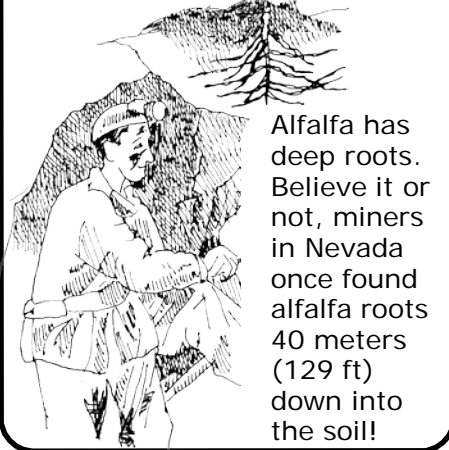


ALFALFA Science Page

DID YOU KNOW?



Alfalfa has deep roots. Believe it or not, miners in Nevada once found alfalfa roots 40 meters (129 ft) down into the soil!

ORIGINS

Alfalfa is native to Asia, Europe, and North Africa. The Medians, who lived in what is today Iraq and Iran, grew alfalfa 3,300 years ago.

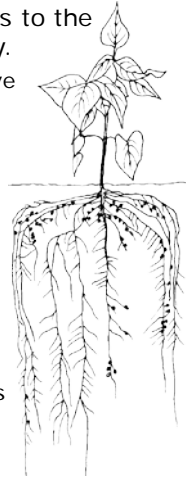


Alfalfa is sometimes called "Queen of Forages" because it is the oldest known plant used to feed animals.

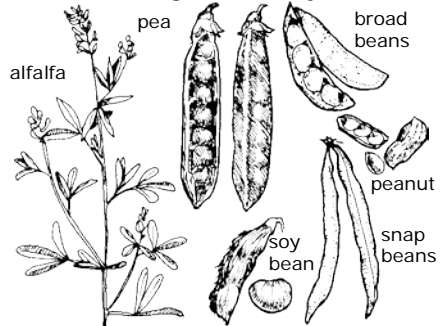
CLASSIFYING ALFALFA

Alfalfa belongs to the legume family.

All legumes have their seeds in pods. Many legumes have root nodules where special bacteria, called Rhizobia, live. These bacteria can take nitrogen from the air and change it into a form that plants can use.



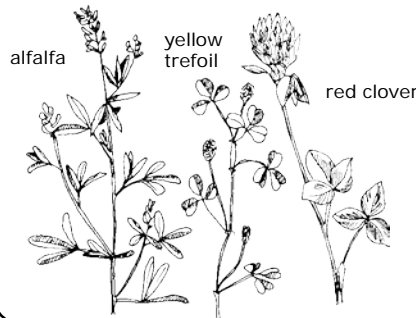
FAMILY Fabaceae (Legume Family)



There are about 18,000 species in the legume family, which includes peas, beans, clover, and peanuts.

GENUS Medicago

In Latin, "medica" means native of Media. Alfalfa was first grown by the Medians.



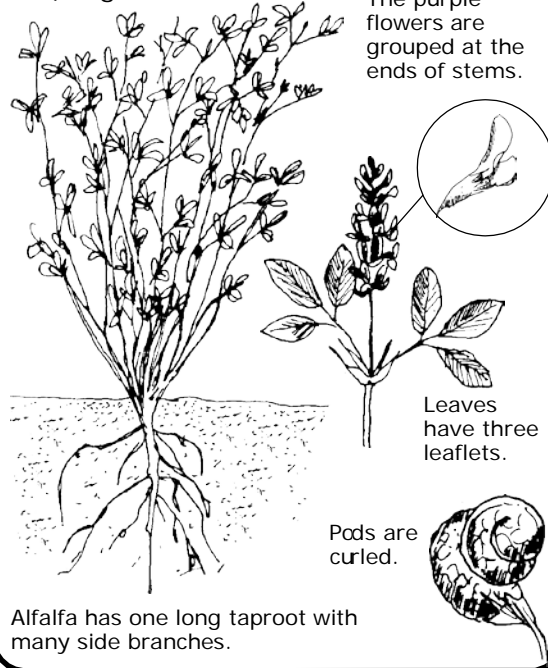
SPECIES sativa

In Latin, "sativa" means that which is sown.



THE ALFALFA PLANT

Alfalfa grows to about 1 meter (about 3 ft) high.



The purple flowers are grouped at the ends of stems.

Leaves have three leaflets.

Pods are curled.

Alfalfa has one long taproot with many side branches.

GROWING ALFALFA

If you are not using a section of your garden, you can plant alfalfa to protect and improve your soil.

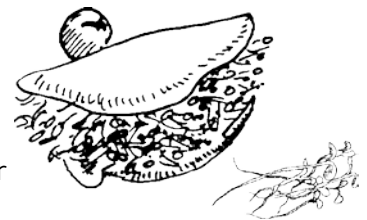
When I turn this alfalfa under, it will add lots of organic matter and nitrogen to my soil.

