

Presowing treatment of seeds of different crops
Safarov A.¹, Baykabilov D.² (Republic of Uzbekistan)
Предпосевная обработка семян различных культур
Сафаров А. К.¹, Байкабилов Д. К.² (Республика Узбекистан)

¹Сафаров Алишер Каримджанович / Safarov Alisher – кандидат биологических наук, доцент;

²Байкабилов Дилишод Кулмурадович / Baykabilov Dilshod – магистр,

кафедра ботаники, биологический факультет,

Национальный университет Узбекистана, г. Ташкент, Республика Узбекистан

Abstract: *the article analyzes basic methods of pre-treatment of seeds with the help of various physical and chemical effects. The need to better clarify the general nature of plant resistance, as well as the development of common principles and diagnostic methods for increasing plant resistance.*

Аннотация: *в статье анализируются основные способы предпосевной обработки семян с помощью различных физико-химических воздействий. Необходимость более глубокого выяснения общей природы устойчивости растений, а также разработки общих принципов диагностики и приемов повышения устойчивости растений.*

Keywords: *the genotype, pre-sowing, germination, adaptation, resistance of plants.*

Ключевые слова: *генотип, предпосевная обработка, всхожесть, адаптация, устойчивость растений.*

For the practice of agriculture in saline soils has major importance economically important crop cultivated plants. The productivity of agricultural plants on saline soils can be greatly enhanced when using salt-resistant lines and varieties of plants, pre-treatment of seed physical and chemical effects, the use of advanced halophytic crops, as well as the introduction of salt-tolerant transgenic plants.

Limiting the possibility of adaptation of plants to environmental hazards determined by their genotype. However, it is not always used to the full. Hence the considerable variation in seed germination, vegetative growth rate and development in plant survival, yield, etc. in different plants of the same species and variety. Therefore, the introduction of plants to new area is to use various methods to increase plant resistance. In particular, to improve the salt tolerance of plants can be used pre-sowing preparation of seeds (their hardening, encapsulation of the seeds with the addition of hormone-action stimulants, trace elements, especially calcium, treatment of seeds of different physical effects), calcium incorporation into the soil (lime), special agronomic techniques in plant breeding For example, planting, taking into account that the first watering is carried out non-saline irrigation water, etc.

Presently now known plenty of ways of pre-sowing seed treatment with various physical and chemical effects. Seeds treated with ultrasound of different frequencies, constant electric or magnetic fields, AC sinusoidal or pulsed electromagnetic fields of different intensity, a different pulse shapes and different frequency, ionizing radiation, light of different wavelengths (UV, blue, red and infrared), activated in a different way with aqueous solutions (activated in a membrane cell, electromagnetic fields, degassing, sonication, heating, etc.).

An analysis of the literature data on the mechanisms of plant responses to all of the above methods of pre-treatment of seeds shows that the responses of plant cells are common to all methods, non-specific reactions. increasing the conductivity of biological membranes can be attributed to them for various ions, and especially the calcium, which, as mentioned above, enables many nonspecific defense reactions of plants. That is, one of the results of each of the known methods of pre-treatment of seeds is a non-specific hardening seeds against various harmful environmental factors.

Presowing seed soaking of different soybean varieties in licorice root extract, as well as encapsulation increase the stability of soybean to soil salinity. It increases the germination of soybean seeds in laboratory and field conditions. Plants grown from seeds that have received similar treatment, there is good growth and development, increased productivity [1].

The character of the physiological changes in plants under the influence of various extreme effects comprehensively studied by many researchers and has accumulated a huge amount of experimental data, and clarified a lot of important patterns in the physiology of plant resistance. However, this issue is still no consensus of researchers and the question of the specificity of plant adaptation to various extreme factors remains controversial.

The conclusion of non-specificity of plant adaptation to various extreme factors enables better determine the general nature of the resistance of plants and the development of common principles and diagnostic methods for increasing plant resistance.

In this way knowledge of the variety of mechanisms that lead to the plant's ability to grow and produce a full crop in terms of soil salinity - a reliable tool for controlling salt tolerance and the basis for the creation of new plant varieties.

References

1. *Annamuratova D. R., Safarov A. K., Safarov K. S.* Effect of pre-sowing seed treatment on growth, development and productivity of soybean // Problems of increasing the yield of crops. Collection of Materials of the Republican scientific-practical conference. Bukhara, 2009. P. 42-45.