UDC 633.2:633.24:631.8

N. DOBRIANSKA
Institute of Agriculture of Carpathian Region of NAAS

GROWING OF TIMOTHY GRASS WITH USING OF MICROBIAL PREPARATIONS AT CONDITIONS OF PRECARPATHIANS

Phleum pratense L. – a perennial herb of the species of Phleum family Poaceae. It is one of the most common grasses of meadow and field grass-sowing in Polissya and Forest-Steppe zones of the country. The green mass and hay of timothy well eaten by animals. Due to its high yield and nutritive value of hay is spread quickly in areas where grown red clover.

The size of the harvest depends on many factors, including providing crops with nutrients that is one of the main factors. Already now must actively seek ways to intensify agricultural production for significant reduction in energy costs. Recently, in plant growing is widely used a large number of plant growth regulators, biological agents and so on. An important aspect of microbial agents is to increase plant resistance to adverse environmental factors – high and low temperatures, lack of moisture, phytotoxic action of pesticides, damaging by pests and diseases – which ultimately contributes to a significant increase productivity and improve product quality.

The reaction of timothy on the effectiveness of different options for the use of mineral fertilizers and feasibility its complex integrating with microbial agents and growth regulators on the background of natural fertility in terms of Precarpathia were studied during 2011–2015 pp. Field experiments were laid out an experimental basis of the Institute of Agriculture of Carpathian Region of NAAS (zone Precarpathians) in 2011 with spring sowing under cover of oats for green feed with lower on 30 % rate of sowing on sod-podzolic surface gleyed soils.

Three ways to use bio-fertilizers were studied. The first method was to treatment by bacteria of seed with preparation diazofit (0,15 g on hectare rate of seed), the second – in crop spraying with solution of the drug humisol (240–360 ml + 6–9 l of water on 100 m^2) be carried out in a phase of outlet in tube of timothy; third – complex application of the drug solution through seed treatment and one-time spraying. Trustworthy increases of yield was obtained by all methods use of bacterial and mineral fertilizers. The study was conducted with variety of Phleum pratense Pidhirianka.

Mineral and bacterial fertilizers assist to increase of forage yield and seed weight of Phleum pratense L. The largest increase of yield in the fourth year of use (the fifth year of life) provided the variants 3 (humisol + diazofit), 6 ($N_{45}R_{60}K_{60}$ + humisol + diazofit) and 9 ($N_{30}R_{30}K_{30}$ + humisol + diazofit) respectively for the harvest of green mass of 84, 95 and 91 %; on dry matter – 194, 233 and 226 %. The highest seed yield gains secured variants with application of mineral fertilizers and bacterial – $N_{45}R_{60}K_{60}$ + humisol + diazofit (№ 6) and $N_{30}R_{30}K_{30}$ + humisol + diazofit (№ 9) respectively – 192 and 187 % or on 0,23 and 0,22 t/ha. Noteworthy the variants 5 ($N_{45}R_{60}K_{60}$ + humisol) and 8 ($N_{30}R_{30}K_{30}$ + humisol), which is providing seed yield increase respectively 133 and 146 %. Application of mineral and bacterial fertilizer has a positive effect on the chemical composition of plants Phleum pratense L.

The most profitable economically were variants 3 (humisol + diazofit) and 6 ($N_{45}R_{60}K_{60}$ + humisol + diazofit), which provided the seed yield of 0,26 t/ha and 0,35 t/ha. These areas received their the lowest cost price, the highest level of profitability and the largest net income from 1 hectare seed of Phleum pratense L. Therefore, biological preparations and growth regulators can be an element of growing technology of Phleum pratense in the area Precarpathians of Ukraine, which will promotes to increase the yield of variety and reducing of the chemical load on the environment.