

Ticks Are Tough Little Suckers!

It's widely suggested that, after trekking fields and woods, hikers check themselves all over for ticks, and then wash and dry their hiking clothes. Now, a small study has shown that lone star ticks (*Amblyomma americanum*) and deer ticks (*Ixodes scapularis*) are able to survive the soaking and agitation of a washing machine!

To evaluate ticks' durability, the researcher placed nymphs of both species in mesh bags and subjected them to various combinations of water temperatures and detergent types. Some ticks have been known to withstand hours of submersion in fresh water, and most of the lone star ticks survived all the water-detergent combinations. Similarly, most of the deer ticks lived through the cold- and warm-water settings, and a few even survived hot-water laundering. While none of the ticks tested could tolerate 1 hour of dryer tumbling at high heat, about one-half of the *A. americanum* and one-third of the *I. scapularis* ticks survived when the dryer was set to "no heat." *John F. Carroll, USDA-ARS Animal Parasitic Diseases Laboratory, Beltsville, Maryland; phone (301) 504-9017, e-mail john.carroll@ars.usda.gov.*

A Superb New Pecan

Growers should appreciate Lakota, a new pecan cultivar developed by the national pecan breeding program. It has performed well in tests in Illinois, Kansas, Missouri, Oklahoma, and Texas. Data suggests that Lakota is early-maturing enough to be grown in northern production areas and sufficiently scab-resistant to be grown in the humid Southeast. It has a vigorous, upright growth habit and strong limb angles that contribute to a wind-resistant structure. Lakota also has medium susceptibility to yellow and black aphids, both of which can decrease yields.

Lakota's abundant, high-quality nuts number about 60 to the pound—of which 10 ounces are kernels and 6 ounces are shell. Its cream-to-golden kernels shell

out easily into attractive halves. Small quantities of grafted trees are available from selected nurserymen. *Tommy E. Thompson and L.J. Grauke, USDA-ARS Crop Germplasm Research Unit, College Station, Texas; phone (979) 272-1402, e-mail tet1@tamu.edu [Thompson], ljj@tamu.edu [Grauke].*

Hydrogen Fuel From Microbial "Factories"

The natural abundance of hydrogen and its capacity to store and release energy in a nonpolluting manner make it highly appealing as a potential source of energy. But at present, about 95 percent of U.S. hydrogen is derived from petroleum or natural gas, via a process called "steam reforming." So scientists are evaluating bacterial species—including *Bacteroides* and *Shewanella*—for their potential use in fuel-cell systems. The systems would use mixtures of selected bacteria to treat organic wastewater, catalyzing release of protons and electrons, which could then produce electricity or hydrogen fuel.

The resources of the ARS Microbial Culture Collection—comprising about 87,000 microbial strains from around the world—are being tapped for bacterial candidates. The 3-year project is being done in cooperation with researchers at Washington University, St. Louis, Missouri. *Michael A. Cotta, USDA-ARS Fermentation Biotechnology Research Unit, National Center for Agricultural Utilization Research, Peoria, Illinois; phone (309) 681-6500, e-mail mike.cotta@ars.usda.gov.*

What's Behind "Zebra Chip" Potatoes?

Tiny insects called "psyllids" are being investigated for their role in causing dark, interior stripes that spoil potatoes for chip-making. First detected in Mexican fields in 1994 and in Texas potatoes in 2000—followed by Texas outbreaks from 2004 to 2006—what's being called "zebra chip (ZC) disorder" has cost growers and processors millions of dollars.

While the organism responsible for the disorder hasn't yet been identified,

research is showing a strong correlation with feeding by the psyllid species *Bactericera cockerelli*. This psyllid's a prime suspect as a vector for several reasons: Potato plants are its favorite hosts; its nymphal stage injects toxins that cause psyllid yellows disease, the symptoms of which resemble ZC; it was prevalent in ZC-infested South Texas fields in 2004; and it winters in the Lower Rio Grande Valley and migrates north in the spring. Monitoring and spraying the psyllids may be an effective ZC preventative. *James Crosslin, USDA-ARS Vegetable and Forage Crops Research Unit, Prosser, Washington; phone (509) 786-9253, e-mail jim.crosslin@ars.usda.gov.*

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More Beans Mean Less Cholesterol

Just a half cup of cooked dry beans every day has been shown sufficient to help volunteers lower their total cholesterol levels. The recent study involved 80 volunteers aged 18 to 55. Half had at least two symptoms that can lead to "metabolic syndrome," and half did not. In addition to abdominal obesity, syndrome symptoms include high triglyceride levels, low HDL "good" cholesterol, high blood sugar, or high blood pressure.

The volunteers were randomly divided into two groups of 40. For 12 weeks, one of the two groups added a half-cup serving of cooked dry pinto beans to their regular daily diets, while the other half added chicken soup instead. At the end of the study, all the volunteers who ate the pinto beans saw a reduction in cholesterol levels, confirming earlier studies by other researchers. The mechanisms responsible for this reduction are not yet fully known. *Philip G. Reeves, USDA-ARS Grand Forks Human Nutrition Research Center, Grand Forks, North Dakota; phone (701) 795-8497, e-mail philip.reeves@ars.usda.gov.*