

THE EFFECT OF PLANTING PERIODS AND NORMS OF AUTUMN CROPS ON THE CHANGE IN THE ACTIVE MOISTURE RESERVE IN THE SOIL

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ABSTRACT

The article is the development of improved agrotechnology for the production of high quality wheat winter wheat "Semurug" for areas of the country with water shortages, frequent soil and air drought and relatively low soil quality.

RELEVANCE OF THE TOPIC

At present, 4.3 mln. hectares of irrigated land are planted with winter cereals (mainly wheat) and other crops in the cotton-grain crop rotation complex. In order to improve the reclamation of 1.7 million hectares of irrigated lands and water supply in 2009-2019, large-scale irrigation and reclamation measures are being implemented within the framework of state programs. However, winter wheat yields and quality remain low in many irrigated areas as a result of the ongoing shortages of water resources in recent years as a result of global climate change, the deterioration of irrigation and land reclamation networks, and inefficient use of water and other resources.

Taking into account the above, the President of the Republic of Uzbekistan adopted Decree No. PF-5742 of June 17, 2019 on measures for the efficient use of land and water resources in agriculture for 2020-2030.

The first experiments on the development of complex agrotechnology of cultivation of autumn cereals in irrigated areas at the Gallaorol Scientific Experimental Station (formerly Galla IChB) of the Grain and Legume Research Institute began in the 70s of last century.

Numerous experiments have shown that one of the main factors limiting the yield of autumn grain crops in these areas is the lack of nitrogen-containing (NO_3 NH_4) and phosphorus-containing nutrients, which are easily assimilated by the soil plant in the most fertile, critical stages of growth and development of the country's irrigated lands.

Field experiments "method agroximicheskix, agrofizicheskix i mikrobiologicheskix issledovaniy v polivnix khlopkovix rayonax" adopted at the scientific research institute of agrotechnologies of cotton selection and cultivation of seeds (PSUEAITI, 1963 y.), "Methodology polevix opitov s khlopchatnikom" (PSUEAITI, 1981 y. and conducting field experiments (Tashkent, 2007).) was conducted on the basis of methodological guidelines [7,8].

From the experience conducted in different soil-climatic conditions in the past years, it became known that in the fields emptied from the grain crops with a spike irrigated, hot and dry air

temperature in the summer months, as well as soil moisture under the influence of garmsel winds by the sowing season (October) the humidity of the soil at a depth of Naturally, in such moisture it is impossible to prepare the soil for quality planting, as well as planting at all.

In the years of the experiment, irrigation works (vlagozaryadka) were carried out to create an active moisture Reserve in the soil aerated layer (0-100 CM) at least 8-10 days before planting in order to fully germinate the seeds of the autumn variety "Semurug" for a short period of time on account of the natural moisture content of the soil. The irrigation standard for collecting moisture in autumn soil was 820-950 cubic meters per hectare, depending on weather conditions, soil moisture. in all years, for irrigation of autumn varieties with the same standard, a water meter device "Chippoletti" was used. The results of the study of soil moisture dynamics were as follows.

Table 1 Soil moisture changes depending on the planting times and norm of the autumn variety "Semurug", Gallaorol, average by 2019-2020 years

Duration of planting	The norm of planting is million. dona/ga	Soil layer, cm	Sprouting-thumping (in autumn)		Tumbling-throbbing (October)		Grain-milk cooking		Milk ripening-full ripening	
			%	M ³ /ga	%	M ³ /ga	%	M ³ /ga	%	M ³ /ga
10 October	4,5	0-20	13,8	359	16,4	426	14,0	286	13,2	343
		0-60	16,2	1312	19,8	1604	15,8	1280	14,9	1207
		60-100	15,8	866	18,5	1014	16,3	893	14,7	805
		0-100	16,0	2178	19,2	2618	16,0	2173	14,8	2012
	5,0	0-20	13,8	359	16,5	429	14,7	382	13,8	359
		0-60	14,8	1199	19,8	1604	15,3	1239	16,3	1320
		60-100	13,6	745	18,5	1014	14,9	816	14,8	811
		0-100	14,2	1944	19,2	2618	15,1	2055	15,6	2131
	6,0	0-20	12,8	312	15,8	411	14,8	385	13,9	361
		0-60	14,0	1134	18,9	1500	17,5	1417	15,8	1280
		60-100	13,6	745	16,7	902	16,9	926	16,2	888
		0-100	13,8	1879	17,8	2402	17,2	2343	16,0	2168
20 October	4,5	0-20	14,0	364	17,4	452	15,8	411	14,3	372
		0-60	15,9	1288	18,9	1531	17,9	1450	16,3	1320
		60-100	16,2	888	16,5	904	16,5	904	15,0	822
		0-100	16,0	2176	17,7	2435	17,2	2354	16,7	2142
	5,0	0-20	13,8	359	17,2	447	15,7	408	13,8	359
		0-60	15,0	1215	18,0	1458	16,8	1361	14,9	1207
		60-100	14,2	778	15,7	860	15,0	822	14,0	767
		0-100	14,6	1993	16,9	2318	15,9	2183	14,4	1974
	6,0	0-20	14,0	364	16,8	437	16,8	437	13,6	354
		0-60	15,0	1215	19,4	1571	17,2	1393	14,3	1158
		60-100	13,8	756	18,2	997	14,3	784	12,7	696
		0-100	14,4	1971	18,3	2568	15,7	2177	13,5	1854
30 October	4,5	0-20	14,8	385	17,3	450	17,3	450	14,2	369
		0-60	16,7	1353	18,7	1515	16,4	1328	15,0	1215
		60-100	14,0	767	17,0	932	13,8	756	12,9	707
		0-100	15,4	2120	17,8	2447	15,1	2084	14,0	1922
	5,0	0-20	14,9	387	16,8	437	14,8	385	13,7	356
		0-60	17,2	1393	19,0	1539	16,9	1369	14,7	1191
		60-100	15,7	860	17,9	981	16,0	877	13,9	762
		0-100	16,5	2253	18,5	2520	16,4	2246	14,3	1953
	6,0	0-20	14,0	364	16,3	427	13,8	359	12,7	330
		0-60	15,4	1247	18,8	1523	15,6	1264	14,9	1207
		60-100	13,8	756	17,6	964	14,2	778	13,6	745
		0-100	14,6	2003	18,2	2487	14,9	2042	14,3	1952

The dynamics of soil moisture during vegetation in the autumn planting experiment" Semurug " changed as follows (Table 4). In this experiment, too, the moisture content in the account layer of 0-60 cm of soil formed relatively high indicators at the initial stages of growth and development of vegetation, regardless of the planting period: in autumn – 15,2-17,3% (1532-1422 m³), in soil-13,2 – 19,2% (1575-1578 m³), in soil-0-100 cm, the moisture Reserve in the layers 17,2% or 1979-2341 cubic meters per hectare.

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