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INFLUENCE OF TECHNOLOGICAL TECHNIQUES OF GROWING ON NUTRITIONAL GREEN MASS OF WINTER INTERMEDIATES CULTURES

ВПЛИВ ТЕХНОЛОГІЧНИХ ПРИЙОМІВ ВИРОЩУВАННЯ НА ПОЖИНІСТЬ ЗЕЛЕНОЇ МАСИ ОЗИМИХ ПРОМІЖНИХ КУЛЬТУР

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***Annotation**. This article considers the influence of sowing dates, species and varietal composition of winter intermediate crops on the formation of green fodder nutrients. It is established that before the onset of the earing phase, the most nutritious green mass is formed by wheat crops. The vegetative mass of triticale of winter green fodder occupies an intermediate position between rye and wheat. The most nutritious is the green mass of winter triticale varieties AD 52, ADM 9.*

***Key words**: winter intermediate crops, green fodder, nutrition.*

Introduction.

One of the main problems of agro-industrial production in Ukraine is to increase the production of livestock products. As a result, the development of meat and dairy farming, which provides the food market with meat, milk and processed products is becoming increasingly important [4]. However, the production of livestock products is directly dependent on the use of balanced feed about 90% of which is obtained from arable land [1]. In such conditions, the conveyor production of green fodder on arable land, which is organized on the basis of the use of different species, varieties and hybrids of annual and perennial crops and their mixtures, becomes important. Moreover, the development of new solutions for the conveyor production of green fodder on arable land involves their sustainable production based on agroecological models of fodder production, which is based on the efficient use of agrolandscape with optimal structure of main and intermediate crops, as well as cultivated hayfields, pastures and balanced the ratio of livestock and crop production with the use of energy-saving agricultural technologies

An effective measure to increase green fodder (up to 20-25%) and increase the use of arable land is to grow post-harvest intermediate crops, such as winter triticale,

which today is represented in the Ukrainian market by a significant number of varieties [2, 5].

Along with increasing the yield of fodder crops, an important task of fodder production is to obtain high quality fodder, which largely depends on the hydrothermal growing conditions, applied agro-techniques, the phase of harvesting plants and biological characteristics of the species and variety [83, 86]. In this regard, the purpose of the researchwas to analyze changes in the nutritional value of winter triticale plants by phenological phases of their growth and development under the influence of the interaction of factors sowing dates and varieties.

Materials and methods of research.

Field research was conducted in the research field of the Department of Forage Production, Land Reclamation and Meteorology of the NULES of Ukraine "Agronomic Research Station" on typical low-humus chernozems. The object of research were winter crops: wheat (control), rye (control), triticale: AD 3/5, AD 44, ADM 9, Poliske 29, ADM 11, AD 52, sown in 5 calendar terms: August 25, 5 , 15, 25 September and 5 October. The size of the sowing area is 36 m2, the accounting area is 25 m2. Predecessor is corn for silage. The humus content in the arable layer is 4,34-4,68%, pH – 6,8-7,3.

Research results and their discussion.

One of the most important problems in creating a strong feed base is to ensure the optimal need of animals in feed protein. In case of insufficient amount of protein in the diet, animals do not fully use the fats and carbohydrates contained in the feed, which leads to significant overspending and increase the cost of production.

In addition, prolonged protein starvation disrupts the normal physiological functions of the body, which not only reduces productivity, but also impairs the breed qualities of animals [3]. First of all, the overuse of feed per unit of livestock production is due to the insufficient content digestible proteinin the feed unit. One of our tasks was to study the influence of sowing time and biological features of the variety on the relationship between digestible protein and feed unit.

According to the results of research, the supply of the feed unit with digestible protein under the influence of the studied factors changed.

According to the research results, the highest supply of feed unit with digestible protein in all experimental variants was observed in the tubing phase: in rye - 144-153, wheat - 142-149, triticale 137-154 g / feed unit. It was found that the content of digestible protein, and hence the supply of feed per unit in all crops increases in the direction from early to late sowing dates. Thus, the lower yield on October crops was to some extent offset by the higher value of feed mass. The same pattern was observed in rye and wheat crops.

Before the onset of the earing phase (Table), due to the intensive growth of the vegetative mass and the phenomenon of "dilution" there was a decrease in the protein content in the green mass of all winter crops.

As a result, this led to a slight decrease in the supply of feed unit protein: in rye - up to 123-130, wheat - 128-133, triticale - 114-132 g / feed unit. As during tubing, in the direction from early to late sowing dates there was a tendency to increase the forage value of green mass. In most cases, the biological characteristics of crops and

varieties, different in the rate of growth of vegetative mass, affected the quality of feed by changing the ratio between the elements of the structure of the vegetative mass of plants.It was found that during earing a higher supply of fodder unit with protein, regardless of the time of sowing is characteristic of varieties ADM 9 and AD 52 - respectively, 120-127 and 126-132 g / feed units. During all sowing periods, the fodder unit of green mass of ADM 11 variety - 114-121 g / fodder unit was the least provided with digestible protein.

Provision of feed unit with digestible protein depending on technological factors of cultivation in the earing phase, g / feed. units.

Type, variety	Sowing period					Average	The difference to		
	25.08.	5.09.	15.09.	25.09.	05.10.		average	wheat	rye
Rye (control)	123	124	128	129	130	127	2,26	-3,57	St
Wheat (control)	128	128	130	132	133	130	5,83	St	3,57
AD 3/5	119	123	123	125	125	123	-1,50	-7,33	-3,75
AD 44	117	121	123	125	125	122	-2,15	-7,98	-4,41
ADM 9	120	124	125	126	127	124	-0,09	-5,92	-2,35
Polisky 29	118	118	122	126	127	122	-2,15	-7,98	-4,40
ADM 11	114	116	117	118	121	117	-7,13	-12,96	-9,39
AD 52	126	129	130	131	132	129	4,94	-0,89	2,68
Average	120	123	125	126	128	124	-	-	-
The difference to the average	-4	-2	0	2	3	-	-	-	-

Before the onset of the flowering phase, the supply of feed unit with digestible protein decreased sharply: in rye - up to 79-86, wheat - up to 90-97, triticale - 80-100 g / feed unit. The decrease in the vegetative mass of nitrogenous substances was due to the intensive death of the leaves of the lower tiers. The highest supply of fodder unit during flowering is characteristic of varieties Polisky 29 and AD 52, a feature of which is the prolonged functioning of the leaf apparatus. As in previous phases of development, the lowest nutritional value was characterized by ADM 11 - 80-89 g / feed unit.

Conclusions.

The cultivation of winter intermediate crops, including triticale, allows to obtain early green fodder in which the security of the fodder unit meets zootechnical standards. Before the onset of the earingphase, the most nutritious green mass is formed by wheat crops. The vegetative mass of triticale of winter nutritious green fodder occupies an intermediate position between rye and wheat. The most nutritious is the green mass of winter triticale varieties AD 52, ADM 9.

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Анотація. *В даній статті розглянуто вплив строків сівби та видового і сортового складу озимих проміжних культур на формування поживності зеленого корму. Встановлено, що до настання фази колосіння найбільш поживну зелену масу формують посіви пшениці. Вегетативна маса тритикале озимого за поживністю зеленого корму займає проміжне положення між житом та пшеницею. Найбільш поживною є зелена маса сортів тритикале озимого АД 52, АДМ 9.*

Ключові слова: *озимі проміжні культури, зелений корм, поживність.*

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