

**ADAPTATION AND GROWTH FEATURES OF THE PLANT MILK THISTLE
(*Silybum marianum*) TO THE CLIMATE CONDITIONS OF KHORAZM**

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Silybum marianum Gaertn.L., commonly known as milk thistle, is a flowering plant belonging to the family Asteraceae. This plant has been widely studied for its medicinal properties, ecological importance and adaptability to various environmental conditions. In addition to its historical use in traditional medicine, it also plays an important role in modern pharmacology. This article aims to analyze the morphological, ecological and pharmacological properties of milk thistle (*S. marianum*), highlighting its importance in various fields.

According to the World Health Organization, approximately 60% of the world's population consumes herbal medicines, and the annual trade is worth 21 billion dollars.

Milk thistle is an annual or biennial diploid plant belonging to the family Asteraceae. It has a taproot system, with the main root mass concentrated in the 0–50 cm soil layer. The leaves are thin, light green, marbled with white spots and covered with short hairs on both sides, with ovate triangular side lobes and prickly toothed edges. The tubular flowers are purple, pink or rarely white. The flowering period of one inflorescence lasts an average of 2–6 days [1].

Varieties of milk thistle such as Debut, Start and Amulet are sown in early spring, like other spring crops. Correctly determining the sowing date is very important to preserve the activity of endogenous phytohormones in seeds and accelerate germination. In laboratory conditions, seed viability should be at least 70-80%, and purity should be 94-96%, which corresponds to the first or second grade quality standards.

In open field conditions, milk thistle is sown with a row spacing of 45-50 cm to reduce competition for light and nutrients, which allows for optimal development of vegetative and reproductive organs under phytohormonal influence. Seeds are sown 2-4 cm deep at a seeding rate of 18-20 kg/ha. To ensure active root growth, efficient photosynthesis and optimal hormonal balance, it is recommended to keep the plant spacing within the rows at 22-25 sm. As a result, adherence to specific agrotechnical practices improves crop physiology, growth dynamics and overall seed yield [2].

Proper water supply during the growing season stimulates phytohormonal activity, enhancing metabolic and photosynthetic processes at all stages of growth.

Inter-row cultivation and hoeing improve aeration in the root zone, activate the synthesis of endogenous phytohormones and have a positive effect on the overall growth of plants. Controlling weed competition allows the physiological effects of gallic and glycyrrhizic acid ratios to be fully manifested, which ensures effective growth and development.

Aboveground biomass is harvested using combines in the first half of the day, when moisture exchange under phytohormonal influence is relatively stable.

References:

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