

## BAZELLA RUBRA. USEFUL PROPERTIES AND CULTIVATION TECHNOLOGY

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<https://doi.org/10.5281/zenodo.7878698>

**Annotatsiya.** Maqolada vatani tropik hamda subtropik mintaqalar hisoblangan

**Abstract.** The article discusses the types, useful properties, planting and methods of reproduction in our area of Basella, as an ornamental liana, which is the center of origin in tropical and subtropical regions.

**Key words:** basella, liana, exotic plants, vegetative organs, vegetable plant, medicinal properties.

Basella is a perennial liana found in tropical and subtropical regions of America, Africa, Madagascar, India, New Guinea and the Pacific Islands. It reaches 10 m in length, in southern areas with a tropical climate, it does not exceed 1-2 m, in cooler regions it is grown as an annual plant.

It is also called "Malabar spinach" (*Basella alba*), "Indian spinach", "Creeping spinach", "Ceylon spinach" (*Basella rubra*), because of its similarity to spinach, and the leaves can also be eaten as a vegetable.

For exotic purposes, mainly 2 of its types are used:

A) White Basella (lat. *Basella Alba*) is a widespread species, first bred in Southeast Asia. Its stem is fleshy, and the leaves are soft and juicy. Its seeds can be found on sale. Stems and leaves are reddish or green. The leaves are long-stemmed, whole, fleshy, reach 15 cm in length and 12 cm in width. The shape is somewhat heart-shaped, located on the stem in a row. The flowers are arranged in a spike-shaped inflorescence, the length of which reaches up to 15 cm.

B) Red basella (Latin *Basella rubra*) is a decorative type of plant, the stem of a liana is bright red with dark red veins of green color. It differs from the white basella mainly in the color of the stem, leaves and flower.

The flowers of the basella are small, inconspicuous, in the flowering phase they can change color from pale pink to red.

The fruits of the plant are small, shiny, reach up to 0.6-1 cm in diameter. The color can be dark red, pink, even dark purple-black. The seeds are round, dark brown in color.

Basella is a light-loving plant, it can be grown on a balcony or on a windowsill in a flower garden (pot). The plant grows well in fertile soil, but does not need special care. Loves moisture, the green mass increases when water is sprayed.

Lianas can be used for decorative purposes for landscaping outdoor verandas, terraces, balconies. Since the stem grows tenacious, a vertical support is used. The stem can grow up to 2 meters per season, despite the fact that it is fragile and breaks quickly. But broken shoots can be rooted.

**Chemical composition.**

The chemical composition of basella is not fully understood. Its leaves and fruits were found to contain betacyanide pigments (betandine hexose and betandine digexose). It contains folic acid, manganese, magnesium, iron, copper, calcium, potassium, zinc, as well as ascorbic acid and vitamin A. Gomphenin I was found in the fruits. Liana stores protein (20%), carbohydrates (54%), fats (3.5%), as well as dietary fiber (9%) and ash elements (19%).

### **Medicinal properties.**

The medicinal properties of basella are due to its chemical composition. The dietary fibers contained in it normalize the work of the gastrointestinal tract, have a slight laxative property. The high content of ascorbic acid in white basella has antiviral and fast healing properties. The high content of vitamin A contributes to the rapid recovery of the mucous membranes, helps to reduce the risk of oral cancer, as well as lung cancer.

### **Application.**

The beneficial properties of Malabar spinach were known to locals hundreds of years ago, and it is one of the coveted ingredients in the national dishes of South Asia. In China white basella is called the "emperor of vegetables". Indian spinach, in particular, is very popular, and its young stem and dark green, juicy and pleasant-tasting leaves can easily replace ordinary spinach in the preparation of many dishes. Young leaves can be used in salads, omelets, fast food. In Indian, South American, Chinese cuisine, basella is considered as a vegetable plant. Since the vine has a delicate taste and smell reminiscent of ordinary spinach, it is eaten in sandwiches, as well as in salads.

In some countries, basella leaves are used as vitamin tea, for cooking vegetable soups and purees. It can even be used as an additive to seasonings such as garlic, pepper, in dishes.

The dark fruits of the vine are used for making jelly, sugar, jams, as well as other sweets and desserts. The juice from its fruits is used as a natural dye, and lemon juice enhances its coloring properties.

In folk medicine, the beneficial properties of white basella are widely used. Since the leaf is rich in fiber, it has a slight boosting effect, and can also be used during pregnancy. Low-calorie Malabar spinach (19 calories in 100 grams of product) is also suitable for getting rid of excess weight, can be included in the diet. The juice from the leaves of the plant can relieve the temperature even with malaria, and it is also used as a diuretic. Its leaves are used to treat abscesses, swelling, wounds and boils.

While the fruits of basella are used as a feminine make-up product, for application to the cheeks, on an industrial scale, this vine is used as a raw material in the preparation of printing inks.

Stems and leaves of white basella can also be consumed fresh, as they are more tender when cooking dishes and salads. Both types of basella are edible, and since Red Basella is coarser, it is recommended to boil it before use.

### **Contraindications to use.**

White basella should not be used in patients with rheumatoid arthritis, gout, kidney and urinary tract diseases. Oxalates contained in this plant, as in ordinary spinach, increases the absorption of iron, calcium and magnesium, causing not only a deficiency of these elements in the body, but also forming crystals that cause "stone" disease. It is also not recommended in cases of increased individual intolerance to basella, as well as patients with allergies to a certain component of this plant.

