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THE INFLUENCE OF THE TIMING AND NORMS OF SOWING WINTER RYE ON THE CYCLES OF GROWTH AND DEVELOPMENT

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Abstract
The article describes phenological observations carried out during the periods of germination, tillering, tube formation, heading, flowering and ripening of autumn rye.
The development time of agricultural crops, including rye, depends on the biological characteristics of the plant, as well as the timing of sowing, the geographical and weather conditions of the region chosen for cultivation, the type and type of soil, and the level of provision. with nutrients and may vary depending on the agrotechnical measures used.

Keywords: shoots, tillering, tube formation, heading, flowering, ripening, vegetation, biological features, root node.

Introduction

In developed countries, which occupy leading positions in the production of rye in the world, when determining the influence of the timing of sowing seeds on periods of development, it is necessary to take into account advanced agrotechnical measures that take into account the biological and morphological characteristics of the varieties and the soil climatic conditions of the region, and the cultivation of grain crops with a high level of quality. Holda, who has taken this upon herself, considers one of the pressing issues today to be conducting research on raising livestock for fattening and studying the biological and morphological characteristics of newly created varieties of rye that meet the requirements of the food industry for quality jihat, and, depending on this, establishing optimal timing for sowing seeds by region and standards for sowing seeds by timing, studying the demand for mineral fertilizers and water [1].

The procedure and method of conducting the experiment.

Research work was carried out in the period 2016–2019 in the conditions of light snowy soils of the Andijan scientific research station of the Research Institute of Breeding, Seed and Cotton Cultivation Technology (PSUEAITI), where the influence of the timing of sowing winter rye seeds and seed sowing standards was studied gas on the growth, development and productivity of grain plants in the short-term crop rotation system 1;1 (Uznegubny grain) for three years [2].

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Experience scheme

Options	Sowing dates	Seed sowing standards
1	20- September	3 mln.
2		4 mln.
3		5 mln.
4	1– October	3 mln.
5		4 mln.
6		5 mln.
7	10– October	3 mln.
8		4 mln.
9		5 mln.
10	20– October	3 mln.
11		4 mln.
12		5 mln.
13	1– november	3 mln.
14		4 mln.
15		5 mln.

The experiment was carried out in one tier for 15 options, 3 repetitions. The width between the rows on the experimental field is 70 cm, the length is 100 m. The area of each plot is 560 m2, the counting area is 280 m2. The total area of the experiments is 2.5 hectares. The experiment was carried out for 3 years in a system of short-rotation crop rotations 1:1 (goose; grain). In the experiment, the "Vaxshskaya-116" variety, which is included in the State Register of Winter Rye, was planted [3]. Germination of winter rye, the degree of exposure was calculated from 3 points per 1 m2 in each option. Agrochemical analyzes carried out on the experimental field; the total and mobile amounts of humus, nitrogen, phosphorus, potassium from the drive (0–30 cm) and supply (30–50 cm) layers of soil were determined before and at the end of the sowing period. Soil samples were taken from all variants of replicates I and III [4].

Research results and their analyses

The periods of development of agricultural crops, in addition to depending on the biological characteristics of the plant, can vary depending on the timing of sowing, the region chosen for growing georgaphic cholate and weather conditions, the type and type of soil and the level of supply of nutrients and at the same time the agrotechnical measures applied. In rye, as in other grain crops, the following periods occur: germination, burning, tube formation, heading, flowering and ripening. Autumn rye goes through the same phenological phases and stages of organogenesis as winter wheat. The rye stalk inside the heels and sixes is articulated, straight, separated by root nodes. The top of the last joint is left. The height of the stem, depending on growth conditions and diversity, ranges from 70 to 180-200 cm (on average 80-100 cm)[5].

In our studies, we also carried out observations of the timing and norms of sowing seeds of winter rye in the context of variants in order to determine to what extent they influenced the transition of the plant into development phases. In rye, as in other grain crops, the following periods occur: germination, tillering, tube formation, heading, flowering and ripening [6].