Sow in spring or summer. Sprinkle 2-3 grams of seeds per square meter (about 1 oz. per 12 sq. yards). Do not allow the alfalfa to grow for more than a year or it will be difficult to dig up. Turn it under and allow it to decay for six weeks before planting crops.



USES

Alfalfa is not only grown for animal food. Many people eat alfalfa sprouts in salads. Some people even eat the leaves, either cooked or raw.





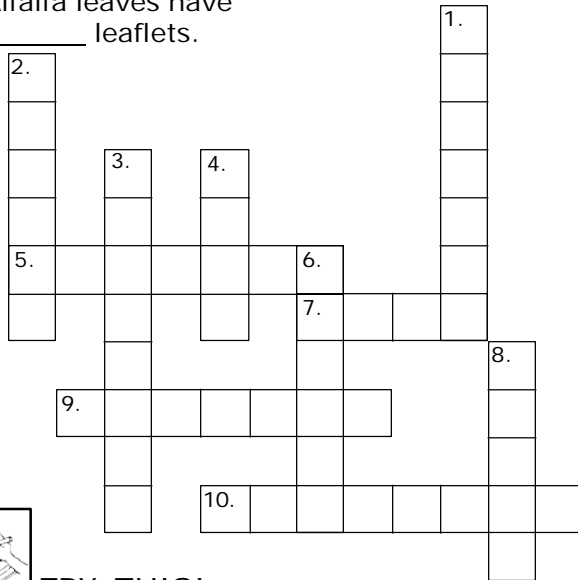
CROSSWORD PUZZLE

Across

- Alfalfa was first grown by the _____.
- All legumes have their seeds in _____.
- Alfalfa has one very long _____.
- Planting legumes can add _____ to the soil.

Down

- Alfalfa is the oldest known plant used to feed _____.
- Alfalfa belongs to the _____ family.
- The scientific name for alfalfa is _____ sativa.
- To improve your soil, you can grow alfalfa for not more than one _____, and then turn it under.
- People eat alfalfa _____ in salads.
- Alfalfa leaves have _____ leaflets.



TRY THIS!

INVESTIGATE THE RISKS OF EATING RAW ALFALFA SPROUTS

Have you ever eaten raw alfalfa sprouts in your salad? You can find them in grocery stores. You can also sprout your own by keeping the seeds damp and well rinsed. In about 3 days they will sprout tiny leaves and roots.

However, you should be aware of the risks of eating raw sprouts, whether they are store-bought or home grown. They may contain bacteria that can cause food poisoning. Most people get over food poisoning in a few days, but some people can become gravely ill.

There have been several outbreaks of food poisoning from raw sprouts. That is why the United States Department of Agriculture (USDA) is advising people not to eat raw sprouts if they wish to reduce the risk of food poisoning. This advice is most important for the elderly, children, and people who are already sick.

Do some research on the internet to find out why raw alfalfa sprouts can cause food poisoning. Try to find the answers to these questions and to questions you come up with on your own. What bacteria grow on alfalfa sprouts? Where do they come from? Are there ways to get rid of the bacteria? What are the symptoms of food poisoning? How should the symptoms be treated? What are the causes of food poisoning? How common is food poisoning? What steps can you take to prevent food poisoning from other foods, such as meat? Make a poster about food safety.



SPOTLIGHT ON RESEARCH

Alfalfa: a Legume with Many New Uses

For thousands of years, alfalfa has been used to feed horses, cows, and other livestock. It has also been used to improve soils. Because it is a legume, it can grow on poor soils and add nitrogen to the soil. But now scientists in Minnesota are developing new varieties of alfalfa with important new uses. In this changing world, gasoline and plastics may become too expensive to make from oil. In place of oil, new varieties of alfalfa may be able to supply the raw materials to make fuel and plastics. For example, some varieties are being developed that have a lot of sugar in the stems, which can be used to produce fuel. Scientists also are developing alfalfa varieties that make beads of plastic in their leaves. They are still trying to figure out how to extract the plastic.

And these are not the only possible new uses for alfalfa! Some scientists are developing ways to use alfalfa for cleaning up soil and water pollution. Alfalfa is very good at taking up excess nitrates in soil. If soil has excess nitrates, rain may carry these nitrates into ground water or into lakes and rivers. When people drink water with excess nitrates, they can get health problems. But if the water high in nitrates runs through a field of alfalfa, the roots take up the nitrates and clean the water. Other new varieties of alfalfa can take up other pollutants, such as atrazine, a longlasting chemical used to kill weeds.

Source: Comis, D. (2002). The Alfalfa factory: a remarkable perennial legume find many uses. <http://articles.findarticles.com/p/articles/mi_m3741/is_7_50/ai_90117980>



JOKE

Knock, knock.
AI.

Who's there?
AI who?

AI-fall-fa you because I think you're so cute!

Crossword puzzle answers
Across: 1. animals; 2. legumes; 3. Medicago; 4. year.
Down: 5. Medians; 7. pods; 8. three.
9. sprout; 10. nitrogen.