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THE INFLUENCE OF PLANT GROWTH REGULATORS ON THE ECOSYSTEM (ВПЛИВ РЕГУЛЯТОРІВ РОСТУ РОСЛИН НА ЕКОСИСТЕМУ)

Для вирішення багатьох завдань у практиці вирощування сільськогосподарських культур широко використовуються регулятори росту і розвитку рослин. З їх допомогою удосконалюються агротехнологічні прийоми вирощування окремих сільськогосподарських культур. Застосування фізіологічно і біологічно активних речовин для регуляції і стимуляції росту і розвитку рослин обумовлено широким спектром їх впливу на рослини, здатністю регулювати окремі етапи розвитку, спрямовані на мобілізацію потенційних можливостей рослинного організму, а також тому для підвищення врожайності та якості продукції, яку ми вирощуємо. Але серед позитивного впливу на організм рослин регулятори росту мають і негативні наслідки, про які йдеться в даній роботі.

Ключові слова: *гібереліни, цитокініни, розвиток рослин, землеробство.*

Regulators of plant growth and development are widely used to solve many problems in the practice of growing crops. With their help, agrotechnological methods of growing certain agricultural crops are being improved. The use of physiologically and biologically active substances to regulate and stimulate the growth and development of plants is due to a wide range of their effects on plants, the ability to regulate individual stages of development aimed at mobilizing the potential capabilities of the plant organism, and therefore to increase the yield and quality of the products we grow. But among the positive effects on the plant body, growth regulators have negative consequences, which are discussed in this work.

Keywords: *gibberellins, cytokinins, plant development, agriculture.*

Plant growth regulators are chemical substances that provide regulation of plant growth and development. These substances can be used to increase yield, improve fruit quality, reduce plant care costs, and increase resistance to weather conditions and diseases .

The most famous growth regulators are gibberellins, cytokinins, auxins, abscisic acid and ethylene. Each of them is responsible for different processes in the growth and development of plants.

Gibberellins are responsible for stem elongation and fruit enlargement, which can lead to increased yield. Cytokinins stimulate cell division, which helps to form new buds and increase the number of fruits. Auxins are responsible for the growth of roots and stems, abscisic acid helps to reduce moisture loss and increase resistance to stressful situations such as drought and low temperatures. Ethylene is responsible for stimulating the ripening processes of fruits and leaves, as well as for the death of cells and leaves [1].

Plant growth regulators can be used in various fields of agriculture, such as the cultivation of vegetables, fruits, cereals and ornamental plants. They can be used to accelerate the growth of plants, increase the yield and improve the quality of products [2, 3].

However, when using plant growth regulators, it is necessary to follow the established norms and rules. For example, plant growth regulators should not be applied during flowering or harvest, as this may adversely affect the quality and quantity of the harvest. In addition, it is necessary to follow the rules of storage of plant growth regulators, as they can be toxic to humans and animals [4].

Plant growth regulators can have a significant negative impact on the environment if they are used uncontrollably or abused . Here are some possible environmental consequences of using growth regulators:

1. Contamination of soil and water resources: Plant growth regulators can be toxic to most organisms living in soil and water and can adversely affect ecosystems that depend on these

resources. For example, the growth regulator gibberellin can be toxic to fish, meaning it can cause them to die.

2. Loss of biodiversity: The use of growth regulators can also have an impact on biodiversity , as they can destroy plants, insects and other organisms that depend on these plants for life and nutrition. For example, the use of herbicides can reduce the number of different types of plants in the ground [5].

3. Effects on human and animal health: Some plant growth regulators may have harmful effects on the health of humans and animals that come into contact with these substances. For example, some plant growth regulators, such as auxins and herbicides, are known to be carcinogenic and cause other diseases.

4. Development of resistance: The use of growth regulators can also lead to the development of resistance in plants to these substances. This means that growth regulators may lose effectiveness and require the use of larger ones doses of growth regulators to obtain the desired effect. This can lead to even greater negative impacts on the environment, as higher doses of growth regulators can be even more toxic to the environment and human and animal health.

5. Air pollution: During the cultivation of plants using growth regulators, a certain amount of toxic substances such as ammonia, carbon dioxide, phenols and others can be released into the air. This can lead to air pollution and a negative impact on the health of people and animals.

6. Deterioration of food quality: The use of growth regulators can also affect the quality of the food we consume. Some growth regulators can remain on the surface of plants and accumulate in them, which can affect the quality and safety of food products [6, 7].

In general, plant growth regulators can have a significant negative impact on the environment if they are used uncontrollably or abused . Therefore, it is important to use these substances with care and taking into account their impact on the environment and human and animal health [8].

The use of plant growth regulators can be useful for increasing yield and improving the quality of cultivated plants, but uncontrolled use can have a negative impact on the environment and human and animal health.

Recommendations for the use of plant growth regulators should include:

- The use of growth regulators only when it is really necessary, and not to ensure a quick yield without considering the consequences.
- Adequate dosing of growth regulators to avoid negative impact on the environment and human and animal health.
- Use of growth regulators that have the least negative impact on the environment and human and animal health.
- Carefully follow the instructions for the use of growth regulators and take into account the conditions of their use.
- Regular monitoring of the impact of growth regulators on the environment and human and animal health [9, 10].

Adherence to these recommendations can help reduce the negative impact of growth regulators on the environment and human and animal health, while ensuring the effective use of these substances to increase the yield and quality of cultivated plants.

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PROBLEMS AND CONDITIONS OF IRRIGATION IN THE SOUTH OF UKRAINE DURING THE WAR
(ПРОБЛЕМИ ТА УМОВИ ЗРОШЕННЯ НА ПІВДНІ УКРАЇНИ ПІД ЧАС ВІЙНИ)

В статті наведена проблема контролю над водними ресурсами на півдні Укріни, яка зумовлена повномасштабним вторгненням Російськоі Федерації, що призвело до економічних та соціальних проблем у регіоні

Ключові слова: *зрошення, зниження врожайності культур, крапельне зрошення*

The article presents the problem of control over water resources in the south of Ukraine, which is due to the full-scale invasion of the Russian Federation, which has led to economic and social problems in the region

Key words: *irrigation, reduction in crop yields, drip irrigation*

The war in Ukraine, which began in 2014, has had a significant impact on many aspects of life in the country, including agriculture. The southern regions of Ukraine, which are traditionally known for their fertile soil and abundant crops, have been particularly affected by the conflict. After the Russian invasion in 2022, farmers in the occupied territories continued to struggle to grow crops and earn a living.

Russian-backed separatist forces have seized much of the farmland, making it difficult for local farmers to access their pastures, grow crops and livestock. In addition, many farmers who are able to continue working on the land have limited access to markets and sales of their produce. One area of concern has been irrigation, as the war has disrupted the supply of water to these regions. In this article, we will explore the challenges of irrigation in the south of Ukraine during the war and the efforts being made to address these challenges.

The southern regions of Ukraine, including the regions of Kherson, Zaporizhzhia, and Donetsk, are among the most productive agricultural areas in the country. These regions are characterized by a favorable climate, fertile soil, and a long tradition of agriculture. However, the