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Research Article

BIOMASS AND YIELD OF SOFT WHEAT VARIETY "ISTIKLOL-6" DEPENDING ON VARIOUS AGROTECHNOLOGICAL MEASURES ON THE FARMED GROUND

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ABSTRACT

Based on the research conducted on long-term stationary experience, it is clear that grain yield and the accumulation of total biomass of soft wheat fluctuates sharply depending on the predecessor and the use of organo-mineral fertilizers. A close positive correlation (r=0.75) was noted between the yield and biomass accumulation of soft wheat "Istiklol-6". In terms of yield indicators and accumulation of total biomass of soft wheat "Istiklol-6", option 6 was noted (wheat + 10 t/ha manure -+ P40 under the plow).

KEYWORDS

Variety, soft wheat, agrotechnological measures, biomass, fertilizers, ear, stem, leaf, root, yield.

INTRODUCTION

The most important condition for the production process of grain yield formation is the accumulation of plant biomass. With a well-developed vegetation mass, a significant amount of assimilants is produced, which can then be recycled into grain (Konovalov Yu.B., 1981).

Analysis of the accumulation and redistribution of plant biomass provides a variety of information about the properties of the genotypes being studied (Likhenko I.E., 2007, Kumakov V.A., 1982).

In turn, an analysis of experimental and literary data (Klimashevskaya N.F., Dekhtyarev P.Yu., 1986) indicates the importance of the ratio of root and ear mass in the flowering phase in cereals for the formation of their final productivity.

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At the same time, the growth functions of the ear are predetermined by the peculiarities of the formation of the total plant biomass. Thus, biomass in the initial period increases due to the increase in the mass of leaves and stems, in late growth phases - due to the biomass of the stem and ear (Buyanova M.A., 2001, Chernov V.K., 1991).

Methodology and conditions for conducting research. Determination of biomass accumulation of winter wheat was carried out according to V.A. Kumakov (1985). Data from the field experiment were processed according to B. A. Dospehov (1985).

The research was carried out on a long-term stationary experiment established in 1960 at the Research Institute of Rainfed Agriculture, which consists of 14 options, 3 repetitions located in one tier.

Research results. In a stationary experiment (1960), where the influence of agrotechnological measures and predecessors on the fertility and yield of grain and leguminous crops was studied, studies were carried out on the accumulation and distribution of biomass of wheat variety "Istiklol-6" in the stages of tillering, booting and heading. During the tillering phase, the greatest accumulation of total biomass was observed in option 6 (wheat + 10 t/ha manure -+ P40 under the plow), in comparison with other options (Table 1).

Table 1

Accumulation and distribution of biomass of wheat "Istiklol-6" during the tillering phase.

D	Option	root		stem + leaf		total biomass, g
		g	%	g	%	
1	Wheat, no fertilizer control	0,8	15,7	4,3	84,3	5,1
2	Wheat + annually N40	0,9	14,5	5,3	85,5	6,2
3	Wheat + after a year N40	0,9	18,3	4,0	81,7	4,9
6	Wheat + 10 t/ha manure -+ P40 for plow	1,3	16,3	6,6	83,7	8,0
10	Wheat + P40 N40 in a year	1,3	18,0	5,9	82,0	7,2
11	Wheat + P40 N40K40 annually	0,8	16,7	4,1	83,3	4,9
13	Wheat + P40 N40K40 + Rocohumin	0,9	12,7	6,2	87,3	7,1
14	Wheat + 5 t/ha compost once every three years	1,1	15,3	6,1	84,7	7,2

According to the table, it can be seen that the accumulation of total biomass of soft wheat "Istiklol-

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6" in the tillering phase ranged from 4.9 g (options 3 and 11) to 8.0 g (option 6), in the control option it was 5.1 G.

In the booting phase of the Istiklol-6 wheat, the greatest accumulation of total biomass was noted in options 11 (wheat + P40 N40K40 annually) and 13 (Wheat + P40 N40K40 + Rocohumin) (Table 2).

Table 2.

