

## **BLACK MARSHMALLOW - MALVA SYLVESTRIS SSP MAURITANICA (L.)**

It circulates as:

Leaves of Black Marshmallow - Malvae Folium

Flower of Black Marshmallow - Malvae Flos

The above-ground part of the plant over flowering - Malvae Herba

It is an extremely common plant, found in all continents, all around Kosovo, usually found by sidewalks, in landscapes, gardens, wastelands, etc. The leaves and flowers are harvested; until now, only the wild forms have been harvested. The organized cultivation of the black marshmallow has recently begun to ensure higher quality and a higher standard. In organized cultivation, the sought-after type of leaves and flowers for harvesting are those that are bigger on average than the wild, natural growing types.

### **Morphological and Physiological Characteristics**

Plants that are two years old or older with a branched stem, round, with vertical height up to 1.5m, green top, and branched in the lower part. The roots are axial, branched and developed weakly. The leaves have different sizes; in the bottom are bigger and they get smaller as we get closer to the top of the plant. Flowers are developed in the armpit of the leaves which have a dark violet color. They flower during a long period; from May to autumn. In our conditions, the plants are not endangered during winter climate. However, the plants will be damaged in extreme winter conditions. In the autumn it begins to develop earlier because the leaves resist early spring frosts. Please see photo:



### **Chemical composition and the uses of the Black Marshmallow.**

The leaves and flowers of the black marshmallow contain Glycoside (up to 10%), tannin, organic acids, etc. Its early uses were as a medical plant, while now, it is used as tea when suffering from respiratory tract inflammation and it is also used as a cough suppressor.

### **Conditions for Success**

**Climate** - the wild version of the plant can be found anywhere, while the cultivated version prefers soil that have abundant sun-exposure and that are protected from strong winds.

**Soil** - Black marshmallow does not have special needs but optimally, it prefers soil that is light, fertile, and with a good flow of water and air/winds.

### **Cultivation**

**Plant Circulation** - 1-year old plants can be cultivated in circulation but they can handle mono cropping as well. In the same surface/parcel, it can be cultivated 3-4 years, while for pre-culture, it prefers the plowed crops.

**Soil Preparation** - main soil work should be done in autumn while additional supplemental work should be done in the spring, just before the planting of the seed or of the seedlings.

**Reproduction** - the black marshmallow reproduces mainly via seeds or seedlings. The direct planting with seeds is done during the beginning of April; the distance between rows is 60-70cm while the distance between columns is 20-30cm. For one hectare, would need 1.5 - 2kg of seeds. The seeds would be planted 2cm deep; 15-20 days later the plant will have 4-5 permanent leaves where the first plowing will take place and the distances between rows and columns are set.

**Planting via seedlings** - the production of the seedlings is done in hot parcels/tunnel greenhouses, in the end of February or in the beginning of March and for 50-60 days they can grow and develop, and then they can be transplanted. Seedlings in this period have 4-6 leaves. The transplantation is done in April; the distance between rows is 70cm while the distance between columns is 20-30cm.

### **The care-taking process**

Includes plowing between columns and watering

**Plowing** - keeps the soil soft and clean from weeds. It is important in the beginning of the development of the plants. The number of plowings to take place depends on the type of soil but usually is applied two or three times during the vegetation period.

**Watering** - this type of plant needs watering, especially during its early stages. It reacts well to water in dry weather. Excessive humidity has a negative impact and it can result in mold and it attacks the leaves.

**Harvesting** - Begins in June throughout late autumn. The longevity of the harvesting period depends on the climatic conditions and on the soil's humidity during the summer. Unlike for the flowers, the harvesting of the leaves begins in July.

**Drainage** - After harvesting the flowers, it is optimal to dry them in a thermal dryer in 50 degrees Celsius temperature. In natural conditions it should be protected in closed quarters with dark/tinted surrounding plastic/glass. For 1kg of dry flowers, we need 8kg of fresh flowers. The leaves are dried in 60 degrees Celsius temperature; to extract 1kg of dry leaves, we need 5-6kg of moist leaves. The harvesting should be quick so that we can preserve the beautiful natural color. Tunnel greenhouses can be used for drainage as well.

**Yield** - for 1 hectare is 500-800kg of dry flowers, 2000-3000kg of dry leaves. The price of dry flowers is 10-12 Euros per kilogram.