



# SOYBEANS

MIDDLE/HIGH SCHOOL



The bushy, green soybean plant is a legume. The soybean is native to East Asia. Soybeans were first brought to North America in the early 19th Century. US farmers first grew soybeans as cattle feed. Henry Ford experimented with soy-based plastics in the production of his cars. In 1940, he swung an axe at a car trunk to demonstrate the durability of soy plastics. George Washington Carver also developed more than 300 uses for soybeans, including edible oil and meal. It was also useful to restore nutrients to the depleted soils of the South. Legumes fix nitrogen in the soil.



Some of the better known soybean products include soy meal, soy flour, soy milk, tofu, meat substitutes, tempeh, soy sauce, infant formula, biodiesel fuel, and animal feed. Researchers are currently researching the use of soy oil to make rubber for various interior and exterior parts, including door seals, cupholders, and floor mats. Soy ink is used in over 95 percent of America's daily newspapers that circulate more than 1,500 copies per run. Soybeans also make great crayons. One acre of soybeans can make 82,363 crayons.



In Oklahoma, soybeans are planted in the spring and harvested in the fall. Plants can produce up to 80 pods per plant. Each pod contains two to four pea-sized beans. Soybeans are typically among Oklahoma's top 10 agricultural commodities.

## DIESEL VS BIODIESEL



Meet Brent Hajek, a soybean farmer from Ames, Oklahoma. Discuss the differences between diesel and biodiesel.



Watch Brent Hajek break the world land speed record in a Ford F-250 using biodiesel.

## FEED



Animal agriculture is the #1 user of soybeans. Poultry and livestock rely on nutrient-dense soybean meal. Poultry consume 67% of soybeans produced, pigs consume nearly 21%, and dairy cattle consume just over 10%.

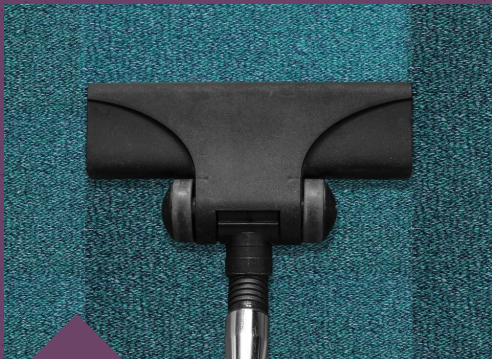
## FOOD



It is surprising the amount of soy-based products found in pantries. In fact, 61% of the soybean oil used in America goes to the food industry.

# HOW ARE SOYBEANS USED?

## FIBER



Soy is used in carpet backing to walls and ceilings filled with soy-based insulation. New soy-based products are entering the market in five areas, including adhesives, coatings and printing inks, lubricants, plastics, and solvents.

## FUEL



Soybean oil and soybean meal can replace volatile ingredients in many products. Soybean crude oil goes into the most well-known example of the soybean's industrial use: biodiesel. Biodiesel is a cleaner-burning, renewable alternative.