Accumulation and distribution of biomass of wheat "Istiklol-6" in the booting phase

D	Option	root		stem		sheet		total biomass, g
		g	%	g	%	g	%	
1	Wheat, no fertilizer control	5,60	18,25	15,04	49,02	10,04	32,72	30,68
2	Wheat + annually N40	4,26	14,57	14,38	49,21	10,58	36,20	29,22
3	Wheat + after a year N40	2,50	10,02	11,84	47,47	10,60	42,50	24,94
6	Wheat + 10 t/ha manure - + P40 for plow	3,80	11,48	18,18	54,92	11,12	33,59	33,10
10	Wheat + P40 N40 in a year	1,24	4,85	16,36	64,03	7,96	31,15	25,55
11	Wheat + P40 N40K40 annually	4,46	9,51	27,70	59,11	14,70	31,37	46,86
13	Wheat + P40 N40K40 + Rocohumin	5,86	15,52	18,60	49,28	13,28	35,18	37,74
14	Wheat + 5 t/ha compost once every three years	2,84	11,39	13,02	52,24	9,06	36,35	24,92

The table data shows that the total biomass of soft wheat "Istiklol-6" ranged from 24.92 g (option 14) to 46.86 g (option 11), in the control option 30.68 g.

According to the accumulation of the total biomass of soft wheat "Istiklol-6" in the heading phase, option 6 was noted (wheat + 10 t/ha manure -+ P40 for the plow) (Table 3).

Table 3

Accumulation and distribution of biomass of wheat "Istiklol-6" during the heading phase.

D	Option	root		stem		sheet		ear		total biomass, g
		г	%	г	%	г	%	г	%	
1	Wheat, no fertilizer control	12,3	10,9	65,0	57,6	10,4	9,2	15,6	13,8	112,8
2	Wheat + annually N40	14,5	9,6	87,5	58,3	14,1	9,4	19,8	13,2	150,0

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3	Wheat + after a year N40	17,5	10,6	90,6	55,3	16,0	9,7	24,3	14,8	163,6
6	Wheat + 10 t/ha manure -+ P40 for plow	18,7	10,0	98,1	52,5	20,8	11,1	30,4	16,2	186,7
10	Wheat + P40 N40 in a year	13,2	8,7	89,5	59,5	15,9	10,5	20,1	13,3	150,2
11	Wheat + P40 N40K40 annually	15,8	10,1	90,2	57,9	16,4	10,5	19,4	12,4	155,7
13	Wheat + P40 N40K40 + Rocohumin	16,1	10,5	88,6	58,1	15,3	10,0	17,9	11,7	152,4
14	Wheat + 5 t/ha compost once every three years	17,3	10,9	86,9	55,1	16,5	10,4	22,5	14,2	157,5

The accumulation of total biomass of soft wheat "Istiklol-6" (Table 3) in the heading phase ranged from 150.0 g (option 2) to 186.7 g (option 6), in the control option 112.8 g. The proportion of roots ranged from 8.7% (variant 10) to 10.9% (variant 14), in the control variant 10.9%; the share of ears is from 11.7% (option 13) to 16.2% (option 6), in the control option 13.8%.

Yield data from the stationary experiment of soft wheat "Istiklol-6" are presented in table. 4.

Table 4.

Yield data of soft wheat "Istiklol-6" on a stationary experiment (Gallyaaral 2023)

№	Option	Harvest by repetitions, c/ha			average, c/ha	Deviation to control	
		I	II	III		±c/ha	%
1	Wheat, no fertilizer control	6,6	7,8	6,5	7,0	-	-
2	Wheat + annually N40	7,0	7,5	4,2	7,2	+0,2	102
3	Wheat + after a year N40	7,8	7,9	7,0	7,6	+0,6	108
6	Wheat + 10 t/ha manure -+ P40 for plow	9,8	10,2	9,0	9,7	+2,7	138

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10	Wheat + P40 N40 in a year	8,5	8,0	7,9	8,1	+1,1	115
11	Wheat + P40 N40K40 annually	8,9	8,6	8,3	8,6	+1,6	122
13	Wheat + P40 N40K40 + Rocohumin	8,8	8,7	9,0	8,8	+1,8	125
14	Wheat + 5 t/ha compost once every three years	9,1	8,5	8,8	8,8	+2,2	125
	R.% NSR 05	-	-	-	0,56 1,24		

Tabular data show that in the second option, the lowest grain yield of 7.2 c/ha of soft wheat "Istiklol-6" was noted, when N40 was applied annually, and with the joint application of organomineral fertilizers, the yield was 8.8 - 9.7 c /ha.

CONCLUSIONS

Studies conducted on long-term stationary experience have shown that grain yield and the accumulation of total biomass of soft wheat fluctuates sharply depending on the predecessor and the use of organomineral fertilizers.

The highest indicators for yield and accumulation of total biomass of soft wheat "Istiklol-6" were in option 6 (wheat + 10 t/ha manure -+ P40 for the plow).

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