



Medicago sativa

Family name: **Leguminosae**Common name: **Leguminosae**Local name: **(برسيم) Barseem**

Cultivated

Role in Biodiversity

Alfalfa is an N-fixing legume. It is a good cover crop that prevents soil erosion and improve soil texture. Alfalfa leaves are used as a green manure that adds organic matter to the soil. It is often increases the yield of succeeding crops.

Alfalfa is considered an insectary, a place where insects are reared, and has been proposed as helpful to other crops, such as cotton if the two are interplanted. The alfalfa harbours predatory and parasitic insects that help protect the other crops. Alfalfa flowers also attract birds and enhance biodiversity.

Environment and Growing

Alfalfa has good adaptability to different environmental conditions. It grows best on deep, well-drained, sandy to fertile loamy soils. Some cultivars are winter hardy and known to tolerate temperatures as low as -25°C.

Growt requirements:

- Average day-temperatures 25°C.
- Annual rainfall range 600-1200 mm
- Long day season and bright sunlight.
- PH range 6.8-7.5.

Reproduction and Communication

Alfalfa plant produces racemes of small bisexual flowers, which require insect visitation for pollination. When an insect visits for pollination, it opens the keel petals and the stamens and pistil move forward, striking the insect with a force. The usual visitors have a technique to avoid this mechanism by approaching the flower from the side and inserting their proboscis in between the petals from the base of flower to reach the nectar.

Alfalfa secretes a large quantity of nectar, that lures a variety of bee species, including honey bees.

Life span

Alfalfa is a perennial legume which normally lives four to eight years, but can live more than 20 years, depending on variety and climate.



Size

Alfalfa grows up to 1.5 metre high.

Parts



Stems are erect, much branched, up to 1 m high, glabrous or hairy in the upper parts.

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Leaves are trifoliate, with obovate leaflets, 10-45 mm long and 3-10 mm, margins serrate in upper part.



Deep-rooted plant. Roots can reaches down to 4 metres or 7-9 metres in well drained soils.



Flowers are blue or purple in an oval or rounded racemes.

Fruits are 2-8 seeded curly pods, turning from green to brown, generally 2-4-coiled, and finely hair.

Seeds are yellow or brown, 10-20, ovoid, 1-2.5 mm, and smooth.

INTRODUCTION

Herb

Medicago sativa, alfalfa, is a perennial herbaceous legume native to the Mediterranean basin and southwest Asia. It is an important domesticated forage plant and known as “Queen of forages” due to its worldwide adaptability, high yield potential and quality. It is now cultivated worldwide. In many countries, alfalfa grown as a pure stand or with companion legumes or grasses as animal food or as a green crop as it improves nutrient levels in the soil. This plant is characterized by a bluntly angular stem, clusters of small purple flowers, and fruits which spiralled in two to three turns containing 10-20 seeds.

In Sudan, alfalfa is cultivated northern and central parts of the country mainly in Khartoum States, North Kordofan State, Northern State and River Nile states. Khartoum produces more than 50% of the country's total forage crops, particularly alfalfa.

LIVELIHOODS / CULTURE

Cultivation

Land preparation: There are specifications that farmers follow when choosing land for planting alfalfa, which are:

- Deep, well-drained lands
- Lands that have not been planted with alfalfa for at least two years
- Have no epidemic history with Hamoul.
- Lands that are not infested with perennial weeds, and if they are found, they must be controlled before planting. In traditional cultivation, Basins or **ahwad** and rows or **sarabat** are used to grow alfalfa. The land is plowed and the soil is softened by breaking up large clumps, then the land is leveled to avoid uneven irrigation so that the plants are not drowned or exposed to drought. In the case of mechanized farming, the land is prepared in straight rows irrigated by streams or canals, or circularly irrigated by pivoting.

Seed sowing: November is the best time to plant alfalfa in Sudan, especially in Khartoum State. In traditional cultivation, seeds are scattered and buried by hands.

Watering: The first irrigation is deep but gentle. In this case the moisture will reach the top of the **sarabat** without seeds drifting. Irrigation is done every 7-10 days taking into account the season and prevailing temperatures. It is recommended during the first three months not to space the irrigation periods more than 7 days.

Cutting or harvesting: The first cutting is taken after 9-10 weeks from planting or when 10-50% of the flowers have flowered. Subsequent cutting is usually done every 30 days when the height of the plants reaches about 45 cm high. The plants are cut manually at a height of 5-7 cm from the soil surface. The expected number of harvests in the first year is 5-6 harvests, and in the second and third years 8-10 harvests.

[Alfalfa cultivation by pivot irrigation in northern Sudan](#)

<https://youtu.be/M7pyz0pGVho>

[Alfalfa harvesting in northern Sudan](#)

<https://www.facebook.com/watch/?v=1100634531077451>

Cultural Value

Alfalfa which is locally known as **Barseem** is the major source of protein for livestock. It is a basic component in rations for dairy cattle, beef cattle, horses, sheep, and goats.

Alfalfa fed honey bees produce excellent crop of high-quality honey. The estimated yield of nectar is 416-1933 pounds of nectar per acre.

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Cultural Expressions

Information not available.

THREATS

- Drought is recognized as a major challenge limiting alfalfa production.
- Alfalfa responds well to irrigation but does not tolerate waterlogging or soil compaction.
- Some pests, such as the alfalfa weevil, aphids, and potato leafhopper, can reduce alfalfa yields dramatically.

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