

# Learn, Discover and Explore at Ag Progress Days

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machine. This process is similar to the method used to strip meat from the bone. Since 90 percent of the eggshell is calcium carbonate, worth 40 cents a pound, this process has proven to be valuable.

The membranes, explain Joseph MacNeil, professor emeritus of food science, are currently being worked on for extraction of collagen for medical purposes.

### Paper to Mulch

Common grass seed mulching has a number of drawbacks. Straw mulch has weed seeds, dries up and blows away, is bulky and hard to store. Even a newer mulching method, hydro-mulching, uses large quantities of water and needs expensive equipment.

Consequently Penn State researchers asked, "What about using waste paper or paper-board for compressed mulch pellets?" and the Penn Mulch concept was born. Since paper accounted for more than 70 million tons of municipal waste in 1990, the idea has both economic and environmental benefits. The display included samples of the processed paper which was pelletized along with polymers that expand with water.

According to Jay Woodring, junior turf grass science major, this combination, then, holds seeds in place and keeps the soil moist for turf and vegetable seed germination. The mulch will then biodegrade into the soil.

### Plum Pox Summarized

Herb Cole, professor of ag sciences with an expertise in plant pathology at Penn State, gave a Plum Pox virus update from the department of plant pathology.

According to Cole authorities hope to, and believe they can, eradicate the virus from the U.S. Although the virus has been

around since 1915, where it was identified in Bulgaria, authorities began to identify the virus in the U.S. in October 1999. Cole estimates that the problem was around for four to five years prior to October, "But we didn't know what it was," said Cole.

Currently there is no control, or antidote, for an infected tree. The virus reduces quality of the fruit and makes the tree worthless. Cole used a "dirty needle" analogy to explain the spread of disease.

"An aphid will feed on an infected leaf and then later feed on the leaf of a healthy trees and spread the virus particles," said Cole. Fortunately the virus is not spread to an aphid's offspring, only tree to tree.

Eastern Canada, which has identified the disease north of Niagara Falls, has probably had the disease since before the U.S., said Cole.

The disease may be hard to identify as different strains of fruit produce different symptoms. The "Encore" variety of peach, for example, produce striking symptoms. According to Cole, however, only a few varieties show distinct symptoms, and these symptoms may take a long time to become visible. Also a single tree may show symptoms on only a few random branches.

Visible symptoms include pinkish streaks on flower petals, rings on the pit, yellow rings or yellow lines patterns on the fruit, and irregular or deformed fruit.

The virus is not transmissible to seeds, so the seeds from an infected tree would be considered free of infection.

"The big question is, are there Plum Pox Virus outbreaks along fences, fence rows, or weeds," said Cole. So far these potential harbors for the virus have not been identified as infected. "If there were, we would be hard-pressed to eradicate it," said



With the introduction of Penn Mulch, more paper waste will be diverted from landfill space. Jay Woodring, a junior turf grass science major, explains to Kenneth Mullen, Verdonia, the polymer and pelletization process which converts paper into valuable, biodegradable mulch. Woodring, who has used the mulch and is enthusiastic about the product, hopes to own his own golf course in the future.

Cole.

Fortunately for Pennsylvania, only the "D" strain of virus has invaded the commonwealth's borders. This particular strain is less aggressive and not as easily transmissible as other varieties.

"The answer, unfortunately, is to push them out, burn them and keep after root suckers, or take a bulldozer through and eliminate all possible regrowth," said Cole.

So far in Adams County 680 acres have been razed, giving rise to a \$5.1 million indemnity program for peach producers. In the entire U.S., Adams and the edge of Cumberland counties are the only areas to have Plum Pox Virus positive samples. In all 820 acres will be removed.

"It restores your faith in humanity," said Cole of working with Adams County producers. "The people in Adams County are saying, 'Yes, I may not be in business next year but I'll do whatever I have to for the common good.'"

Additional information on the Plum Pox Virus is available at: <http://sharka.cas.psu.edu>. Besides Penn State, the department of agriculture and Canada have websites addressing the virus.

### Border Collie Shepherds

Besides an occasional wolf whistle across a crowded street, whistles do not play an integral part in getting a point across in today's world. At Allan and Peg Lynch's "Lynch Mob Farm," however, whistles are an essential in everyday communication.

During Ag Progress Days the couple provided a working sheep dog demonstration for the public with several of their energetic, black-and-white Border Collies. Although Border Collies with good bloodlines are natural gatherers, explained Allan, they must be trained to follow the whistles and verbal commands used to direct the dogs.

Puppies begin their training in a small ring, when they are taught to bring the sheep to the handler. While herding sheep is instinctive, driving sheep is not and must be trained.

This training period, according to Peg, is never completed. "You're working with a Border Collie their entire life, working



"They're dedicated. They'll work all day if you let them," said Allan Lynch during a working sheep dog demonstration. Lynch directed "Duff" with both whistles and verbal commands to move the sheep around the ring and through narrow rails.



Joseph MacNeil, professor emeritus of food science, shows Mel Rockey, left, Boalsburg, and Richard Kustin of State College a model of the eggshell/membrane separation process. With the eggshells a source of calcium carbonate and the membranes a source of collagen, the process will allow producers to "sell everything," said MacNeil. "Nothing will be left over but the water."



"Thor" is the "only son of an only son of an only son," said Myers. "Unless he gets one of his colts approved for breeding, the line stops with him," explained Susan Kuhn, who rides for the Joe and Karen Myers. The registry of the Friesian breed is extremely strict about what animals are allowed to continue the lineages.