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The data obtained indicate that during the growing season 2018–2019, 3 million, 4 million and 5 million pieces were planted per hectare during one period of time. in our treatments in which germinating seeds were planted, although there were no differences in the plant's transition to developmental phases, it was found that there were significant differences when we carried out our observations in a cross-section of muddts [7].

In particular, when analyzing the variants planted during the period September 20–September, in the laying phase the plants were observed in all three sowing rates for 16.10 days, while the transition to the full tube phase was 26.02 days, and to the full ear phase - 8. 04 days, transition to the full flowering phase - 17.04 days, entry into the full ripening phase - 15.05 days, while in the seed sowing phase until complete transition to the

ripening phase - 15.053 days, 15.053 days, it was found that winter seeds rye was sown on the first day of October (3 million, 4 million, 5 million) in the variants, the transition

of plants to the full capture phase is 23.10 days, entry into the full capture phase is 28.02 days, and into the full fattening phase is 12.04 days , in full flowering - 23.04 days, and in the full ripening phase - 18.05 days, and it was noted that a total of 229 days passed before the seed entered the ripening phase from sowing.

The effect of seeding periods and standards on the development periods of autumn rye, 2018-2019.

Options	Sowing dates	Seed sowing standards	Full filling	Complete draining	Full spike	Full bloom	Fully cooked	It's been a long day
1	20-September	3 mln	16.10	26.02	8.04	17.04	15.05	237
2		4 mln	16.10	26.02	8.04	17.04	15.05	237
3		5 mln	16.10	26.02	8.04	17.04	15.05	237
4	1- October	3 mln	23.10	28.02	12.04	23.04	18.05	229
5		4 mln	23.10	28.02	12.04	23.04	18.05	229
6		5 mln	23.10	28.02	12.04	23.04	18.05	229
7	10- October	3 mln	9.11	2.03	18.04	30.04	20.05	221
8		4 mln	9.11	2.03	18.04	30.04	20.05	221
9		5 mln	9.11	2.03	18.04	30.04	20.05	221
10	20- October	3 mln	23.11	5.03	18.04	3.05	22.05	213
11		4 mln	23.11	5.03	22.04	3.05	22.05	213
12		5 mln	23.11	5.03	22.04	3.05	22.05	213
13	1-november	3 mln	13.12	9.03	30.04	5.05	24.05	205
14		4 mln	13.12	9.03	30.04	5.05	24.05	205
15		5 mln	13.12	9.03	30.04	5.05	24.05	205

When studying the periods of plant development in variants planted at the end of the first and second decades of October, that is, during the period of October 10 and 20, the introduction of the full laying phase in terms of timing is 9.11–23.11 days, the transition to the full pricking phase is 2.03–5.03 days, the transition to the full cutting phase - 18.04–22.04 days, entry of the full flowering phase - 3.05–5.05 days and transition to the full ripening phase - 20.20, it was noted that the time elapsed from the moment of planting the seeds to ripening was 221'213 days.

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In the late period, that is, November 1–November, when the periods of development of variants in which 3 million, 4 million and 5 million pieces of soft-seeded seeds were planted were analyzed, it was found that 13.12 days later they entered the phase of complete withering , 9.03 days - in the full trenching phase, 30.04 days - in the beginning of complete wilting, 5.05 days - in the full ripening phase, a total of 20 days after the transition from sowing to the ripening phase. 20 days before the ripening phase .

From the data obtained it follows that the postponement of sowing dates led to a reduction in the growing season from 8 to 32 days.

However, it was observed that even at all sowing dates, 3 million, 4 million and 5 million hectares per hectare within the time limits entered development phases at a uniform time, while no discrepancies were noticed between the options in which granulated seeds were planted.

When we summed up, in our experiments on the development of winter rye, it was noticed that in our studies conducted in 2017–2018 and 2018–2019, the above-mentioned patterns were also observed in the permissible timing and sowing standards, decreasing from 8 to 32 days.

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