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EFFECT OF BIOSTIMULATORS ON GROWTH AND DEVELOPMENT OF WHEAT

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ANNOTATION

This article provides information about the factors necessary for the growth and development of wheat, one of the most important agricultural products of our country, and the effect of biostimulants on this growth and development.

Key words: wheat, biostimulant, growth, development, root, agriculture, composition, grain, grain.

Wheat is a group of herbaceous plants belonging to the cereal family. There are about 30 wild and cultivated species. The root system of wheat is a pubic root, the main part of which develops in the arable layer of the earth, and some roots penetrate up to 180 cm deep. The stem is a stem divided into thick joints, 40-130 cm tall. Durability and productivity of wheat depends on the height of the stem.

Wheat is more self-pollinating. The fruit is a grain. According to its size, it is divided into soft (smoky) or hard (shiny, flaky) wheat. The ear of soft wheat is shorter than the ear; the grain is white or reddish, the cross-section is round, the inside is mostly flour-shaped. The ear of durum wheat is dense, and the stalks grow longer and straighter than the ear. The grain is nutritious, contains protein (from 10-12% to 20-25% in selected varieties, 25-30% in wild types), starch (60-64%), fats, vitamins, enzymes, and minerals. Various types of flour, cereal, alcohol, and starch are produced from wheat grain.

Needs moisture during the spike period. Drought reduces productivity. The vegetation period of winter wheat is 45-50 days in autumn, 75-100 days in spring-summer, and 90-100 days of spring wheat. Winter wheat can withstand frost up to -35°C when the snow cover is thick. Spring wheat lawns can withstand frosts of -8-10°C. In irrigated regions, it is recommended to plant winter wheat on fertile land free from corn, cotton, potatoes and other field crops. It does not grow well in sour and salty soil. Planting method: in close rows (12-15 cm between rows) or narrow rows (7-8 cm between rows. Sowing rate - 70-110 kg per hectare in dry lands, 170-200 kg per hectare in irrigated regions, planting depth 4-6 cm ; autumn is planted deeper, the planting rate is 10-15% more, the seeds are sorted and treated before planting in the irrigated land of Uzbekistan, 10-15 t of manure per hectare. It is recommended to apply 80 kg of phosphorus, 40-100 kg of potassium.

Currently, 93 varieties of wheat are grown in Uzbekistan. The growing need of the population of our republic for grain and bread products requires increasing grain production and improving its quality.

Most of the world's population is currently suffering from malnutrition. Protein deficiency in children is one of the most important problems in developing countries. To solve this problem, it is necessary to pay special attention to the cultivation of high-protein grains, to improve the nutritional quality, because these crops are cheap and available as protein material.

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At the same time, today the demand of the population for livestock is always growing. The formation of a high and high-quality grain crop depends on many factors, including the genetic characteristics of the cultivated variety, soil-climatic conditions, previous crops, feeding and irrigation regimes. Year by year, the demand for flour and products made from it is increasing due to the increase in the population. High-yielding wheat varieties are essential for the production of high-quality flour.

In the conditions of our region, it is very important to study the characteristics of winter wheat varieties, to adapt them to a specific region, especially to determine the effect of the watering procedure on the productivity of these varieties, and as a result, to achieve the maximum productivity of the varieties and use them in the national economy. Implementation of these processes requires knowledge of physiological processes in plants. These include features such as growth and development.

It is known that plant growth means an increase in plant mass regardless of its organ, and development means the succession of periods of plant organogenesis.

Growth and development in grain crops can be in the following proportions:

1. Fast growth, slow development - in this case, the growth of leaves and root masses occurs, the formation of generative organs is slightly delayed, and the crop mass becomes less grainy.

2. Slow growth and rapid development - in this case, the plant stops growing, although there is not enough root, leaf mass, organic matter, but it goes through the stages of organogenesis quickly, as a result, spikes with low mass appear. and the yield will decrease.

3. Fast growth, fast development - in this case, a normal ratio is formed between the surface of the leaf plate and the mass of the plant, as well as the stages of organogenesis. In the same ratio, a mass of equal proportions is formed between the grain and the stem of plants.

4. Slow growth and slow development - in this case, a small mass of the plant is formed, and they ripen late.

It is necessary to create favorable conditions for plants as a result of the rational use of all technological means while monitoring the growth and development of grain crops.

