пуляцій до складних схрещувань, використання експериментального мутагенезу і резистентних доборів різних типів складності.

За цей період створено і впроваджено у виробництво 40 сортів гречки.

Наукова робота над культурою проводиться за тематикою наукових досліджень: «Науково-теоретичне обґрунтування методів селекції і насінництва гречки» за номером державної реєстрації 0119U002417 від 21.05.2019 року.

Аналіз реєстру сортів рослин України придатних до поширення станом на 30 серпня 2023 року свідчить про те, що із 30 сортів гречки їстівної занесених у нього 20% – селекція НДІКК ім. О. Алексеєвої ЗВО «ПДУ» і один сорт гречки татарської 'Калина'.

Отже, НДІКК ім. О. Алексеєвої ЗВО «ПДУ», як заявник і власник сортів гречки є фундаментальною базою для проведення лабораторних занять, навчальної і виробничої практики здобувачами вищої освіти з різних навчальних дисциплін, а також місцем виконання бакалаврських, магістерських, аспірантських і докторських досліджень.

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INFLUENCE OF TECHNOLOGICAL GROWING MEASURES ON FEED VALUE AND NUTRITION OF ONE-YEAR BEANS- EREAL GRASS MIXTURES

In order to obtain fodder with a balanced sugar-protein ratio, as well as to improve nitrogen nutrition of crops and preserve soil fertility, many scientists suggest growing mixed crops of leguminous and cereal crops. Therefore, the issue of studying the specifics of the reaction of plants of leguminous and cereal crops to the conditions of their cultivation, identifying the regularities of the formation of fodder agrophytocenoses and developing effective methods of managing their productivity (selection of grass species in annual grass mixtures, setting norms and doses of mineral fertilizers, etc.

According to Ukrainian scientists, the green mass of spring triticale is characterized by a high digestibility of organic matter: 82.2% in the tuber phase, 77.1% in the earing phase. At the same time, the digestibility of crude protein was equal to 80.6 and 77.1%, respectively, and fiber – 90.2 and 88.1%, respectively. The above data indicate a rather slow lignification of spring triticale plants. This allows you to use its green mass for fodder purposes for 11–13 days without a sharp decrease in its quality.

The forage productivity of sown phytocenoses is significantly affected by the application of mineral fertilizers. Thus, increasing the norm of mineral fertilizers from $N_{60}P_{60}К_{60}$ to $N_{90}P_{90}К_{90}$ contributed to a significant increase in the yield of green mass of mixtures of spring triticale with legumes and spring triticale with cabbage crops.

The purpose of the research is to study the influence of mineral fertilizer rates and the ratio of spring triticale and spring pea plants on the feed productivity of mixtures.

Field experiments were conducted during 2020–2021 in the fields of the «Shevchenkivske» PAE in the Kyiv-Sviatoshyn district of the Kyiv region on sod-podzolic light loam soil with a humus content of 1.5–2.4%, In the experiments, varieties of annual crops were studied: spring triticale of the Bulat Kharkiv variety, seed peas of the Nadiya Podillia variety. Agrotechnics of growing one-year legume-cereal mixture of spring crops is generally accepted for the right-bank forest-steppe. The seeding rate of field pea and spring triticale in single-species crops, respectively, is 2.0 and 5.0 million/ha of similar seeds. Mineral fertilizers were applied in the form of nitroammophoska and lime nitrate for pre-sowing cultivation.

According to the results of our research, it was established that the collection of fodder units from single-species crops of spring triticale in the control variant was 4.25 t/ha, while with the introduction of N_{30} and N_{60}, it was 4.91 and 4.93 t/ha, respectively. The highest output of fodder units was obtained with the application of complete mineral fertilizer at the rate of $N_{30}P_{45}K_{45}$ – 5.51 t/ha.

When sowing spring triticale and seed pea in the mixture, the highest yield of fodder units (4.00–4.52 t/ha) was obtained when sowing the specified components of the mixture with sowing rates of 60 : 40%. The difference between the fertilizer options did not exceed 0.5 t/ha. The maximum output of fodder units from one hectare (4.52 t/ha) was obtained by applying only nitrogen fertilizers in a dose of N_{60}.

