

## Fluid drilling overcomes direct seeding problems, says Penn State engineer

UNIVERSITY PARK — Direct seeding of certain vegetables may save time, labor and money according to Donald R. Daum, Penn State Extension agricultural engineer.

Disadvantages of direct seeding over transplanting include erratic emergence, uneven stand, and poor weed control. Fluid seeding may overcome these problems.

Fluid seeding is a relatively new

technique for direct seeding. It involves germinating the seeds, mixing selected germinated seeds with gel, and sowing the mixture.

Daum says that for sowing, the special fluid drills are commercially available and used in England, Canada, and several states in this country. All fluid seeders have a tank or hopper, a pump or compressed gas (usually air) a furrow or hole opener, and a

covering mechanism or press wheels.

An open tank or hopper is used on planters with pumps while an enclosed pressure tank is used for compressed gas planters. The amount of gel-seed mix, and thus tank size, depends on row spacing, planter design and whether a continuous ribbon or "blobs" are used.

Peristaltic (squeeze) or diaphragm pumps are used to pump the mix through the planter. These pumps are normally ground-driven so the throughput is proportional to distance traveled regardless of speed.

On other drills a pressurized tank is used; flow rate in control by pressure and machine design. A constant travel speed is necessary to achieve uniform planting especially if a continuous

ribbon is used, since the pressurized system has a constant throughput.

Daum says that openers vary from conventional "shoes" as used on dry seed planters to punches that permit planting through plastic film mulch. At least one drill has a gas flame attachment to burn holes in the plastic film while the seeds are planted.

Covering devices, usually similar to those on conventional seeders, may not be used at all. Press wheels are also similar to conventional planters.

The most popular option or alternate design is a device that meters a small fixed amount of the gel mix at a desired spacing. This results in blobs in the row rather than a continuous ribbon, drastically reducing the amount of gel required. This permits clump

planting for tomatoes, cucumbers and most melons. Where single plants are desired, the clumps can be thinned to one plant per clump at the desired spacing.

Another common option places an anticrustant such as horticultural vermiculite over the seed. Normally this device is used only with clump planting. Brushes may aid getting the material through holes in plastic mulch.

Daum says that fluid seeders have reached the point that current designs and units will operate satisfactory. The new units give growers the opportunity to direct seed several vegetable crops.

"If you always wanted to try direct seeding, but have been afraid of uneven emergence and stands, try fluid drilling," says Daum.

## Small turkey processors get inspection break

ELIZABETHTOWN — The American Association of Meat Processors headquartered here reports that effective Feb. 23, firms that slaughter or process fewer than 20,000 turkeys a year and sell them within the state are now exempt from federal inspection. Previously, USDA exempted firms that handled 5,000 birds a year.

Under the new rule, exempted plants may not share space with other meat or poultry processors, and then must meet standard USDA labeling and sanitation requirements. Labeling of products from exempted plants must be truthful and accurate, and

the slaughter or processing operations must be carried on under approved conditions.


The new exemption ceiling for turkeys is in line with exemptions allowed for firms handling chickens, ducks, geese and other poultry, USDA said.

The exemption for turkey farmers raising and selling their own birds within state was increased from 250 to 1,000 birds annually.

The change is aimed at helping small turkey producers stay in business by eliminating paperwork, plant design and inspection costs, according to the Department, which also anticipates a reduction in inspector workload.


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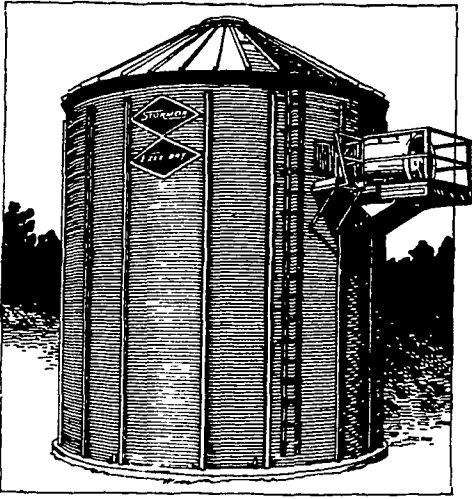


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