

BUCKWHEAT Science Page

DID YOU KNOW?

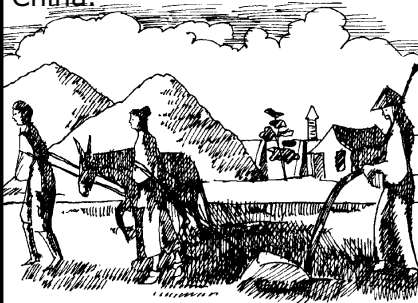
Roasted buckwheat is called kasha. You can boil kasha until it is soft, and eat it as a cereal or add it to many main dishes.

Kasha is a basic food in Russia and Eastern Europe.



ORIGINS

Buckwheat is native to the Himalayas in southern China.



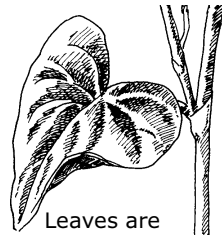
The Chinese were growing buckwheat over a thousand years ago.

THE BUCKWHEAT PLANT

The buckwheat plant grows to about one meter high.



The white flowers are at the ends of branched stems.



Leaves are shaped like triangles.



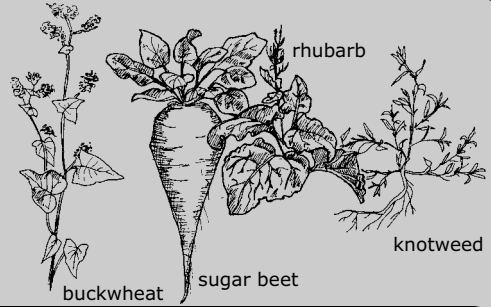
Fruits are shaped like little pyramids.

CLASSIFYING BUCKWHEAT

FAMILY

Polygonaceae (Buckwheat family)
In Greek, this means "many joints." The stems have many joints or swellings.

There are about 1,000 species in this family, which includes many edible plants.



GENUS

Fagopyrum

In Latin, this means "beech wheat." The fruit looks like the nut from a beech tree.

buckwheat fruit



beech nut



SPECIES

esculentum

In Latin, this means "edible."



GROWING BUCKWHEAT

Plant in the spring or fall. Sprinkle about 1 tablespoon of seeds per square meter. Rake in and water.



In two weeks buckwheat will make a dense cover over the soil. I'll cut it when it flowers. It will rot quickly and add lots of organic matter to the soil.

USES

Buckwheat is a multipurpose crop. It makes a good cover crop, because it smothers weeds very well. You can feed it to animals. You can roast the fruit to make kasha, or grind it to make flour.

In Japan, noodles called "soba" are made from buckwheat flour.



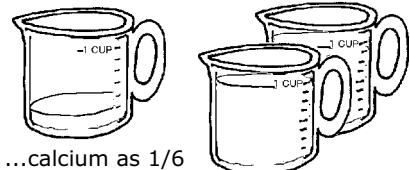
NUTRIENT VALUE

Buckwheat contains plenty of protein, B vitamins, and minerals.

One cup of buckwheat flour has the same amount of...



...protein as 3 hot dogs.



...calcium as 1/6 cup of milk

...potassium as 2 cups of milk



WORD SCRAMBLE

Learn about buckwheat when you unscramble the letters in bold:

(1) **cukethbaw** is a (2) **elutusmipro**p crop. It makes a good (3) **rvoce proc** because it smoothers weeds. You can feed it to (4) **nasalim**. You can (5) **drign** the fruits to make (6) **rufol**. You can also (7) **sorat** them to make (8) **shaka**.



SPOTLIGHT ON RESEARCH

Bringing back buckwheat to New York State

Dutch settlers brought buckwheat to New York State in the 1600's. For the next 300 years, it was a popular crop among New York State farmers. They grew buckwheat both for food and to feed animals. Each year, farmers kept the seeds from plants that grew best and replanted them. Thus, the buckwheat became well-adapted to the local climate and soils. But at the beginning of the 20th century, high-yielding varieties of corn and wheat were developed, so farmers began to grow these crops instead of buckwheat.

In the 1990's, a plant breeder in New York State and a plant breeder in Manitoba, Canada began working to produce high-yielding varieties of buckwheat for New York State. At that time, there were some Japanese varieties of buckwheat that grew very well in Manitoba, but they did not grow well in New York State. Summer days are shorter in New York than they are in Manitoba, and short days trigger buckwheat to stop producing new flowers and start making seeds. Thus, in New York, the Japanese varieties only produce a few flowers

before making seeds, so yields are poor.

The plant breeders reasoned that a buckwheat variety for New York should make the most of a short growing season. It should make big leaves early in the season. Large leaves can produce more food that the plants can use to produce more flowers and seeds.

The plant breeders took the most promising varieties from Manitoba and grew them in New York. They measured leaf growth, date seeds ripened, and seed size. They also calculated the ratio of seeds to plant by weighing the dry plant and seeds and then weighing the seeds alone. Then the plant breeders grew varieties with one or more desirable traits, and crossed them. (They used pollen from the flowers of one variety to pollinate the flowers of another variety.) After making several crosses, the plant breeders successfully developed three high-yielding varieties of buckwheat for New York State.

Source: Bjorkman, T. (2004). Selecting Improved Buckwheat for the Northeast. New York State Agricultural Experiment Station. <<http://www.nysaes.cornell.edu/hort/faculty/bjorkman/buck/Buck.html>> (Also personal correspondence with Dr. Thomas Bjorkman, Department of Horticultural Science, Cornell University, February 9, 2004)



QUOTE

"Kasha is on the spoon, baby will walk soon."

Russian saying

These words are spoken when kasha is fed to children when they are baptized.



Word Scramble Answers: 1. buckwheat; 2. multipurpose; 3. cover crop; 4. animals; 5. grind; 6. flour; 7. roast; 8. kasha



BROCCOLI STIR-FRY WITH SOBA

This dish comes from Japan, where it is considered polite to slurp up the noodles!

Serving size: 4-6

Ingredients

- * 2 tablespoons oil
- * 2 bunches of broccoli
- * 1 cup diced scallions
- * 2 tablespoons minced ginger
- * 4 cloves minced garlic
- * 1 package soba (buckwheat noodles)

Instructions

1. Cook the soba according to the directions on the package.
2. Slice broccoli on the diagonal for stir-frying.
3. Using a small amount of broccoli at a time, stir fry in a little oil, along with scallions, ginger, and garlic. Add more oil if needed.
4. Serve the stir fried broccoli over the soba.