Cereal crops go through several phenological periods during the growing season. Each period is different in structure, appearance and quality. The following phenological periods have been identified in grain crops: weeding, tillering, earing, earing, flowering and ripening. If it is determined that 10% of the plant has passed into each new period, it means that the plant has fully passed into this period.

The change of development periods is represented by the appearance of new organs in plants.

The growth period of a plant includes the period of certain development phases, i.e. planting-germination, germination-heading, earing-ripening periods.

includes A short or medium length of the growing season gives a good result for the climatic conditions of Uzbekistan.

The difference between spring and autumn wheat varieties in the length of the growing season is big. The duration of the growth period of spring wheat varieties is 70-80 days, in some varieties 120-130 days.

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In winter wheat varieties, it can be 180-220 days or more, taking into account the winter rest period. This indicator also depends on the biological characteristics of the variety and the influence of external environmental factors.

The duration of the growth period of winter wheat varieties is 145-190 days, excluding the winter rest period of winter wheat. Winter wheat does not completely stop growing in winter. Growth continues when the air temperature rises, and stops growing when the air temperature drops. Therefore, the period between one development phase and the second phase of winter wheat is extended. In particular, the lengthening of the period between the phases is more observed in the tuber phase of wheat germination. The period from germination to tuberization is 35-40 days in spring wheat varieties under normal agrotechnical conditions, and 90-120 days in winter wheat.

We know from scientific sources that, regardless of any type of crop, for the seeds to germinate on time, there must be enough moisture, temperature, light and other external factors in the soil, as well as the seed quality should also be high.

For example, a grain of winter wheat needs to absorb 4547% of its weight in water in order to germinate. This process is especially important for wheat planted in autumn. Because, as a result of rapid changes in the weather in autumn, the humidity in the soil can also change, and as a result, it can affect the germinating seeds.

According to the data, wheat seeds have the ability to absorb moisture in the soil at the temperature at which ice melts. For example, at this temperature, when the soil moisture is 90%, during 15 hours, the seed absorbs 11% of its mass of moisture. output dynamics were studied.

5 million per hectare of local varieties of winter wheat, after quality agrotechnical measures of autumn plowing, harrowing, harrowing and harrowing are carried out in areas freed from previous crops. grain was planted in moderation. Since winter wheat varieties were planted in small areas in our scientific research work, 500 seed samples were sown in 4 repetitions by manual labor in 1 square meter area, and irrigation was carried out in order to obtain full seedlings. It was observed that the seeds of winter wheat and triticale, which absorbed the necessary moisture, began to germinate successively according to the varieties after receiving the necessary heat.

The term "agricultural biostimulants" encompasses a diverse group of product technologies and may include bacterial or microbial inoculants, biochemical materials, amino acids, humic acids, fulvic acids, algae extracts, and more.

Agricultural biostimulants are considered biological and include biologically beneficial fertilizers and similar products used in the production of plant products to increase the growth, health and productivity of plants. Their tasks are:

- It helps to improve the efficiency of using food products
- Facilitate growth under abiotic stresses such as heat, cold, drought and too much water
- Helps improve quality attributes such as nutritional content, appearance and shelf life

Biogenic stimulants, biological stimulants are substances that are formed in the tissues of animals and plants under certain conditions and have biological activity. The doctrine of biogenic stimulants was first developed by V. P. Filatov (1875-1956). Biogenic stimulants accelerate body functions. Preparations with biogenic stimulants are prepared from plant (aloe leaf extract) and animal tissues by exposure to various factors (cooling, storage in a dark place, etc.), as well as from peat and clay with microflora and microfauna remains. Biogenic stimulants

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are used in medicine for the treatment of various diseases (non-healing wounds, inflammatory processes, eye diseases, eczema, bone fractures, endometritis, mastitis, etc.), to accelerate the growth of young cattle, to increase the number and productivity of cattle.

In this case, liquid preparations are injected or drunk. Dry preparations for implantation purposes (dry biostimulants made from animal embryo, spleen, liver and adrenal gland), Dorogoye antiseptic stimulator, horse blood serum (SJK), canned animal meat and its extract (DZK), acidophilic broth culture (ABK) and others is used.

CONCLUSION. Biostimulants are easy to use, precisely targeted, less harmful to the environment and human health, can reduce the use of harmful chemicals, and other properties are preferred. Thus, biostimulants have formed a global concept and product type in a few years, attracting the attention of large companies around the world and containing strong business opportunities.

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