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WHEAT GROWING TECHNOLOGY IN AGRICULTURE

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ABSTRACT

Wheat is one of the most common cereal crops. More than half of the world's people use wheat bread as food. Wheat bread contains a lot of protein and starch, and since protein molecules are mainly in gluten, it makes high-quality bread from it. Wheat bread is highly valued for its taste, nutrition and digestibility. The content of wheat grain is from 11.0% to 18-19% protein, depending on its variety and planting season. Protein digestibility in wheat bread is 95%.

In addition, groats are made from wheat grains, and its flour is used in the pasta and confectionery industry. Wheat straw and chaff are fed to livestock, and waste from threshing is a high-quality feed. In the technique, alcohol, starch, gluten, dextrin, glue and other various products are obtained from wheat grain. The quality of wheat grain, that is, the content of protein, gluten, varies depending on the soil and climate conditions of the region where wheat is grown. Wheat is one of the oldest cultivated plants. It was planted in Egypt 6000 BC, during which time irrigated agriculture developed in Egypt.

Behind the Caucasus, in Ukraine, in Europe and Asia, wheat was planted 4000 years before our era. There is no exact information about the origin of wheat and the regions where it was first planted. Currently, wheat ranks first among other crops in terms of cultivated area on the whole Earth. Its total cultivated area on earth is 225 mln. hectare (FAO, 2012). Countries that grow a lot of wheat include Russia, China, the United States of America, India, Canada, Argentina, France and a number of other countries.

Biological characteristics of wheat: wheat is generally divided into autumn and spring forms according to the biological characteristics of cereal crops. Winter wheat is planted in the fall and will produce next year after wintering. Spring wheat is sown in early spring and yields that way. The difference between winter wheat and spring wheat is that their first initial development period lasts 30-65 days at low (from 00 to 100) temperatures. Spring wheat goes through the initial development period at a temperature of 5-100 and above in 7-12 days, that is, in a quick period. So, biologically, autumn varieties cannot be planted in spring, because in spring, due to the lack of temperature required by it, the plants will only bud, do not produce spikes, and will not yield. When wheat is planted in autumn, its biological autumn varieties should be used. Organic spring varieties also cannot be planted in the fall, as they are more heat-demanding and die from winter frosts. But in regions with mild winters, the third type of varieties is semi-autumn varieties. These varieties can be planted in autumn and spring, and in both cases, a normal grain yield is obtained from them. Semi-autumn varieties should be planted in late autumn. Biological fall varieties should be planted in the future. The winter resistance of semi-autumn varieties is higher than that of spring varieties.

Therefore, it is necessary to use biological and semi-autumn varieties for autumn planting in dry and irrigated lands of Uzbekistan. In general, wheat should be planted in autumn in all regions of Uzbekistan. Because they take full advantage of autumn winter and spring rainfall. It begins to grow early in spring, ripens 10-12 days earlier than spring crops, so the flowering

period of autumn wheat does not suffer from hot summer winds, and it gives a higher (25-30%) and constant yield compared to spring wheat.

Winter wheat cultivation technology: Place in crop rotation. Winter wheat requires soil fertility, free from weeds and well-drained soils. Correct placement of winter wheat in crop rotations is important to ensure consistent, abundant yields. On irrigated land, winter wheat should be planted as a repeat crop the following year on land vacated by previous crops. At present, the method of planting between cotton, where a lot of wheat is growing, but the cotton has been harvested, is being used according to the recommendation developed by the scientific production association of Uzbekistan "Grain", and it is giving good results. At the same time, economic efficiency is increasing due to resource-efficient technology. It is beneficial to sow winter wheat with a clean plow in dry plains and fertile plain zones, and in higher zones with a row plow in addition to a clean plow.

