



# LINKS TO AGRICULTURE



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## Mighty Smooth Bean

Soybeans are grown for human food, consumer and industrial products, and livestock feed. Soybeans are one of the nation's most fascinating and versatile edible plants. From foods to ink and paints to plastics, soybeans have hundreds of everyday uses. Some of those products are probably in your kitchen or garage right now.

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, get into our cars, and even when we open our front doors. Some of the products made from soybeans include: cereal, cooking oil, flour, hot dogs, candy, baby food, chocolate, 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: bio-diesel fuel, soybean crayons, soy ink, and building materials.



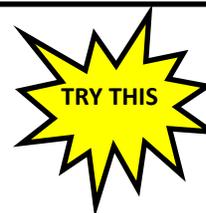
**Bio-diesel Fuel** - Bio-diesel fuel, which can be used in any diesel engine, is made from soybean oil. The fuel is a clean-burning and biodegradable fuel that can help cities meet federal clean air standards. Unlike petroleum diesel, bio-diesel fuel emits a much lower amount of pollutants, is sulfur free, and does not produce explosive vapors. Bio-diesel 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 name at many stores.



**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, offers better color reproduction. It is 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.

Make your own soy  
ink at home!



### What you need:

- ~ Clear plastic cup
- ~ Unsweetened Kool-Aid powder
- ~ Water
- ~ Soybean oil (sold as vegetable oil)
- ~ Granular soy lecithin (can be found at natural food stores)
- ~ Popsicle stick
- ~ Toothpick

### What to do:

1. Pour 1 teaspoon of water into the plastic cup.
2. Add 1 teaspoon of Kool-Aid. Stir.
3. Stir in 1/8 teaspoon of soybean oil.
4. Stir in 1/8 teaspoon of granular [soy](#) lecithin.
5. Mix until smooth. Your ink is ready to go.

**\* Use the toothpick to dip in your ink, then go ahead and write with it!\***

# Career Corner

**Plant Breeder** - Plant Breeders work to improve specific characteristics, such as yield, size, quality, maturity, and resistance to frost, drought, disease, and insect pests in plants. They utilize the principles of genetics and their knowledge of plant growth to develop variety and select the most desirable plants for crossing.

### How Plant Breeders Benefit Agriculture:

- Help create new food to feed the world
- A close connection from ag to the public

### Plant Breeders Study:

- Genetics
- Plant Biology



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## Farm Facts

- Soybeans are the highest natural source of fiber.
- There are over 2500 varieties of soybeans that come in many shapes, sizes, and colors.
- Soybean lecithin is used in the production of Hershey's chocolate. 
- Ford Motor Company uses soybeans to make soy foam that is used in the production of their cars today. 

### Have you ever eaten these?

These are "**edamame**" (ed-uh-'mah-may), or **immature soybeans**. They are native to East Asia and were introduced to Japan by China in the 8<sup>th</sup> century. The Japanese then used soybeans to develop soy sauce. Now, both **edamame** and soy sauce are enjoyed by people all over the world! Try them, they are delicious!!

