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THE IMPORTANCE OF GROWING AMARANTHUS L IN TERMEZ CONDITIONS

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Abstract:
The article provides information about the history of origin, medicinal, economic importance, application and biological properties of Amaranthus L. Conclusions are made based on the results of research on seed germination of amaranth plants in Termez conditions.

Keywords: Amaranthus L., climate, food, fodder hay, medicinal.

Introduction

At present, the need to cultivate stress-resistant, low water requiring plants and apply them to various sectors of the economy while maintaining the natural microflora while adequately providing quality food and medicine to improve the well-being of the population. In particular, among such crops in our country, certain scientific and practical results are being achieved in the adaptation of plant species belonging to the genus Amaranthus L., one of the non-traditional plants, to local climatic conditions, cultivation and processing of new verieties. It is important to study the chemical composition, biological and pharmacological properties of products obtained from the processing of localized amaranth seeds in the climatic conditions of Uzbekistan and their application in various sectors of the economy.

The amaranth plant now occupies a special place in world agriculture as one of the food, fodder, medicinal, technical and ornamental plants.

Main Part

The amaranth plant was planted in the Middle Ages in South America as a food crop along with other cereals. Tribes such as the Aztecs and the Incas lived there, and they used amaranth as a paint color in Buddhist religious ceremonies. In the sixteenth century, amaranth was abandoned as a result of the influx of Spanish tourists to South

America. By the twentieth century, a new interest in amaranth was aroused. It is widespread in North and South America, India, China, Africa and has been studied, cultivated and used as food in Europe.

In our country, 10 species of the genus Amaranthus ar common in the local language. Of these, weed (A.blitum) and machin (A.retroflexus) are common among irrigated crops as weeds. Red-tailed machin (A.caudatus) is planted as an ornamental plant in greenhouses. Wild species are also sometimes found in oases. The homeland of most of the species found in Uzbekistan is also South America, or they Central Asia for various reasons in different countries, localized [7].

Application and importance. Due to the protein content of amaranth seeds, it has great potential for use in the food industry [8]. There are 12 species of amaranth grown in the world and used as vegetables, grains, fodder and ornamental plants. Cereals include A. cruentus L., A. hypochondriacus L. and A. caudatus L. Because they are used for food.

Amaranth seeds can be used as food additives for the production of many dietary products in the form of nut-flavored flour or cereals: bread, pasta and confectionery.

Amaranth leaf is widely used as a vegetable crop, especially in India, China and Africa. Salads are made exactly from the green parts of amaranth, used as a side dish or sauce. The fooder is used in the production of high-quality feed, silage, vitamin flour and granules in the form of green mass or grain from amaranth. Green mass is well consumed by all pets, its inclusion in the diet helps to increase the quantity and quality of livestock products. Amaranth also serves as a green organic fertilizer in increasing soil fertility. Its bright red or yellow flowers are used as a very beautiful ornamental plant [3].

Medicinal properties. In ancient medicine, the nature of amaranth was defined as primarily cold and moist. After consuming it, the dry body moisturizes, softens, reduces heat and produces fluid well. If the human body is sunburned, the juice made from the leaves of amaranth, when used in combination with rose oil, protects the human body from overheating and cures headaches.

Amaranth porridge treats various scabs, itching, hot tumors and warts on the skin[1]. But it is not recommended for people with a cold nature as it reduces heat and potential. This is very useful for people with a warm nature. In modern folk medicine, fresh amaranth herb is prescribed as a mild laxative, hemostatic agent. The juice of the herb is drunk during heavy menstruation and bleeding in hemorrhoids. Amaranth oil has long been used to treat many ailments. Amaranth oil has been used in the treatment of various wounds, burns, colds, sinusits, atherosclerosis, periodontitis and gynecological diseases. Amaranth oil also has antioxidant and immune-boosting properties.

Tinctures made from amaranth leaves, young twigs and inflorescences have strong antibacterial properties and are widely used in the treatment of various inflammatory diseases.

Chemical composition: Amaranth leaves contain more vitamin C than other vegetables and melons and relatively less carotene. High quality protein in amaranth leaves accumulates up to 29% of dry weight.

The main feature that distinguishes amaranth oil from all other known oils is its high content of physiologically active components such as phytosterols and squalene. The chemical composition of amaranth oil is unique, it contains the most important biological components – tocopherols (112-192 mg%), squalene (2,4-8,0%) and carotenoids (0,45-1,12 mg%) are available. Squalene is recognized as the most important component of antioxidant protection that serves to regulate lipid and steroid metabolism in the human body [2]. Squalene produces a number of vitamin D, all steroid hormones, which are an important component of cholesterol in the subcutaneous tissue, its concentration increases sharply when damaged, which indicates its protective role.

When all of the above biologically active ingredients are added to cosmetic emulsions, they increase the value of amaranth oil. Consequently, amaranth oil allows to achieve an antioxidant effect with significantly lower amounts of vitamin E. This eliminates the risk of overdosing it. Vitamin E of amaranth oil lowers blood cholesterol levels, increases the elasticity of the vascular wall, significantly reduces the risk of thrombosis.

Amaranth flour contains about 0,2 % of vitamin E in the from of the active cotrienol [5]. Amaranth has long been used in folk medicine for the treatment of various biologically active substances.

Biological properties. The amaranth plant is a genus belonging to a small family of amaranthus called the flower-rich roses. About 65 genera and about 850 species of the family Amaranthacea are annual and perennial grasses found in tropical and subtropical regions of America and Africa, but among them are semi-shrubs, shrubs and lianas. Amaranth is annual, well-developed shoot root system, the lateral roots are mainly distributed in the plowed layer of soil. The main root is conical, the size of the thickened part does not exceed 5-10 cm.

The stem of the amaranth is erect, branched at different levels, 1,5-3,5 cm thick, round in some cases hollow. It grows up to 2,5-4 meters in height. Amaranth leaves are elongated, often elongated – elliptical, alternate at the base or opposite, whole and leafless. The bundles of leaves at the top of the stem are short, allowing the plant to enjoy full sunlight. The leaves on the lower part of the stem grow in a long band from the shade of the upper leaves. The color of the leaf vaties from green, yellow and red. Amaranth inflorescences form inctricate rosette inflorescences in yellow, green, red

and purple. Then mature inflorescences is 30 cm long and 15 cm in diameter. Weight up to 1 kg. The flowers are small, consisting of three petals, numerous, actinomorphic, unisexual sometimes with bisexual flowers. The fruit is ovoid and opens transversely. The plant is called amaranthus in Greek because its dried petals are preserved in its fruit.

A bush of amaranth produces more than 500,000 seeds. The seeds are very small, smooth, strongly shelled, well adapted to fall from the fruit [4]. Amaranth grains are not included in the cereal family because they have fake grain properties.

Amaranth seeds are demanding to heat and light. The seeds germinate well in laboratory conditions at +23, +25° Celsius, the weight of 1000 seeds is 0,67 grams [6].

Conditions and methods of research: Amaranth seed germination was studied in Termez in room conditions in two types of ordinary soil and biohumus.

Research results: Observations revealed that sown seeds germinated 84% in normal soil and 95% in biohumus.

Conclusion

Based on the analysis of the literature and the experiments, it can be said that the plant has high seed germination and can be grown in Termez conditions.

Thus, amaranth is a plant rich in nutrients and vitamins, which provides the human body with the necessary active compounds, and can be included in the daily diet.

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