Working the land. Fields for winter wheat are cultivated depending on what crops were planted on the field before and how clean the field is from weeds. In order to plant wheat in the optimal period and to work the land well, the areas cleared from the previous crop are irrigated. After soiling, it should be plowed to a depth of 25-30 cm with the help of 4 and 5 body tipping plows, then it is harrowed and crushed. If the land is uneven, it will be leveled. The plowed area must be compacted with heavy harrows or compactors (catoks), otherwise, as a result of compaction in autumn-winter conditions, the wheat grass and plants will thin out and die. Before planting winter wheat on saline lands, the soil is washed with salt.

Fertilization. Winter wheat is demanding on soil fertility. The rate of fertilizers applied to the ground to obtain the planned harvest is determined based on the information of the agrochemical cartogram, based on the amount of nutrients that leave the land with the crop, nutrients absorbed by the crop, and the amount of fertilizer applied to the ground. Winter wheat is very demanding on nitrogen. It needs a lot of nitrogen in the period of tube wrapping and earing, phosphorus in the first 1-5 weeks of growth, and potassium from the beginning of the growth period until flowering. Prevents the stem from lying down and various fungal diseases. When a large amount of nitrogen fertilizers are applied, the period of flowering is prolonged, and spikes on the stems are not formed at the same time. According to the information of the scientific production association "Uzbekistan Grain", the following amount of fertilizer should be applied to irrigated lands with autumn grain crops: nitrogen - 180 kg/ha, phosphorus - 90 and potassium 60 kg/ha. However, in soils with low fertility, this amount is increased by 10-15%. The indicated annual amount is given in several periods - before planting and during feeding of plants. 30 kg/ha of nitrogen, 90 kg/ha of phosphorus and 60 kg/ha of potassium are given before planting in irrigated lands. At the same time, 10-12 t/ha of manure is applied. Fertilizers should be applied no later than February when nitrogen, phosphorus, and potassium are available shortly after planting in areas that have not been fertilized during planting. the rest of the fertilizers are divided into two equal parts and applied twice. In the period after the first feeding, that is; should be given during the flowering period of plants. This period may correspond to autumn-winter or winter-spring periods, depending on the development of plants.

The second feeding corresponds to the period of tube wrapping of plants. Watering the fields after feeding zapyp. In order to increase the effectiveness of fertilizers, it is necessary to apply them in optimal terms and with high quality.

Planting period. It is important to plant winter wheat at the right time. Winter wheat should be sown earlier on irrigated land than on dry land. Because such lands are supplied with water and after planting ypyg, lawns can be harvested as a result of irrigation. Wheat sown in early periods will form a lawn in the fall, and the plants will be established before frost. Such plants are resistant to cold. Therefore, in the fall wheat should be sown in October and planted until the end of October and November and wintered during this period of development. Taking this into account, the best time for planting winter wheat is the first and second ten days of September for the northern regions (Republic of Karakalpakstan, Khorezm region), the first ten days of September for the central regions, the beginning of October, and the second ten days of October for the southern regions. In dry lands, autumn crops should be sown before the autumn rains, that is, in the second half of October in most regions.

Preparing the seed for planting. Quality seed is one of the most important factors in producing high yields, and seed wheat is obtained from high yielding seed plots. Larger, heavier, flat, undamaged seeds with a high germination rate are mainly planted. The seed to be sown is cleaned, sorted and treated in special Petrus grain cleaners. Then it is distributed to farms through grain receiving branches. Wheat seeds used for planting must meet the state standard. According to this model, 1st class seeds should not be less than 95% fertile and 99% pure. Second class seeds should have 92% fertility and 98.5% purity. 1st and 2nd class seeds should be used for sowing. Before planting, cleaned and sorted seeds are treated with 2 liters of derazel in 3 liters of water against black moth and fusarium diseases.

