

# Penn State studying mushroom canning techniques

UNIVERSITY PARK — The Penn State Department of Food Science recently received a cash grant and in kind contributions totaling \$161,562 to evaluate new mushroom canning techniques. The money is available through the Ben Franklin program aimed at saving Pennsylvania jobs. Under this partnership agreement with the state, grants are awarded by the Ben Franklin fund only if local

industries provide matching cash support. According to Robert Beelman, Penn State professor of food science, the department received \$70,000 in cash benefits. Ben Franklin allocated \$40,000 for "Advances in Mushroom Processing Techniques," and seven mushroom canning companies supplied the additional \$30,000.

"The remainder of the total budget is made up of in-kind contributions," said Beelman. "Equipment donations, for the most part. Although money for salaries and work space provided by the university also counts toward the \$161,562." A team of five university faculty, a post-doctoral candidate and three graduate students will evaluate new techniques in

blanching and retorting, procedures that ensure sterilization of canned mushrooms. "The industry has reversed itself in recent years," said Beelman. "It used to be that 70 percent of Pennsylvania's mushrooms were processed. Now that amount reaches the consumer fresh. This change, coupled with the impact of less expensive foreign imports, has drastically

reduced the state's canned mushroom industry." The fresh versus canned market probably will not change. But through production efficiency, canning companies may be able to produce more product for less, thereby improving competition with foreign imports and saving the American industry from complete collapse. "At least 800 jobs are directly affected by the canned mushroom industry in this state," says Beelman. "But if canning declines further, growers could also suffer." Under current production conditions, 20 to 25 percent of the mushroom crop is not suitable for fresh market sales. If these lower grade mushrooms can not be sold to the canning industry, grower profits will decline. "Penn State's been developing new processing techniques for about 20 years," says Beelman. "We're going to continue to do all we can to keep the Pennsylvania canned mushroom industry intact. Right now we're trying to provide techniques that can be implemented within the next five to 10 years."

## Herbicide economics requires study

SAN FRANCISCO, Cal. — Telling a farmer to use the least expensive herbicides that will do the job right is like telling him to plant the first day after the last hard frost. It's good advice, but you need more information to make it work.

The last hard frost may be tough to predict, but experience and detailed herbicide label directions can help you decide which herbicide tank mix will do the best job at the least cost on your no-till soybean crop.

Paraquat+Plus, a fast-acting, contact herbicide, is the standard treatment of emerged weeds at planting time in no-till systems. Another herbicide with some burndown capability is Bronco, a premixed combination of Roundup and Lasso (Roundup without the Lasso is not generally recommended as a contact herbicide, because perennial weeds may not be at the proper stage of growth for control at normal application rates in minimum tillage and no-tillage systems.)

Paraquat+Plus and Bronco, in combination with other labeled herbicides, will control most emerged annual weeds, suppress many emerged perennial weeds and give pre-emergence control of many annual weeds when soybeans are planted directly into a cover crop, stale seedbed, or in previous crop residues such as wheat stubble.

But neither Bronco nor Paraquat+Plus will control regrowth of perennial weeds or unemerged perennial weeds. When perennial weeds appear after the soybean crop has emerged, directed or nondirected postemergence treatments must be used.

In deciding on a pre-emergence

tank mix for no-till soybeans, keep in mind the following recommendations, taken from the manufacturers' labels. In all cases, check your fields carefully for emerged weeds at planting times, and refer to product labels for application and mixing directions.

### When using Bronco

— Do not mix Bronco with liquid fertilizers, herbicide oils or any other materials other than water, except the three residual products shown in the chart.

— Reduced control of emerged

weeds may occur when weeds are under poor growing conditions, such as from drought stress, when application follows recent mowing or when excessive amounts of dust cover the plants.

— Rainfall or sprinkler irrigation within six hours after application may reduce control of emerged weeds. (But rainfall or irrigation is required sometime after application to move Bronco into the weed germination zone for pre-emergence weed control.)

### When Using Paraquat+Plus

— Rainfall is not necessary to

activate Paraquat+Plus, and rainfall will not wash it off target weeds after the Paraquat has dried.

— Add Ortho X-77 Spreader (non-ionic) at the recommended rate for complete coverage.

