

**USE OF MICROFERTILIZERS AND BACTERIAL PREPARATIONS AS
ELEMENTS OF NUTRITION OPTIMIZATION AND ENVIRONMENTAL
PROTECTION UNDER DIFFERENT SYSTEMS OF OIL FLAX
GROWING**

Основною метою проведення наших досліджень було вивчення впливу різних систем вирощування, обробки рослинних залишків азотними добривами і біодеструкторами стерні, а також спільне використання бактеріальних препаратів і мікродобрив на показники формування висоти рослин і врожайності льону олійного за умов Південного Степу України.

Ключові слова: *льон, системи вирощування, деструктор стерні, біопрепарат, мікродобрива, висота рослин, урожайність, економічні показники.*

The main research was to study different systems of cultivation, packaging of plant residues with nitrogen fertilizers and stubble biodestructors, as well as the joint use of bacterial preparations and microfertilizers on the formation of tall plants and the popularity of oilseed flax in the southern steppe of Ukraine.

Keywords: *flax, cultivation systems, stubble destructor, biological product, microfertilizers, plant height, yield, economic indicators.*

Field experiments were conducted in the conditions of the educational-scientific and practical center of the Mykolaiv National Agrarian University of the Southern Steppe zone of Ukraine. The soil of the experimental field is represented by the chernozem of the southern medium-loamy slightly saline, with a deep level of groundwater. The humus horizon is dark gray with a chestnut tinge,

characterized by salinity and a narrow ratio of Ca^{2+} * and Mg^{2+} (2.5-2.8). Characterized by high viscosity, lumpy and loose. It has a significant number of remnants of the roots of cultivated plants and weeds. The arable horizon is in the range of 0-30 cm. The transitional horizon has a coarse-grained or lumpy-prismatic structure. Under the humus horizon lies a carbonate iluvium. In addition, when drying the soil has a high density, low permeability prone to swelling. The lowest moisture content of 0-70 cm of the soil layer is -22.0%, wilting moisture -9.7% by weight of dry soil, density -1.40 g / cm³.

The predecessor of oil flax in the experiment is winter wheat. The experiments were performed with a variety of flax oil Orpheus. The background was a mineral fertilizer with a dose of N34R34K34. The scheme of the experiment included the following options: Factor A (Growing Systems):

- Traditional (Control);
- Mulching;
- Preservative.

Factor B (Variants of destruction of plant residues):

- Without the use of nitrogen fertilizers and stubble destructor (Control);
- Using 100 kg / ha of ammonium nitrate;
- Using EcoStern (2.5 l / ha) + 100 kg / ha of ammonium nitrate. Factor C

(Microfertilizers and bacterial preparations):

K - Water treatment 300 l / ha (Control);

B - Water treatment 300 l / ha + Biocomplex-BTU-r (0.7 l / ha) + urea (5 kg / ha);

Kv - Water treatment 300 l / ha + system of microfertilizers Quantum (complex of chelated fertilizers Quantum - TECHNICAL (2.0 l / ha)) + functional microfertilizer Quantum - Akvasil (2.0 l / ha) + urea (5 kg / ha);

B + Kv - Water treatment 300 l / ha + Biocomplex-BTU-r (0.7 l / ha) + system of microfertilizers Quantum (complex chelated fertilizers Quantum - TECHNICAL (2.0 l / ha) + functional microfertilizer Quantum - Aquasil (2.0 l / ha)) + urea (5 kg / ha).

In the first half of the growing season, with sufficient soil moisture, the development phases took place without deviations, the plants formed a relatively high and healthy seed yield. The root system was relatively well developed and grew deep. In the process of scientific research, phenological observations were made on the biometric indicators of the aboveground part of oilseed flax culture. Higher indicators of the length of the aboveground part of plants (50-54 cm) were observed in the variant with a preservative treatment system with integrated use of biological product Biocomplex-BTU-r and microfertilizer system Quantum against the background of treatment of plant residues with stubble destroyer EcoStern with ammonium nitrate.

When using a mulching and traditional treatment system, this figure decreased. Without the use of destructors, stubble plants of oilseed flax had the lowest height - from 35 to 50 cm, depending on the year of research. In the control variant (in the traditional system of cultivation without the use of nitrogen fertilizers and stubble destructor, as well as without the use of microfertilizers and bacterial preparations) and a similar variant in the mulching system of cultivation, they were the lowest (35-39 cm). Preservation system for growing flax oil on the option without the use of nitrogen fertilizers and stubble destructor formed taller plants (40-46 cm). To date, using a conservation system for growing crops in field crop rotation on the southern chernozem in arid climates, agricultural enterprises of various forms of ownership, it is possible to obtain a relatively high biological yield of seeds (1.86-1.90 t / ha and more), on against the background of mineral nutrition N34R34K34, with the treatment of plant residues of winter wheat as a precursor to the bacterial preparation of the stubble destroyer EcoStern at the rate of 2-2.5 l / ha and simultaneous application of ammonium nitrate 100 kg / ha in physical weight (working solution 300 l / ha) when using as a fertilizer for vegetative plants in the "Christmas tree" phase of the bacterial preparation Biocomplex-BTU-r and the system of microfertilizers Quantum with the simultaneous application of 5 kg / ha of urea.

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IMPACT OF THE DIGITAL ECONOMY ON ACCOUNTING (ВПЛИВ ЦИФРОВОЇ ЕКОНОМІКИ НА СТАН БУХГАЛТЕРСЬКОГО ОБЛІКУ)

У статті подано умови про цифрову економіку, що зростає із