Sowing methods, seeding rate and depth. Winter wheat should be planted mainly in narrow rows on one side of the field, that is, facing the irrigation path. Only then will the plant use light, water and nutrients equally. In this method, at the distance of the tractor wheels, 1-2 seeds of the seeder are covered, and seeds are not planted from these seeds. Later, wheat is irrigated through these left rows. When fertilizer and herbicide are applied, it is ensured that the tractor moves through these rows. In addition, winter wheat can be planted twice, depending on the length and width of the field. However, this method consumes too much seed and fuel lubricants, the plants planted across the field from the egates left for irrigation and tractor movement die and the planting is delayed. This method can be used in plain zones of dry lands. The technology of planting grain between cotton stalks, developed by scientists of the Scientific Production Association of Uzbekistan "Grain", is also an effective method. According to this technology, in the areas where grain is planted between rows of cotton stalks, after cotton is picked 1-2 times with the help of harvesters, the cotton between the rows is softened with the help of cultivations. Grain seeds are sown in the softened rows using HRU-0.5 suspension fertilizer spreaders, and then the seeds are buried in the soil using a cultivator or special equipment. The advantage of this method is that the cotton stalk protects the grain lawns from frost and lodging.

Seeding rate. Seeding rates vary depending on seed quality, soil fertility, and water availability. Since dry land is infertile and lacks water supply, the amount of seed used per hectare is lower than that of irrigated land. The rate of seeding varies depending on the conditions of the drylands. More seeds are used in the foothills and mountainous zones, and less in the plains and flat zones. Accordingly, in such lands, 2.0-3.0 million per hectare of land. a piece, that is, from 60-70 kg to 120-125 kg of seeds are used. As irrigated land is more fertile and watered, higher yields are obtained due to increased plant thickness. Therefore, the rate of sowing seeds in irrigated lands is twice as much as in dry lands, that is, 4-5 million seeds per hectare should be planted. According to the experiments conducted at the experimental station of the Scientific Production Association of Uzbekistan "Grain" and the Namangan Institute of Engineering and Construction, the rate of sowing per hectare is 3 million. 6 million per piece. It was found that the wheat yield increased with the increase to grain. So, the rate of planting winter wheat should be 200-250 kg/ha, depending on the quality of the seed and the planting conditions. The depth of planting winter wheat is of great importance in its resistance to cold. The deeper the seed is planted, the deeper the joint will be. Even when the autumn-winter frosts affect the stems, the plant will not die if it does not affect the joint. Taking this into account, the seeds of winter wheat should be buried 6-7 cm at the time of sowing, and 6-8 cm at the time of early sowing in dry lands.

Crop care. Winter wheat care consists of fertilizing, feeding and watering. Winter wheat is fertilized during the budding period. However, the vegetation period can also correspond to different periods. If winter wheat is planted at the optimal time and there is sufficient moisture, the plants will begin to flower by late autumn and winter in this state. At this time, it has been found that fertilization with new rains during the period of flowering of plants in early spring, even if it is planted later, has a good effect. As a result, the surface of the soil is softened, fertilizers are applied, the root of the plant is loosened and they are well planted. As mentioned above, crops are fed in two periods. It is fed for the first time before fertilization during the period of growth and the second time at the beginning of the period of tube wrapping. Fertilizers remaining after pre-sowing feeding are divided equally into two parts and given twice. Autumn crops are watered 2-3 times depending on soil and climate conditions. Lands with surface groundwater are irrigated 2 times during the growing season, and lands with deep groundwater are irrigated up to 3 times. Winter wheat is optimally irrigated after sowing, when it is planted in late September-early October, in addition, it is possible to irrigate wheat up to three times during the growing season. it is watered the second time during the budding period and the third time during the earing period. Irrigation rates can range from 700-800 m3/ha to 1000-1200 m3/ha, depending on soil conditions. Wheat is irrigated through raised egates during planting. This ucyl is considered the best way to save water. There are no lumps on the surface of the earth and the water is evenly distributed.

