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A New Look for Foods

Scientists finesse new forms of familiar food.

Leftover Thanksgiving turkey has long inspired American ingenuity to disguise a common food to renew its appeal. The Land-Grant Universities and USDA are expanding this tradition to find new ways to present and market other foods.

Payoff

- **A slice of Americana.** Peanut butter now fits in your vest pocket without the sticky mess. Individually wrapped peanut butter portions, similar to single slices of American cheese, have been developed by **Oklahoma State** researchers. The technology has been licensed to a small Oklahoma-based food company. The convenience-sized product, called "P.B. Slices," has been marketed in the southeastern United States. Sales are expanding nationwide.
- **Cleaner burning candle.** Paraffin, a petroleum product, is used to make nearly all the candles in this country. **Iowa State** researchers have developed an improved candle wax from hydrogenated soybean oil. The soy candles burn cleaner and slower, so they last longer. Replacing a quarter of the soot-producing paraffin used annually for candles in the United States would require 25 million bushels of soybeans and would expand the market for this renewable resource.
- **Chip off the old cowpea.** Chips and pork rinds soon may get some competition from healthier snack foods based on black-eyed peas and peanuts. **Georgia** food scientists have developed ribbon-shaped snacks from extruded cowpea and rice. Extrusion cooking makes puffed, crisp snacks that resemble pork rinds. The snacks have less than half the fat of real pork rinds and better protein quality. They also are a good source of dietary fiber and provide 10 times as much folate as pork rinds. A newly developed extruded peanut snack proved acceptable to consumer panels, too.
- **Cheesy ideas.** To enhance goat milk's value, marketability and profitability, **Langston** has been teaching Oklahoma goat producers how to make quality goat cheese. Producers have credited the cheese with creating a market for

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excess goat milk. **Wisconsin** researchers developed techniques for making 50 percent reduced-fat cheddar cheese that is comparable in flavor to full-fat cheddar. The techniques for reducing fat while maintaining flavor and texture can be applied to any cheese and are being used by commercial cheesemakers.

- **Fortified formula.** Omega-3 and omega-6 fatty acids are important in visual and neural development of infants, revealed **Auburn** researchers. In February 2002, infant formula containing these essential fatty acids was introduced in the United States.
- **Funky functional foods.** People who eat a higher percentage of soy-based foods than in typical Western diets have a lower incidence of ailments such as cancer and heart disease. Food companies use soybean oil due to its high nutritional quality, availability and low price. However, soybean oil has a major drawback — it produces an undesirable “grassy” flavor. An **Ohio State** food scientist found that removing chlorophyll during soybean oil processing prevents the grassy flavor. Major soybean oil processors adopted the practice and are producing stable, high-quality soybean oil. **Iowa State** researchers found a single daily dose of plant sterols, the plant version of cholesterol, added to lean ground meat lowers blood cholesterol.
- **Beefing up profit.** The round is the leanest of all beef cuts, but is one of the least tender. **South Dakota State** researchers identified some exceptionally tender portions of beef round, which could result in \$1.65 more per beef carcass or \$46 million more to the U.S. beef industry per year. They also discovered the chuck/rib separation point could be moved forward to a point between the 4th and 5th rib bones without compromising tenderness or consumer acceptability, but add four more ribeye steaks to every beef carcass. Moving the point of separation would yield 2.4 additional pounds of ribeye steaks per carcass, which translates into \$3.55 per head extra for the beef producer.
- **Muscling in new steaks.** Research by **Nebraska** and **Florida** meat scientists provided the scientific

foundation for new products developed from the traditionally undervalued beef chuck and round. Researchers analyzed more than 5,500 muscles in the chuck and round. They identified higher value potential in numerous muscles traditionally used for ground beef or roasts. The beef industry is using these findings to create higher value products that offer economical new steaks for cost-conscious consumers and boost carcass value. The best known new cut is the flat iron steak, which is showing up on restaurant menus nationwide and at some meat counters. These new cuts sell for \$2.99 to \$5.99 per pound compared with roasts and ground beef that typically bring about \$1.19 to \$1.99 per pound.

- **Healthful muffins and cookies.** Inulin is a new commercial product that can be substituted for sugar and fat in processed foods. Inulin, derived from chicory roots, reduces calories, adds soluble dietary fiber and is safe for diabetics. **Purdue** researchers found that 1 percent of Inulin can replace up to 50 percent of the fat in muffins and increase the freshness of the baked goods for up to five days. **Tennessee** researchers found that lower protein, soft-wheat flours can be used to produce reduced-fat cookies similar in appearance and texture to full-fat cookies.
- **Cukes kill germs.** Cucumbers larger than 2 inches in diameter are not suitable for commercial pickling. To find a use for the discarded cukes, **Arkansas** food scientists are developing flavor extracts. The natural flavors at very low concentrations have been shown to be potent inhibitors of microbial growth, including foodborne pathogens. The cucumber flavors can also enhance flavors in other foods.



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