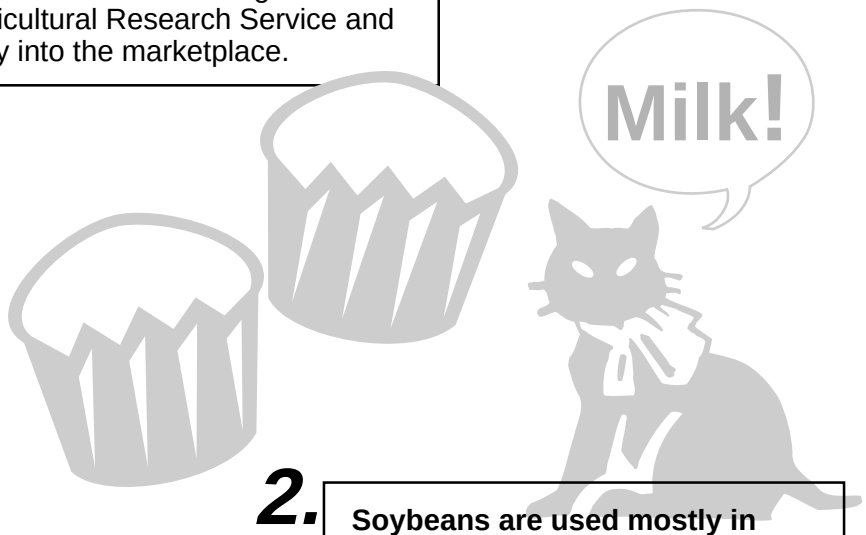
Science in Your Shopping Cart

Try your luck at the questions below, then read **THE INSIDE SCOOP** to learn more about how agricultural research affects your everyday life.

SCORING

4-5 WHIZ KID
2-3 You're on a roll!
0-1 We won't tell.
(Take a peek at the answers and try again.)

Each year dozens of improved products and new varieties of fruits, nuts, and vegetables emerge from the laboratories and greenhouses of USDA's Agricultural Research Service and make their way into the marketplace.



1. **The batteries in your boom box, lowfat snack cakes, French dressing, USA Today newspaper, your baby brother's disposable diapers, lactose-free milk for cats, seedless grapes... What do they have in common?**

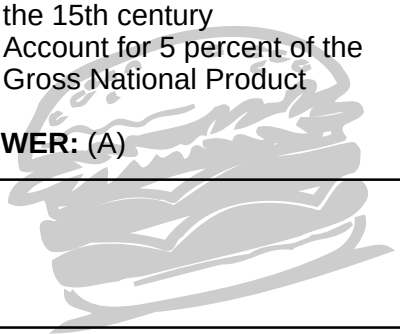
(A) Everyday products made possible by agricultural research
(B) Based on ultrasound technology
(C) Derived from petroleum
(D) Invented by Leonardo DaVinci in the 15th century
(E) Account for 5 percent of the Gross National Product

ANSWER: (A)

2. **Soybeans are used mostly in _____.**

(A) Soy sauce
(B) Beanie Babies
(C) Highway construction
(D) Vegetarian foods
(E) A wide variety of everyday food and nonfood products

ANSWER: (E) Many of the products in today's supermarket have soy components—candy bars, salad dressings, margarine, veggie burgers, microwave popcorn, infant formulas, and cosmetics—to name just a few.



READ LABELS. Some of the soy components you see on food labels are soy oil, soy lecithin, soy protein concentrate, soy isolate, and soy flour.

3.

More foods are made with wheat than with any other cereal grain. But wheat is also used in some nonfood products. Find at least one.

(A) Fuel filters
(B) Soccer balls
(C) Concrete
(D) Fluorescent nail polish
(E) Biodegradable report cards

ANSWER: (C) You may soon be skating on sidewalks made from wheat-starch-based concrete.

4.

Agricultural research means more than increasing crop yields, fighting insect pests, and breeding for better quality. Many products are made HEALTHIER. Can you spot some below?

(A) High-calcium salsa (goes great with vitamin D tortilla chips)
(B) Vitadrink for use in the Olympics
(C) Lowfat school lunch pizza
(D) Low-cholesterol eggs (no yolking)
(E) High-fiber cookies made with tree bark

ANSWER: (C) The pizza you eat in school lunch may be made with an ARS-developed mozzarella cheese that has less than half the fat of full-fat mozzarella. Using lower fat dairy products in school lunch helps keep fat intake down to about 30 percent of calories.

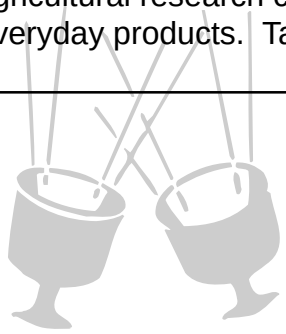
5.

Which of these agricultural products is used in batteries, baby powder, and disposable diapers?

