



BIOLOGY AND COMPONENTS OF ABU JAHL WATERMELON

Mirzayeva Zubaydakhon Odiljon qizi¹

Axmadjonov Qudratillo Mashrabboy ugli²

Andijan Institute of Agriculture and Agrotechnology

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ABSTRACT

Was investigate the biology and components of bitter water melon. The plant has growth normally, of them 30-35% was flowered and matured. The components of fruit has been 8-9 % sugar and 1,0 – 1,5 % dry organic components, as glycosides which hailed for lowering blood sugar.

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¹ Doctoral Student, Andijan Institute of Agriculture and Agrotechnology, Andijan, UZB

² Master, Andijan Institute of Agriculture and Agrotechnology, Andijan, UZB

There are more than 500000 plant species on Earth, and their properties have not been fully studied. The plant world has long been used by humans for their own purposes. Although their healing properties have not been fully studied, they have been carefully studied by humans since ancient times because they have different properties. One of the main properties of plants is their healing properties. One such plant is the Abu Jahl watermelon, which is found in East and Central Asia. Its fruit contains a substance with a very bitter taste, which local doctors have used to get rid of various parasitic worms that live in the human intestine. In Oriental medicine, Abu Jahl watermelon is also used to improve and treat the functions of the liver, kidneys and spleen. The healing properties of watermelon were described in detail by Abu Ali Ibn Sina from Hippocrates and later physicians.

The origin of watermelon is the Middle East and India, 7 species are still known. Two of them are cultivated and consumed as food. Ripe fruits contain 10-12% of sugars, as well as small amounts of medicinal compounds. Among them, the amino acid citrulline is more common in the peel of watermelon in improving kidney function and as a diuretic.

There are also wild species of watermelon, including the bitter watermelon *Bryonia alba cucurbitaceae*, which is found mainly in Asia and Africa, and its fruit contains a very bitter substance. The homeland of this bitter watermelon is the Kalahari Desert, which is now found in the wild in South Africa, the Arabian Peninsula, and Iran.

In Africa, the fruit of this plant is fertile, though not very large. The fruits ripen and dry in the sun. The seeds are spread far away by the wind. When watermelon seeds fall to the ground, they germinate under favorable conditions and new fields are formed. In drought years, however, such peaks are greatly reduced.

Watermelon stalk is a stem herbaceous plant that grows up to 2-4 meters in height and grows on the ground or in trees with the help of stalks. The leaves are broadly ovate or broadly heart-shaped, 5-7-lobed or angular toothed-edged, arranged in a series at the base using a band. Small, green, yellowish, pale yellow or bluish-yellow, unisexual flowers are located on the thyroid inflorescence.

The name of Abu Jahl watermelon in the east also means that it has a bitter taste. Watermelon has been grown in Central Asia since ancient times. But this watermelon grows in its homeland as a perennial herbaceous legume. In Central Asia, it is grown as a cultivated annual legume. A complete definition of its systematic place in botany is required. Our hypothesis is that the Abu Jahl watermelon grown in Central Asia can be considered as an annual cultural variety of air-conditioned watermelon as a result of natural selection. The reason is that the watermelon grown in our country differs little in many respects from the varieties grown for fodder.

According to literary sources, watermelon contains a number of secondary biochemical compounds, along with sugars and pectin. The root contains glycosides brionine, brionidine, briomaride, briobioside, cucurbitacin from bitter substances, up to 1.5% alkaloids, saponins, starch, organic acids, resins, additives and other substances.

In folk medicine, the root decoction is used as a painkiller in gout, boils, polyarthritis, myositis, plexitis, as well as to stop bleeding, relieve cough, treat wounds. Powdered dried roots are used to get rid of freckles, rashes, as well as prescribed as a diuretic, lowering blood pressure.

Tinctures made from the root are also widely used as a means of lowering the temperature, vomiting and exfoliation. In addition, it has been used as a medicine for headaches, boils, epilepsy, hemorrhoids.

We planted Abu Jahl watermelon seeds in a small area of 80 x 120 cm in April 2022. The plant sprouted in 8-10 days. The processes of growth and development were carried out on the basis of accepted phenological observations.

