

Annotation

Ushkarenko V.A, Lavrenko S.O., Maksimov M.V.

Economic feasibility of using different technological methods of growing lentils in the conditions of South Steppe of Ukraine

Primary objectives of studies on the technology of growing lentils are ways to use effectively available natural (unregulated) and artificial (regulated) factors to increase yield for varieties that have been created in recent years and potential opportunities which are not enough studied. Solving these problems is possible, subject to special investigations. Studies on improving elements of technology of growing lentils were carried out by layout of four-factor field experiment on the territory of the agricultural cooperative "Radianska zemlia", Belozersky district, Kherson region. In field experiments the following factors and their variants were studied: Factor A – basic soil tillage: moldboard one to the depth of 20-22 cm; moldboard tillage to the depth of 28-30 cm; Factor B – nutrient status: without fertilizers; $N_{45}P_{45}$; $N_{90}P_{90}$; Factor C – plant density (million/ha): 2,0; 2,5; 3,0; Factor D – moisture conditions: without irrigation, under irrigation.

To determine efficiency and reasonability of lentil cultivation in southern steppe of Ukraine flow process charts were drawn up for each variant and calculations were made at prices that were formed at the end of 2015. We have done economic calculations of main indicators, namely: total cultivation costs, grain cost price, gross profit and profitability level.

As a result of these calculations it was determined that the most expedient from the economic point of view (grain cost price of 7990 UAH/t, gross profit of 22969 UAH/ha, profitability level of 213%) is lentil cultivation under non-irrigation conditions applying moldboard soil tillage to the depth of 28-30 cm, mineral fertilizers in the dose of $N_{45}P_{45}$ and plant density of 2.0 million/ha. Under irrigation conditions to obtain the cost price of lentil grain at the level of 6880 UAH/t, gross profit of 44947 UAH/ha and profitability of 264%, growing crops by means of plowing to the depth of 28-30 cm, applying mineral fertilizers in the dose of $N_{45}P_{45}$ and plant density of 2.5 million plants/ha are economically effective.

Key words: *lentil, soil tillage, fertilizers, moisture, plant density, economic efficiency.*