

SDA RESEARCH AGENCY HONORS SCIENTISTS FOR TECHNOLOGY TRANSFER

February 2, 1999

USDA - ARS News Service

BELTSVILLE, Md. -- New products made from corn fiber and a substance called alum for treating poultry litter are the Agricultural Research Service's top picks for 1998 technology transfer awards.

ARS, the U.S. Department of Agriculture's chief scientific research agency, will honor scientists who developed the technologies Feb. 10 at a 1 p.m. ceremony at the agency's Beltsville (Md.) Agricultural Research Center.

There, ARS chemist Phillip A. Moore and a team led by ARS chemist Kevin B. Hicks will receive plaque and cash awards from ARS Administrator Floyd P. Horn for outstanding technology transfer efforts.

The event, begun in 1986, provides "a venue each year to honor ARS researchers who've gone the extra mile in moving promising new research technologies from the lab bench to the marketplace," said Horn.

Moore works at ARS' Poultry Production and Product Safety Research Unit in Fayetteville, Ark. He patented a technique for using aluminum sulfate, or alum, to help reduce phosphorus runoff from crop fields fertilized with poultry litter.

About 7 million tons of the poultry waste is generated each year.

Spreading it on crop fields is a common disposal method. Runoff, however, can send excess phosphorus into nearby waterways or lakes.

Moore designed experiments showing that an application of alum can reduce phosphorus losses by 70 percent. Another benefit is decreased ammonia emissions, which can cause respiratory problems for birds and poultry house workers alike.

General Chemical, a Parsippany, N.J., firm has licensed the technology under the product name Al+Clear. Poultry producers in 15 states and Canada are now using the product.

* Kevin B. Hicks is the team leader for a group of ARS and university scientists who developed two new multi-use products from the hulls and fibers of corn. Hicks, who will accept the Feb. 10 award on his group's behalf, works at the Plant Science and Technology Unit, located at ARS' Eastern Regional Research Center in Wyndmoor, Pa.

* Combining their expertise in biochemistry, the team discovered a new corn fiber oil that reduces levels of serum and LDL cholesterol, forms that clog arteries, obstructing blood flow. The new product, "Amazing Oil," is a

joint patent of ARS and the University of Massachusetts. It also covers techniques for extracting the corn fiber oil and processing it into cholesterol-lowering products.

The work could open a new market for the fibers, which the corn processing industry produces at the rate of 4 million tons annually. Monsanto, based in St. Louis, Mo., has licensed the oil technology to develop a variety of cholesterol-lowering foods.

* The second new product is a white corn fiber gum. It is the focus of a cooperative agreement between Hick's team and The National Starch and Chemical Company, located in Bridgewater, N.J. Under the agreement, the scientists will help explore the gum's potential as an emulsifier, soluble dietary fiber, thickener, and other products.

At the Feb. 10 ceremony, ARS will also present individual or team awards for significant contributions in technology transfer. The recipients are:

* Plant pathologist Peter J. Cotty, Southern Regional Research Center, New Orleans. Cotty developed a new biopesticide for cotton growers. The product contains benign *Aspergillus* fungi that exclude toxin-producing strains from cotton plants.

* Chemist Robert R. Heath, Center for Medical, Agricultural and Veterinary Entomology, Gainesville, Fla. Heath developed an improved trapping system for Mediterranean and Mexican fruit flies, tiny insects that pose a major

threat to 200 fruit and vegetable crops.

*Microbiologist Hyun S. Lillehoj, Immunology and Disease Resistance Laboratory, Beltsville, Md. Lillehoj is collaborating with three poultry companies to harness cytokines, hormone-like chemicals with potential to improve vaccines against coccidiosis, a costly chicken disease.

* Entomologist Carrol O. Calkins, leader of a 17-member ARS and university team that is helping Washington state's apple growers conduct an area-wide program to suppress codling moths. The strategy includes heavy doses of pheromone substances so male moths are less apt to find mates.

* Soil scientist Michael Glenn and entomologist Gary Puterka, Appalachian Fruit Research Station, Kearneysville, W.Va. Working with Engelhard Corp. of Iselin, N.J., they created a particle film that shields apples and pears from microbial and insect attack.

* Plant physiologist Michael J. Kasperbauer and soil scientist Patrick G. Hunt, Coastal Plains Soil, Water, and Plant Research Center, Florence, S.C.

The scientists developed, tested and patented a red plastic mulch for tomato plants that boosts yields, and helps keep weeds and nematodes in check. The mulches are now sold commercially.