(A) Corn
(B) Wheat
(C) Crushed egg shells
(D) Whey from dairy processing
(E) Rice

ANSWER: (A) A-maize-ing, right? Cornstarch is the basis for a product called SUPER SLURPER, which can absorb up to 2,000 times its weight in water.

IN THE SPOTLIGHT: CNN has just asked you for an interview on how agricultural research contributes to everyday products. Take it away...



FOOD FOR THOUGHT: If you were an ARS research scientist, what types of food or nonfood products would you like to develop?

Agricultural Research Service
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THE INSIDE SCOOP

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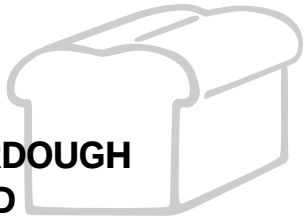
Below are just a few success stories to show how the work of scientists at the Agricultural Research Service affects your everyday life.

SOY-BASED INK

ARS researchers have developed a way to make printing ink from soy oil instead of petroleum. Not only is the ink from a renewable resource, but it won't smudge off on your fingers. *USA Today* uses this soy ink.

SOURDOUGH BREAD



For years, bakers in the San Francisco Bay area insisted that their sourdough bread couldn't be duplicated farther than 50 miles away. But back in the 1960's ARS scientists identified the bacterium and yeast that work together to produce the sourdough flavor. Now you can get sourdough bread anywhere in the world.

OATRIM

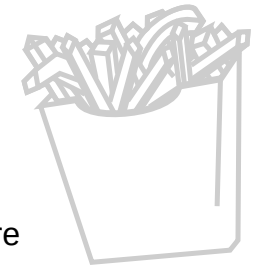
Lowfat snack cakes and many other reduced-fat products now on the market contain "Oatrim"—a low-calorie, cholesterol-fighting fat substitute made from oat flour. ARS licensed Oatrim's use to several companies and it's now in a wide variety of products—from ice cream to frozen dinners. Look for the term "hydrolyzed oat flour" on product labels. That's Oatrim!

LACTOSE-FREE MILK

This product is made for people who can't digest lactose—a sugar found in milk. By altering a bacterium used to make cheese and yogurt, ARS scientists found a way to break down milk sugar into its simpler sugars—glucose and galactose. Most lactose-intolerant people can drink this modified milk and digest it without discomfort. And the treated milk can be used in a whole range of dairy products such as ice cream, yogurt, and cheese.

YES, lactose-free milk is even available for cats! Older cats, like older people, sometimes develop lactose intolerance.

RICE FRIES



If you're like millions of other teens, french fries are one of your favorite foods. But guess what—they're high in fat. ARS has developed a fry made from rice flour that has 25-50 percent less fat than

regular fries. Rice fries are crispy on the outside and fluffy white on the inside. They have a mild taste that can be easily flavored with onions or spices.

In addition to providing a tasty snack that's lower in fat than traditional fries, rice fries would give rice growers a new market for broken rice kernels. The new fry is not yet available, but french fry lovers may soon be saying "rice is nice."

CONCRETE

ARS is finding more and more ways to use wheat in food and nonfood products. Wheat-starch-based concrete is one of the newest. Potential uses include roofing tiles, insulation, flooring, sound-proofing, insulated patios, AND sidewalks. Why put wheat in concrete? It makes a strong, lightweight product...with great flavor (just kidding).

GRAPES

You're probably not old enough to remember when ALL red grapes had seeds. Now seedless red grapes are widely available because an ARS lab developed America's most popular red seedless grape, Flame Seedless. ARS has also offered nurseries and breeders a delicious new black seedless grape. Called Black Emerald, the newcomer is a sweet grape about the size of a dime. The flesh is translucent, firm, and almost crisp.

SUPER SLURPER

New uses for cornstarch continue to surprise us. For example, when ARS scientists married starch to a synthetic chemical, they managed to create a product so thirsty, that it could slurp up to 2,000 times its weight in water. Someone called it "Super Slurper," and the name stuck.

After patents were secured in 1976, Super Slurper started popping up all over the marketplace. The absorbent compound is used as an electrical conductor in batteries. You can find it in fuel filters, baby powders, and wound dressings. Compounds very much like it are now used in disposable diapers and sanitary napkins.

CHECK IT OUT

http://www.ars.usda.gov/is/np/shopcartintro.html
http://www.arserrc.gov/
http://www.ncaur.usda.gov/oc/oilchem.htm
http://www.soyfoods.com/ (Not a USDA-affiliated site)
http://www.arserrc.gov/dp.microorganisms_for_lactose_hydro.htm
http://www.ncaur.usda.gov/bp/bpr.htm
http://www.nalusda.gov/ttic/tektran/data/000010/47/0000104711.html
http://www.ars.usda.gov/is/AR/archive/jan97/ (See "From Bread to Blocks")
http://www.ncaur.usda.gov/ppl/ppl.html-ssi

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