

PROSPECTS FOR THE USE OF CAPERS (CAPPARIS SPINOSA L) IN MEDICINE

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Annotation: Capers (*Capparis spinosa* L.), widely known simply as capers, are a popular perennial plant. This article analyzes information about their medicinal, ecological, and industrial properties, as well as their applications in food and medicine. The paper covers the distribution, botanical characteristics, usage, conservation of this remarkable plant, and the biotechnology behind an ointment derived from *Capparis spinosa*.

Аннотация. Каперсы (*Capparis spinosa* L.), широко известные как каперсы или сокращенно каперсы, являются популярным многолетним растением. В данной статье представлена информация о его лечебных, экологических, промышленных свойствах и использовании в пищу. В статье рассказывается о распространении, ботанических свойствах, использовании этого чудесного растения, а также о биотехнологии мази, приготовленной из растения.

Keywords: distribution, medicinal properties, food, industrial use, protection and problems, cosmetics

Ключевые слова: распространение, лечебные свойства, продукты питания, промышленное использование, защита и проблемы, косметика.

Botanical Characteristics and Morphology

Capparis spinosa L. belongs to the Capparaceae family and is a semi-shrub with creeping stems and branches. The leaves are ovate, while the flowers are large, white, or pale pink. Its fruit is fleshy, red, and contains multiple seeds. This plant primarily grows in deserts, foothills, roadsides, on walls, and between cultivated fields. The seeds mature in July-August.[1] *Capparis spinosa* thrives in arid and semi-arid regions, particularly in the Mediterranean Basin, Central Asia, North Africa, and some parts of Australia. Its adaptability to harsh environments, including rocky soils, cliffs, and desert landscapes, makes it a crucial plant for dry climates. It also grows well in alkaline and saline soils, with its deep root system helping prevent soil erosion.

This plant is commonly found in Mediterranean regions, where its edible flower buds (capers) and fruits (caper berries) are highly valued. Beyond its culinary significance, *Capparis spinosa* has deep roots in traditional medicine and ecological landscaping.[1] Due to its economic value and adaptability, it is also cultivated extensively in Southern Europe, North Africa, and the Middle East. Additionally, it has been naturalized in regions like India and California.

Botanical Features and Morphology

Capparis spinosa L. is a perennial plant with trailing or climbing stems that can grow up to 1-1.5 meters. It is characterized by:

Leaves: Thick, round, or ovate leaves covered with a waxy layer that reduces water loss.

Flowers: Large, striking flowers with petals ranging from white to pink and long purple stamens that bloom in summer.

Fruits: Elongated, fleshy caper berries containing multiple seeds.

Biotechnology of Caper Ointment Preparation

Dried capers, when crushed and mixed with water, are beneficial for hemorrhoids.

Ointment for Hernia and Joint Pain

Biotechnological preparation stages:

To prepare the ointment, the following ingredients are required:

25 g caper root powder, 25 g ash, 1 tablespoon St. John's wort oil

, 10 g magnesium sulfate ($MgSO_4$), Water (H_2O) added gradually to form a paste

The mixture is applied to the affected area using stretch film and left for 20 minutes before washing off. For first-time users, the ointment should be applied three times, then once a month thereafter. After application, petroleum jelly or oil should be applied to prevent skin dryness. This ointment is highly effective for hernias in the back and neck, as well as joint pain.

Treatment for Hemorrhoids

Leech therapy is also highly beneficial for individuals suffering from hemorrhoids.[7]



1-picture. The flower of *capparis spinosa* L.



2-picture. The fruit of *capparis spinosa* L.

Capers (*Capparis spinosa*) and Their Uses

The long, pigment-containing part inside the *Capparis spinosa* flower can be collected, crushed, and mixed with water to help treat hemorrhoids.

Culinary Applications

In the food industry, the flower buds of *Capparis spinosa* are pickled and have become an integral part of Mediterranean cuisine. Their sour and salty taste enhances salads, pasta, pizza, and sauces. The fruit, known as caper berries, is also pickled and consumed as a snack.

Capers contain saponins, alkaloids, 32.9% carbohydrates, 150 mg of ascorbic acid, and 3.75% oil. The alkaloid stachydrine has been identified in its root bark and its fruit.[2] (2- picture)

Industrial and Ecological Applications

Cosmetics: *Capparis spinosa* extract is used in skincare products for its antioxidant and moisturizing properties.

Erosion Prevention: Due to its strong root system, this plant is frequently used in reforestation and soil stabilization projects.

Medicinal and Therapeutic Properties

Historically, *Capparis spinosa* has been widely used in traditional medicine due to its healing properties. It contains bioactive compounds such as flavonoids, alkaloids, and glucosinolates, which have antioxidant, anti-inflammatory, and antimicrobial effects.[3]

It is used for treating:

Digestive disorders

Relief from rheumatic pain

Supporting liver health

Health Benefits of Capers

Acts as a pain reliever

Regulates menstruation and reduces menstrual pain

Beneficial for stomach disorders and ulcers

Reduces the risk of stroke

Helps regulate the digestive system

Relieves constipation

Has diuretic properties

Helps expel phlegm

Aids in the elimination of parasites and worms

Effective against rheumatism pain

Useful for colic disorders

Beneficial for blood disorders

Has anti-tumor properties

Effective in treating hemorrhoids

Beneficial for spleen enlargement

Helps regulate liver function

Aids in dissolving kidney stones

Highly effective for gout

Beneficial for multiple sclerosis (MS)

Increases sexual potency

Alleviates pelvic disorders and reduces associated risks

Used in cancer treatment due to its ability to increase platelet count

Use in Beekeeping

Capers are a high-quality nectar-producing plant. Their flowers produce a significant amount of nectar, with a single plant generating up to 3,000 drops of honey throughout the season (May to November). [3]

Conservation and Challenges

Despite its adaptability, *Capparis spinosa* faces threats due to habitat destruction and overharvesting. Promoting sustainable cultivation practices, such as controlled harvesting and habitat protection, is crucial for its conservation. Additionally, integrating caper cultivation into agroforestry systems can benefit local biodiversity and economies.

Conclusion

In summary, *Capparis spinosa* is a remarkable example of nature's resilience, providing significant benefits to humanity. Its culinary, medicinal, and ecological applications highlight its importance. Preserving this versatile plant for future generations requires sustainable management and increased awareness of its value.

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