

## Mushroom Harvester Devised

Devices for automatic cutting and gathering of commercially grown mushrooms have been developed by agricultural engineers at Pennsylvania State University.

The equipment includes an oscillating saw or cutterhead and airstreams and an air suction chamber to pick up the cut mushrooms and move them to a storage bin.

Using the innovations, a harvester—the first of its type—has been built and tested by Dr. Sverker Persson and associates at Penn State. Engineer in charge of the project, Dr. Persson says the equipment can be a vital step toward complete mechanization of mushroom production. Harvesting, he claims, is the only major phase of mushroom production still lacking suitable mechanized equipment.

The harvesting machine, patented recently, can be used where mushroom trays are brought by fork lift truck to a

harvesting center in the mushroom plant.

These developments at Penn State's agricultural experiment station are the latest phases of a long-time program to improve mushroom production. Research to date has helped Pennsylvania mushroom growers produce a crop valued at over 55 million annually—the largest source of cash income from crop production in the Commonwealth. This amounts to about two-thirds of the nation's supply of mushrooms and one-third of total world production each year.

Only recently did studies of mechanized production become an integral part of mushroom research at University Park. Penn State marketing experts and leaders in mushroom science determined that competition from low labor costs in other countries will soon require complete mechanization of U.S. mushroom growing to maintain profitable operations.

The oscillating saw or cutterhead works through a one-foot-wide row of mushrooms in the four foot long tray in about 20 seconds, Dr. Persson says. The present cutterhead must pass back and forth over the beds four times to harvest a tray. When fully developed, the machine will feature four cutterheads harvesting the full tray in one pass.

Most machine-harvested mushrooms have the same quality as hand-picked mushrooms, Dr. Persson affirms. The ideal mushroom strains for mechanical harvesting should have fairly long stems and should not form clusters. Practically all mushrooms from one sprouting or "flush" should reach suitable size for harvesting in one or two days.

The machine will harvest less than ideal mushrooms but with reduced capacity and increased losses.

Such mechanical harvesting leaves the mushroom stumps in the bed, instead of pulling them as in hand harvesting. The technique shows no problems and especially has no effect on yields or sanitation. The stumps disappear gradually within a couple of weeks. New growths called "pins" start very close to the old stumps.

Additional research is needed, Dr. Persson points out, before the harvesting techniques are perfected. Above all, studies are needed of the economic consequences of a wide variation in mushroom size. Further analysis must be made of the possibility of using mushrooms with slight damage.

## Broiler Chicks Continue Down

The placement of broiler chicks in Pennsylvania continues on the decline. The Pennsylvania Crop Reporting Service says that although last week's total of 1,162,000 was still a scant 2,000 more than a week earlier it was 17 per cent below the figure of a year earlier.

The 10 week average, however,

is holding about even with 1971.

A reversal of the trend is not foreseen in the near term as the placement of eggs for broiler-type chick hatch are down four per cent over the previous week and the three-week average is off one per cent from the comparable period last year.



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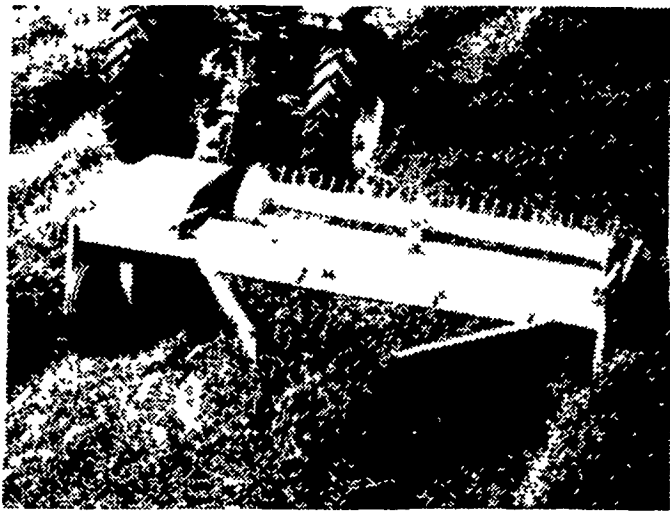
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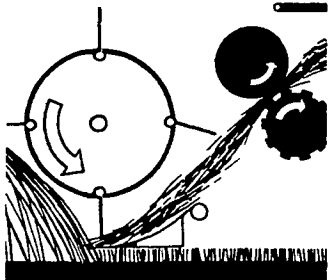
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