first variant and 0.019 in the second variant, in September, respectively, they were 0.87 and 0.93g.

Conclusions: all this will give us grounds to believe that by ascertaining a certain density of standing of an artichoke prickly per ha, we largely influence its water regime, on which photosynthetic (activity and productivity (biomass) of the plant as a whole depends).