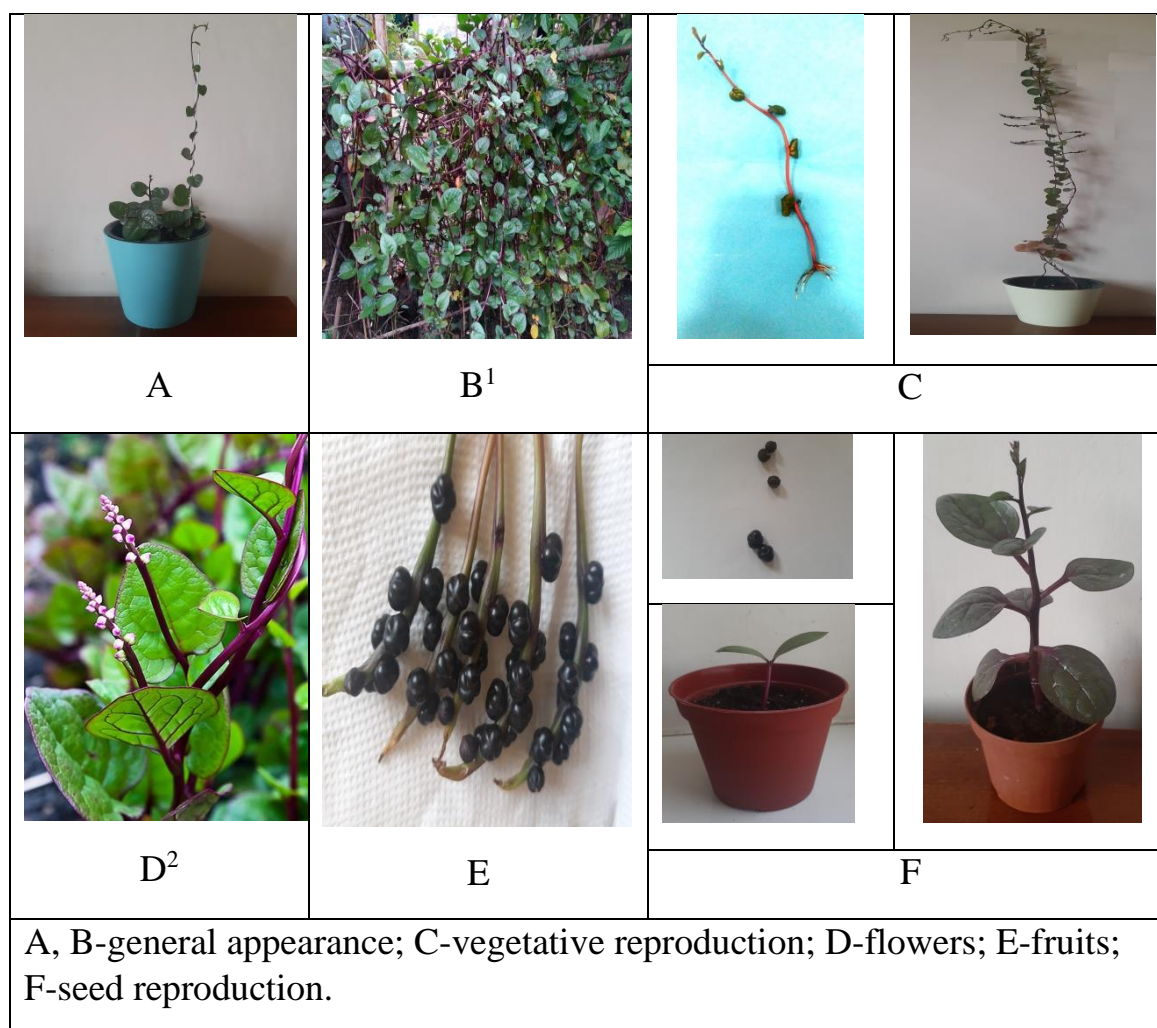
### **Reproduction.**



The plant is propagated by seeds, which are mainly sown in the soil in April-May. It can be grown in indoor conditions all year round. The germination of its seeds is high and is 80-90%.

During the experiment, mature, fleshy fruits of red basella (6 pieces), as well as seeds (2 pieces) were selected. Seeds are sown in November, in universal soil, to a depth of 3-6 cm. After 2-3 weeks, in December, germination of both seeds was observed. While, the seeds of fresh fruits germinate 2-3 months after the dormant period, for 15 days (until the end of February), 5 grains one after the other. It is worth noting that the germination time of seeds depends on the length of the day, temperature and time of year in which they were planted. It may take a shorter time to germinate in the spring and summer months, and more time in the autumn and winter months.

Figure 1



Lianas can also reproduce using stems. They develop easily in water. In the experiment, the top of vertically hanging stems, 10-12 cm long, in the amount of 4 pieces sprouted from seeds, were cut from the seeds of Red Basella in January-February. Branching was observed in the lower part of the stem. On all stems cut and placed in water, after 2-4 weeks, the germination of veins was observed.

<sup>1</sup> <https://fikusexpert.com/wp-content/uploads/2020/01/Bazella-na-uchastke.jpg>

<sup>2</sup> [https://sortseeds.ru/data/catalog\\_pic/1608296532.jpg](https://sortseeds.ru/data/catalog_pic/1608296532.jpg)

In April, it was discovered that 2 young stems 4-6 cm long, consisting of 4 leaves sprouted from seeds, took root again after 2 weeks, when they were pulled out of the soil and placed in water (1 tablet of activated charcoal must be added to the water so that the stem does not rot).

The plants sprouted from seeds in December bloomed in early March, the first fruits ripened, and the length of the vine in indoor conditions was 152-172 cm (Fig.1-V).

In conclusion, it can be said that basella is a liana that can be grown both on the infield and as a decorative flower, which has a number of useful as well as medicinal properties. It is very convenient to grow, it takes root easily, and it can be done at any time of the year. This "overseas guest" can become a part of your home, only it is necessary to protect from direct sunlight and drought in the hot season in our country.

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