In another variant, watermelon seeds were harvested in a greenhouse in small pots in March and transplanted to the open field on April 15 at the same time according to the above scheme. By this time the seedlings had produced a third true leaf. In practice, this option was a month earlier than when the plants were planted in the open.

According to the results of phenological observations, the plants grew well in the conditions of Andijan region, no infestation with aphids and other plant diseases was observed. Although the growth and development processes went a little earlier than usual in the early planted watermelon, the first flowering was observed in the second half of June in the variant planted in ordinary soil.

Flowering was very slow and at the same time it was noted that only 30-35% of the plant bloomed only 1-3 in 1-1.5 months. Vegetative organs were observed to grow very strongly in August. Although the branched stalks of some plants were found to exceed 5-6 meters, by September they had grown to more than 10 meters.

The growth and development of watermelon continued until the end of October. The size and weight of the fruit increased. The largest watermelon was observed to weigh more than 2-3 kg. Most fruits weighed around 1-1.5 kg.

The bitter glycoside in Abu Jahl watermelon is not present at all in the seeds, stems and leaves of the plant. After pollination of watermelon, it was observed that with the formation of the primary fruit, a bitter substance was formed. During the ripening process of watermelon, it was observed that the bitterness in its composition decreased slightly. But when we checked the initial composition of ripe watermelon fruit, it was found that the sugar content in it reached 8-9%. It was observed that the glycoside is more in the layer of the skin than in the main part of the fruit, and there is no synthesis in the epidermis of the outer layer.

The glycosides in bitter watermelon were found to be insignificant during watermelon storage and boiling. However, it can be checked for the presence of a very physiologically active substance in a simple way: if a drop of watermelon juice is added to a cup of tea, the color of the tea immediately turns dark.

Watermelon juice has been used in folk medicine for the treatment of many diseases, here are some of them.

The fruit of Abu Jahl watermelon is sometimes used in folk medicine in cases of fever,

shaving, ie in the treatment of diseases of the ear due to sputum, in the treatment of eye diseases, in addition to a pill that cleanses the brain.

Abu Jahl watermelon flesh is also included in the composition of rushnoyo (eyeshadow), which is used to treat red or blue spots in the eye.

Watermelon flesh has also been added to the herbal medicine, which cleanses the body of impurities. In the treatment of paralysis, which is a disease of sputum, Abu Jahl watermelon flesh has been used.

This watermelon flesh is also useful in the treatment of headaches, as well as in the treatment of mental disorders caused by cold and moisture.

Abu Jahl watermelon flesh was also added to the anti-epileptic nasal spray. Ibn Sina used it as an antidote in the treatment of wheezing, shortness of breath, standing breathing. Twice a month, when the disease worsened, he prepared a hub medicine by adding watermelon flesh together with other medicinal plants and gave it to the patients.

The Arabs drank Abu Jahl's watermelon root to the person who was bitten by the scorpion. Even in the treatment of toothache, Abu Jahl watermelon flesh was added to the medicine.

In modern medicine, a decoction made from the root of Abu Jahl watermelon is used for bathing in bod disease. Preparations made from fresh roots are part of a complex drug called "Akofit", which is used to treat radiculitis, neuritis, plenitis, rheumatism.

It is known that many people around the world today suffer from diabetes. Information about the successful use of bitter melon in the treatment of secondary diabetes in the United States can be found in the world media. German pharmaceutical company Florish is developing several types of antidibetic drugs based on bitter melon.

There are no reports that Abu Jahl watermelon has been used against diabetes. Due to the fact that the family and origin of melons and watermelons are the same, the presence of glycosides present in melons in watermelons is inevitable in accordance with the phylogenetic law. That's why we've been testing bitter watermelon for two years in diabetic volunteers. The results are positive, and we have statistical and documented data that the blood glucose level returned to normal within 7-10 days in patients who consumed watermelon juice.

In short, Abu Jahl watermelon juice has long been used by doctors to treat some human diseases, but has not been used to treat diabetes. Our research focuses on a comprehensive study of the biology, agronomics and biochemical composition of watermelon, as well as the development of powder and tablet technology for watermelon juice, as well as all the healing properties of watermelon in collaboration with relevant medical institutions.

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