

Food Safety Help for Processors

A new Internet resource could be invaluable to food processors—especially, to smaller meat and poultry processing companies. The information it provides can answer food safety questions and help food processors make science-based decisions to produce safe and wholesome products for consumers. Called the Predictive Microbiology Information Portal, or PMIP, it offers information on research, regulations, and resources related to *Listeria monocytogenes* in ready-to-eat foods. Soon it will be expanded to include other pathogen and food combinations. To help ensure the safety of food processing methods, a searchable database allows users to find information that can be used to develop plans for Hazard Analysis and Critical Control Point inspection.

Developed in collaboration with Rutgers University and Decisionalysis Risk Consultants, Inc., of Ottawa, Ontario, the portal includes a tutorial with instructions on using and interpreting predictive models. It links to the ARS Pathogen Modeling Program and ComBase, which provide diverse resources associated with databases, regulatory requirements, and food safety principles. The PMIP Web address is www.ars.usda.gov/naa/errc/mfsru/portal. *Vijay K. Juneja, USDA-ARS Microbial Food Safety Research Unit, Wyndmoor, Pennsylvania; phone (215) 233-6500, e-mail vijay.juneja@ars.usda.gov.*

Getting the Goodness of Garlic

Consuming large amounts of pungent, raw garlic may be good for your heart, but not necessarily your social life. Until recently, researchers and nutritionists assumed that eating uncooked garlic was the best way to obtain the cardiovascular benefits attributed to it—and its close relative, the onion. Both are rich sources of heart-protective compounds called “thiosulfates.” These sulfur compounds, best known for causing eyes to water, are thought to lower blood pressure and break up potentially harmful clusters of platelets in the bloodstream.

To test the effects of cooking on garlic’s beneficial compounds, scientists boiled, baked, and microwaved both crushed and uncrushed cloves and evaluated them for their antiplatelet activity. They learned that crushing the garlic helped free up the compounds. And though garlic retained most of its health benefits with light cooking, microwaving practically stripped it of its blood-thinning characteristics. *Philipp Simon, Vegetable Crops Research Unit, USDA-ARS, Madison, Wisconsin; phone (608) 262-1248, e-mail philipp.simon@ars.usda.gov.*

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Fresh garlic is good for the heart.

Fortifying Feed With Biodiesel Coproducts

Scientists are searching for environmentally and economically sound uses for by-products of biofuel production. Currently, biodiesel is often made from triglycerides in soybean oil. This processing also yields crude glycerin, or glycerol, which has a purity level of about 85 percent. When glycerol is refined to 99-percent purity, it can be used in many products, including foods, drinks, cosmetics, pharmaceuticals, and toiletries.

Researchers with ARS and at Iowa State University recently evaluated use of crude glycerin to supplement the feed of laying hens, broilers, and swine. They found that

crude glycerin provided caloric energy similar to corn grain. Feeds containing up to 10 percent glycerin for laying hens and broilers had no adverse effect on egg production or body weight gain. Likewise, there was no reduction in weight gain or meat quality in pigs. The next step is to determine how variations in crude glycerin composition affect energy use in broilers and swine. Supplementing feed supplies with crude glycerin could provide livestock producers with an inexpensive alternative to corn grain. *Brian J. Kerr, USDA-ARS National Soil Tilth Laboratory, Ames, Iowa; phone (515) 294-0224, e-mail kerr@nsric.ars.usda.gov.*

Prairie Grass Nutrients on the Map

Ranchers need information about the amount and nutritional value of forage plants growing in their pastures. Now a foundation has been laid for a system that will allow them to get detailed Web-based information about available forage material in their fields. Researchers analyzed commercial HyMap hyperspectral imagery taken by airplane to estimate the yield and protein content of rangeland forage plants in two markedly different North Dakota ecoregions. The technique’s accuracy was the same for both regions: 82 percent for yield predictions, and 92 percent for protein content.

An important feature of this technology is the ability to measure the quantity and quality of both live and dead plant material—which is rarely possible using conventional remote-sensing technologies. In this region, cold weather hinders plant decomposition, and cattle get protein from dead and live grasses. By combining this technology with prior calculating methods, the researchers were able to compute and map the nutritional value of entire pastures in northern prairie grasslands. But further research is needed to determine whether the results apply in other regions. *Rebecca Phillips, USDA-ARS Northern Great Plains Research Laboratory, Mandan, North Dakota; phone (701) 667-3002, e-mail rebecca.phillips@ars.usda.gov.*