

Stress and Adaptation in Plants

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In recent years, the issue of plant stress has gained increasing relevance. This is largely due to the growing changes in climate and environmental pollution, which have an adverse effect on agricultural crop yields and the quality of plant production. The most characteristic stress factors for agricultural plants in our country are drought, low and high temperatures, mineral element deficiencies, etc. Their negative impact is comparable, and in many cases exceeds, the damage caused by diseases, pests, and weeds.

Due to the abiotic nature of the leading stress factors, it is a popular notion that they cause primarily "**non-infectious diseases**" in plants. In reality, plant stress can also be induced by biotic factors - bacteria, fungi, viruses, etc., as well as various xenobiotics - pesticides, heavy metals, and gases. In the latter case, the term "**phytotoxicity**" is more often used instead of the term

"stress", but essentially both concepts reflect physiological states of plants that are the result of similar structural and functional disorders.

Modern plant protection products create opportunities for increasingly successful control of diseases, pests, and weeds, which is why the resistance (tolerance) of agricultural crops to various stress impacts often becomes a limiting factor for obtaining high yields. This also motivates a more in-depth study of the problem of plant stress.