

New Soft Wheat Fights Powdery Mildew

A new breeding stock for soft red winter wheat fought off all 10 strains of powdery mildew tested against it in the laboratory. Previously, fighting 8 of 10 was the best any wheat could do against this fungal disease that costs growers \$2 to \$3 million a year and strikes worst at soft red winter wheat. This type of wheat—grown east of the Mississippi—is made into flour commonly used by bakeries to give cookies and cakes a delicate texture.

Scientists at ARS, North Carolina State University, and the University of Georgia developed the new breeding stock, named NC 97BGTAB-10. Its genes for resisting powdery mildew come from hardy, wild Middle Eastern ancestors of modern wheat. Commercial seed companies can use the new breeding stock to build mildew resistance into their farmer-favored, bakery-bound soft red wheat varieties. *Steven Leath, USDA-ARS Plant Science Research Unit, Raleigh, North Carolina; phone (919) 515-6819, e-mail steven_leath@ncsu.edu.*

Nature-Based Weapon Against *Salmonella* Is a Top Product of '98

Popular Science magazine named a new commercial product from ARS research as one of its "100 Best of What's New for 1998." ARS scientists developed the product to reduce *Salmonella* contamination in chickens. It was subsequently licensed by MS BioScience in Madison, Wisconsin, and is sold as PRE-EMPT. The product inhibits *Salmonella* in chickens' intestines by introducing a blend of 29 live, nonharmful bacteria naturally present in healthy adult chickens. The mix can be sprayed in a mist over newly hatched chicks to give them the same level of *Salmonella* resistance that develops in an older bird.

In March 1998, the U.S. Food and

Drug Administration approved PRE-EMPT for commercial use. This was the first FDA approval of a bacterial mix as a type of animal drug known as a competitive exclusion product. PREEMPT can help producers reduce *Salmonella* risks. But proper food storage, handling, and preparation remain essential to guard against pathogens. An estimated 2 million cases of *Salmonella* poisoning occur in the United States each year. Most exposure is from raw or undercooked meat, poultry, milk, and eggs. *Donald Corrier, USDA-ARS Food Animal Protection Research Laboratory, 2881 F&B Rd., College Station, TX 77845; phone (409) 260-9484.*

Baiting the Mexican Fruit Fly

ARS scientists have designed a new chemical lure for Mexican fruit flies, important quarantine pests. Female Mexican fruit flies lay eggs in at least 36 different fruits. Better lures and traps will enable action agencies to detect—and thwart—invasions sooner. The flies periodically cross the Mexican border and infest U.S. fruit orchards, most often in the Lower Rio Grande Valley of Texas. But last summer, they turned up in San Diego County in California. In the United States, they could potentially cost \$1.4 billion a year in export sales, crop losses, and treatment expenses.

The new lure resembles the pest's natural protein food source. Its three components are ammonium acetate, putrescine, and methyl butanol. In field trials in Guatemala, ARS scientists compared sticky cylindrical traps baited with the new lure to glass McPhail traps baited with a standard liquid protein lure. The new lure caught nearly twice as many Mexican fruit flies as the standard one. It was also more effective at capturing both males and females. ARS has filed for patent protection. Earlier, the scientists developed a Mediterranean fruit

fly lure now approved for use in eradication programs in Florida. *Robert R. Heath, USDA-ARS Center for Medical, Agricultural, and Veterinary Entomology, Gainesville, Florida; phone (352) 374-5735, e-mail bheath@gainesville.usda.ufl.edu.*

More Dietary Kudos for Oatrim?

Oatrim is a powdered, soluble oat fiber that an ARS researcher in Peoria, Illinois, originally developed as a natural, low-calorie fat substitute in foods. But Oatrim may hold other benefits. In Beltsville, Maryland, volunteers in ARS diet studies consumed about one-half cup daily of the powdery substance added to foods. Researchers found evidence that Oatrim acted as an antioxidant for fatty acids. This means it protected fatty acids crucial to cell membranes and other cell components. The findings also suggest Oatrim results in more short-chain fatty acids being produced in the colon. These fatty acids may help protect colon cells from cancer and also reduce risk of heart disease.

In earlier studies by the Beltsville researchers, Oatrim reduced body weight, blood lipids, and systolic blood pressure. Further, it improved glucose tolerance. The researchers say Oatrim's antioxidant function comes from something other than its soluble beta glucans fibers, known to lower cholesterol. As a fat substitute, Oatrim is used in some commercial baked goods and cheeses. Labels identify it as Oatrim or hydrolyzed oat flour. It is also used as a thickener in a commercial skim milk sold in East Coast markets under the brand name Oatrim-Slim. *Judith Hallfrisch or Kay Behall, USDA-ARS Beltsville Human Nutrition Research Center, Beltsville, Maryland; phone (301) 504-9014, e-mail hallfrisch@bhnrc.arsusda.gov behall@bhnrc.arsusda.gov.*