

OPTIMIZATION OF THE FEEDING AREA AND PLANTING DENSITY OF HARD-STEMMED GARLIC IN MOLDOVA TO INCREASE ITS PRODUCTIVITY

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To increase production and achieve high economic efficiency, we initiated a research to improve the technology for growing winter garlic from single-clove bulb-lets using a direct-sowing method, with a particular emphasis on increasing yield per unit area. This study examines the influence of growing areas on plant growth and development, demonstrating the yield and size of developed bulbs, their commercial qualities, and their quantity.

The materials for the research were single-clove bulbs obtained from aerial bulb-lets, when sowing them in open ground, from the bred variety “Berechet”, obtained by selection from a local population of bolting garlic.

The mature single-clove bulbs were dug up in two replicates and calibrated using sieves with separation into four fractions: less than 1.0 cm; 1.0-1.4 cm; 1.5-1.9 cm and 2.0 cm and more; with the corresponding average weight: 0.7 g; 1.75 g; 3.0 g and 6.0 g. After conducting the inventory, the single-clove bulbs were returned to their previous location, planting them according to diameter and weight.

The planting was carried out at the end of June at a depth of 6-8 cm. The following plant density options were used in the research scheme: (286 thousand pcs/ha (V_1), 357 thousand pcs/ha (V_2), 476 thousand pcs/ha (V_3), 714 thousand pcs/ha (V_4) - control and 952 thousand pcs/ha (V_5)). The feeding area of one plant according to the plant density was (350 cm² (V_1), 280 cm² (V_2), 210 cm² (V_3), 140 cm² (V_4) - control and 105 cm² (V_5)).

The experiments were carried out on typical chernozem that meets the requirements for growing vegetable crops, in compliance with the generally accepted rules of crop rotation without the use of irrigation. A double-row, tape-planting scheme (20 + 50 cm) was used, with single-clove bulbs spaced at 3 cm, 4 cm, 6 cm, 8 cm, and 10 cm per row. The plot area was 2.74 cm². The experiment was replicated four times.

Conclusions: The optimal plant density for obtaining high yields of commercial garlic from aerial bulblets is 300,000-357,000 bulbs/ha, which ensures the best results in producing high-quality commercial bulbs. For seed production, a denser sowing of aerial bulblets is recommended, at approximately 450,000-500,000 bulbs/ha, which ensures the maximum yield of standard bulbs. Thickening the bulblets in a row above the specified planting standards leads to a decrease in bulb size.

Keywords: Bolting garlic, single-clove bulbs, size and weight, planting density, yield and marketability.

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