Harvesting winter wheat. Harvesting the autumn wheat crop is the last and most responsible period in growing grain and increasing its gross yield. Timely and short-term completion of harvesting, prevention of fallow, and abundant wheat harvest is the main guarantee. The main method is to harvest the winter wheat crop first and then harvest it. In this method, the grain

of the crops is harvested at a height of 15-20 cm from the ground in special reaping machines during the wax ripening period, and is thrown into the field for drying. At this time, the reaped wheat is not spilled on the ground. A few days after harvesting, depending on how dry the grain is, podborshchik is collected and threshed in combine harvesters. The advantage of the method of reaping first and harvesting later is that it allows to start the harvest directly facing threshing 5-6 days earlier, the land is opened for repeated crops, and the loss is drastically reduced. In our country, harvesting of the crop in the most modern Keys, Klass, Dominator combines has been introduced in the fields where the crop has been harvested.

Variety selection, planting dates and standards for each region. Proper selection of varieties for each region, regionalization of drought-tolerant varieties. Early varieties: Chillaki, Kuma, Esaul. Medium varieties: Babur, Mars-1, Andijan-4, Jaykhun, Yaksart, Matonat, Selyanka, Turkistan, Muftalo varieties, Zamin-1, Kroshka, Tanya, Pamyat, Nota, Moskvich, Andijan-2, Asr,

Table 1. Based on the biological characteristics of the varieties, it is recommended to place the varieties of grain crops in the following order:

№	Regions	Varieties planted in 2012	Varieties recommended for planting in 2013	New and promising varieties
1.	Republic of Karakalpakstan, Khorezm	Krasnodar 99, Tanya, Kroshka, Polovchanka, Note, Pamyat	Krasnodar 99, Tanya, Kroshka, Polovchanka, Note, Pamyat	Burma, Yaksart, Bo'zqal
2.	Andijon, Namangan, Fargona	Krasnodar 99, Tanya, Kroshka, Polovchanka, Chillak	Krasnodar 99, Tanya, Kroshka, Polovchanka, Chillaki,	Jayxun Grom, Matonat, Saidaziz
3.	Surkhandarya, Kashkadaryo	Krasnodar 99, Tanya, Kroshka, Moscow, Chillaki	Krasnodar 99, Tanya, Kroshka, Moscow, Jayxun, Chillaki	Yaksart, Turkiston, Sezan, Berdan, Fortuna, Dustli
4.	Tashkent, Jizzakh, Syrdarya	Krasnodar 99, Tanya, Zamin-1, Chillaki, Kuma, Intensiv	Krasnodar 99, Tanya, Intensiv, Babylon, Dustlik, Chillaki, Kuma, Yesaul, Earth-1	Saidaziz, Yaksart, Burma, Grom, NS 40S, Favorid, Saratov 69
5.	Bukhara, Navoi, Samarkand,	Krasnodar - 99, Tanya, Kroshka, Moscow, Chillaki, Polovchanka	Krasnodar 99, Tanya, Kroshka, Moscow, Chillaki, Polovchanka, Nikonia, Starshina	Burma, Yaksart, Nicaonia, Friendship

Table 2. The following table can be used to determine the planting standard (at the hectare. rate)

The weight of 1,000 grains, gr.	3 million seeds per hectare, or 300 seeds in 1 sq.m.	4 million seeds per hectare, or 400 seeds in 1 sq.m.	5 million seeds per hectare, or 500 seeds in 1 sq.m.	6 million hectares per hectare, or 1 sq.m. and 600 tons of seeds
38	114	152	190	228
39	117	156	195	234
40	120	160	200	240
41	123	164	205	246
42	126	168	210	252
43	129	172	215	258
44	132	176	220	264
45	135	180	225	270
46	138	184	230	276
47	141	188	235	282
48	144	192	240	288
49	147	196	245	294
50	150	200	250	300

Determination of planting standards

Planting norms are determined taking into account fertility and 1,000 grain weight. Depending on the duration of the planting: 4.5 million hectares per hectare in the early term. unleavened seed, that is, 200-210 kg. in the account. • 5.0 million hectares per hectare in the medium term. the fertilized seed, that is, 220-230 kg. in the account. • 6.0 million acres [6.0 million ha] per hectare during the evening period. unleavened seeds, i.e. 240-250 kg. in the account.

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