— Apply Paraquat+Plus in sufficient water to ensure adequate coverage and penetration of crop residue. As density of stubble, crop residue or weeds increase, spray gallonage should be increased within the recommended range.

— Use only clean water, as clay particles deactivate Paraquat.

## Adams beef producers to meet

GETTYSBURG — The Adams County Beef Producers will hold its next meeting on Tuesday at 7:30 p.m. at the Adams County Extension Office. The evening's program presented by Fran Koch from the Soil Conservation District will be a slide presentation on the Chesapeake Bay and erosion control. All interested people are welcome to attend.

The main business on the agenda will be the election of officers and directors for the coming year. All members are encouraged to attend and bring suggestions and ideas for next year's activities.



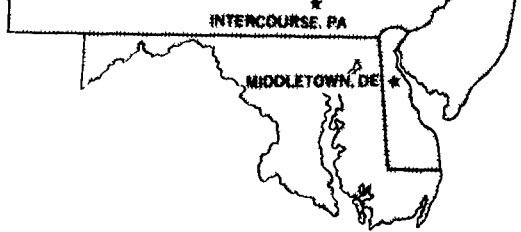
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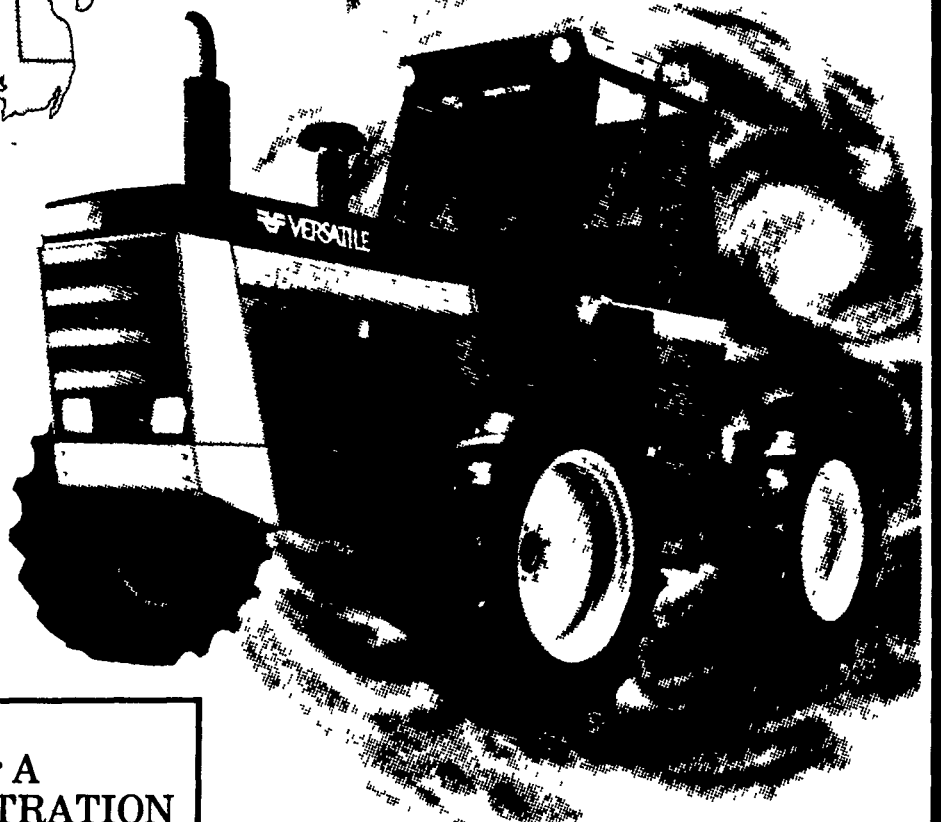
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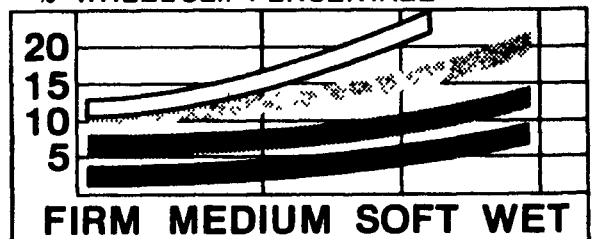
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