The output of crude protein, as well as feed units, depended significantly on the level of fertilization and the rates of sowing components. When spring triticale was sown in a single-species crop, the yield of digestible protein was 0.38–0.57 t/ha. The yield of digestible protein, depending on the norms of mineral fertilizers, was 0.55–0.80 t/ha when sowing peas in a single-species crop.

In general, the yield of digestible protein was 0.66–0.70 t/ha when sowing cereal and leguminous components with sowing rates of 50 : 50 and 60 : 40% on variants with the introduction of only nitrogen fertilizers.

The feed value of plant biomass of mixtures of spring triticale with field peas is determined by the supply of the feed unit with digestible protein. Increasing the doses of mineral fertilizers helps to increase the yield of digestible protein and improve the supply of it to the feedlot. The highest efficiency of nitrogen fertilizers was noted in single-species sowing of field peas, where the yield of digestible protein was 0.70–0.80 t/ha with a content of 176–191 g in one fodder unit.

The availability of one fodder unit of fodder obtained from single-species sowing of spring triticale on unfertilized plots was 90 g, for the application of nitrogen fertilizers – 95–104 g, for the application of complete mineral fertilizer in the norm $N_{30}P_{45}K_{45}$ – 104 g. That is, for sowing triticale in a single-species crop, the availability digestible protein of the fodder unit of its green mass only approached the level of the zootechnical norm, however, it did not meet it.

Feed obtained from crops of leguminous-cereal mixtures is characterized by higher nutrition due to the better supply of the feed unit with digestible protein, which is also confirmed by the results of our research. We established that when triticale was sown in a mixture with peas on unfertilized areas, the collection of digestible protein increased by 12.7–28.1%, compared to single-species cereal crops, therefore, accordingly, the supply of digestible protein to the fodder unit also increased and amounted to 125–171 g.

When cereal and leguminous components were sown with half the sowing rates, the supply of digestible protein per fodder unit, even in the unfertilized version, corresponded to the zootechnical norm and amounted to 127 g. With the introduction of nitrogen fertilizers in doses of N_{30} and N_{60}, it increased to 155 and 158 g, respectively. The difference, as you can see, was insignificant. With the application of complete mineral fertilizer, the supply of the fodder unit was 169 g. With the sowing of peas at the rate of 30% and the application of $N_{30}P_{45}K_{45}$, the supply of the feed unit with digestible protein was 165 g. For growing on the same agro background, but sowing the leguminous component at the rate of 40%, the value of this of the indicator were the highest and amounted to 171 g. In addition, it was established that when sowing cereal and legume components with rates of, respectively, 50 : 50 and 60 : 40%, the application of different doses of nitrogen fertilizers did not have a significant effect on the supply of digestible protein to the fodder unit.

The best provision of the feed unit with digestible protein – at the level of 171 g, was noted in the variant where triticale and peas were sown with sowing rates of 60 : 40% and full mineral fertilizer was applied at the rate of $N_{30}P_{45}K_{45}$. The obtained data should be taken into account when creating highly productive of one-year beans-ereal grass mixtures.

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THE FORMATION OF ANTHOCYAN COMPLEX IN STRAWBERRY FRUITS DEPENDS ON THE TERMS OF HARVESTING AND FERTILIZER

The garden strawberry is one of the most common berry crops in the world. Its berries contain many useful substances that have therapeutic and preventive properties. Among the most valuable components of the chemical composition, polyphenols play a special role. At the same time, a component of phenolic substances are anthocyanins, which determine the saturation and brightness of the color of berries and processed products (juices, compotes, wine, etc.). A healthy person needs at least 200 mg of these substances per day, and in case of illness – at least 300 mg. They do not accumulate in the body, so they are quickly included in the metabolism and removed from it. In terms of their biological effect, anthocyanins are similar to vitamin P. It is known that anthocyanins contribute to the strengthening of capillary walls and are powerful antioxidants capable of binding free radicals and preventing premature aging of cells in the human body. Currently, the concentrate of these substances is allowed as food additives (E163) in various functional food products.

Strawberry berry is considered a natural antioxidant. Regular consumption of strawberries helps to slow down the aging process. Strawberries have an excellent tonic effect, so they have long been recommended for use in vitamin deficiency, anemia, high blood pressure, and atherosclerosis. Eating