



Mighty Smooth Bean



Soybeans are produced for food, consumer and industrial products, and livestock feed. Soybeans are one of our nation's most fascinating and versatile edible plants.

Even though soybeans have been a major food crop in China for over 1,500 years, soybeans were not grown in our country until the 1800's. At first soybeans were small, and their uses few, until a scientist named George Washington Carver began to find more and more uses for them. By 1904, he developed over 300 useful by-products from soybeans.



Soybeans touch our lives hundreds of times a day ~ when we eat, read a newspaper, shower, and even when we do the laundry. Some of the products made from soybeans include: cereal, cooking oil, chocolate, hot dogs, candy, baby food, flour, soup, ice cream, vitamins, cookies, printing inks, soap, shampoo, fabric softener, paints, plastics, cosmetics, and pet food.

Some other uses for soybeans that scientists have discovered are: biodiesel fuel, soybean crayons, soy ink, and building materials.

Biodiesel Fuel ~ Biodiesel fuel, which can be used in any diesel engine, is made from soybean oil. This fuel is a clean-burning, renewable, and biodegradable fuel that can help cities meet federal clean air standards. Unlike petroleum diesel, biodiesel fuel emits a much lower amount of pollutants, is sulfur free, and does not produce explosive vapors. Biodiesel fuel also provides similar horsepower, torque, and miles per gallon as petroleum diesel.



Soybean Crayons ~ Soybean crayons are made with soybean oil instead of petroleum based paraffin wax. Soybean crayons provide brighter and smoother colors that do not flake. These crayons can be found under the Prang Fun Pro™ Crayons brand.



Trivia Facts

- The average American consumes seven gallons of soy oil annually.
- Soybean lecithin is used in the production of Hershey's chocolate.
- Soybeans are the highest natural source of fiber.
- Henry Ford grew soybeans to make enamel paint for his cars. This paint is still used today.

Joke

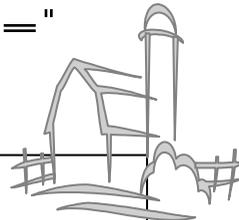


What kind of beans won't grow in a garden?



Joke Answer

Jellybeans



Farm Facts

- There are over 2500 varieties of soybeans that come in many sizes, shapes, and colors.
- Soybeans grow on bushy plants that are about 2 ½ feet tall.
- Each soybean plant grows 60-80 hairy pods.
- A bushel of soybeans weighs 60 pounds.



Soy Ink ~



Soy ink is also made with soybean oil. Newspapers, commercial printers, and government agencies use soy ink instead of petroleum-based ink, because it prints more paper per pound and offers better color reproduction.

It is also non-toxic, so it provides a safer environment for their employees. In fact, over 90 percent of all U.S. daily newspapers are printed using soy ink.

Building Materials ~ A biocomposite building material is made with soy flour and recycled newspaper. A fourth grade student from Minnesota



contributed to inventing this new building material. Scientists continued research and development until they produced a board similar to wood, harder than oak, and lighter than granite. Biocomposite building material can be used in countertops, furniture, plaques, and much more.

From Kids, Crops, & Critters, Illinois Farm Bureau, an Ag in the Classroom Project, Grades 4

What Do You Remember?



1. What scientist discovered over 300 uses for soybeans?

2. What 3 products that contained soybeans surprised you the most?

3. Biodiesel fuel is made from _____.
4. Soybean crayons are made by the _____ company.
5. Ninety percent of U.S. newspapers are printed with _____.
6. A new building material called biocomposite is made from _____ and _____.

A Layering Investigation

Density is the amount of matter occupying a space. The more matter in that space, the greater its density. (Think of an unpopped corn kernel and a popped corn kernel). Liquids also have different densities and will not mix if the difference in densities is great enough.

Materials:

- Soybean (vegetable) oil
- Corn syrup
- Milk
- 3 small paper glasses or cups
- Clear glass
- 1/4 measuring cup

1. In the space below predict the density of the liquids (milk, corn oil, and corn syrup) in order from most dense to least dense.
Most _____ Least _____
2. Will the densest liquid sink or float? Circle the correct answer.
3. Pour 1/4 cup of each liquid into a separate small glass or paper cup.
4. Slowly pour each liquid into a clear glass (in any order) and observe the results.
5. List the order in which they layered from bottom to top?
Top _____ Middle _____ Bottom _____
6. Which had the greatest density? _____
7. Which had the least density? _____
8. How do you know? _____
9. Try this investigation with other liquids. What happens?