

Many Demonstrations Show The Technical Side Of Farming

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playing wares at Ag Progress Days are not permitted to sell anything, just educate, demonstrate and display ... and discuss the possible benefits that could come with making a purchase.

The Ireland-built, slurry-injection rig was demonstrated because it could have practical applications for those faced with odor problems and manure spreading in connection with manure management and dealing with the growing problems of a growing human population.

But the other possible benefits of being able to get the nutrient-carrying slurry to the upper root zone include better use of the nutrients and moisture.

George Reed, United Kingdom

representative for Greentrac Ltd., based in Antrim, Ireland, gave a demonstration of one of the forms of the system, using liquid hog manure, which is perhaps a redundancy.

The rig that Reed presented consisted of a tractor with a three-point PTO, a tanker containing the slurry, and the injector system.

According to Reed, the tanker is not a necessity. Using a tractor and either of two extended hose systems — an umbilical to another independent tanker, or a reel-hose system to a manure pit — the injector can be mounted directly to a tractor, although additional weight is added to the injector so that soil penetration is accomplished.

The concept of the system is simple: Using blades and knives to

cut into the soil, a thin (up to a 4-inches deep) slice is made into the ground, into which the slurry flows.

The rate of slurry flow is controlled by two methods, tractor speed and by the use of flow-restricting cones which are placed in line from the tube coming from the tanker.

Generally, Reed said the rate of application can be roughly calculated using a rule of thumb that, for every inch of slurry injected into a slit, 1,000 gallons per acre is being applied.

The manufacturer's recommended maximum application rate is 4,500 gallons per acre, though application rates should be based on existing field conditions. Reed stressed that the injector was not

designed as a means for "dumping" manure, but rather for making better applications and reducing odor and the losses associated with more common means of dispersal.

Such losses with surface applications include moisture, nutrient volatilization and plant loss or pasture-use loss.

With the injector, except for the slits into the surface of the earth and a very faint odor at a very close distance, there was little evidence that manure was applied.

The injector model Reed demonstrated consisted of six pairs of independent sets of discs and blades, for a total of twelve, across a width of 8.23 feet.

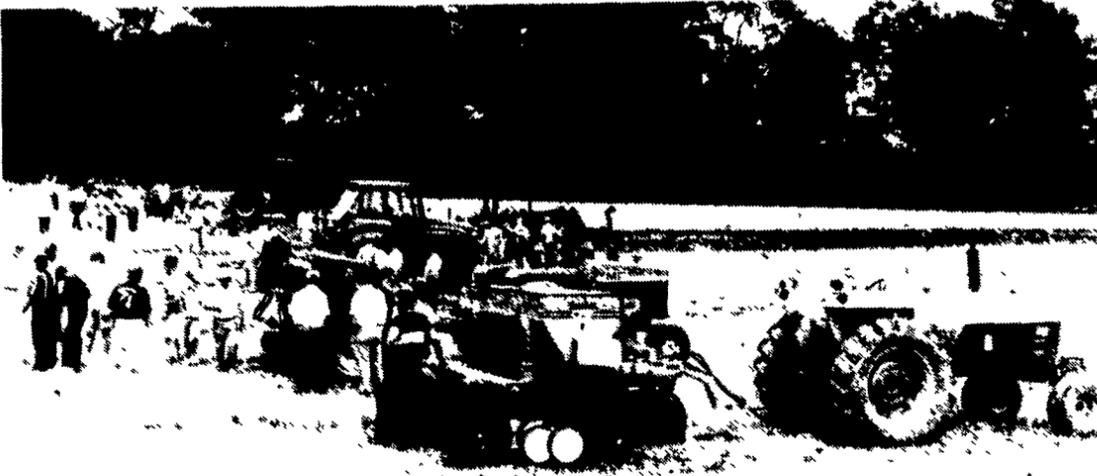
From the slurry tanker, a single

hose pumps the slurry into a distribution head, which works similar to the function of an electrical distributor on a multi-cylinder gas engine, except this distributor puts out slurry.

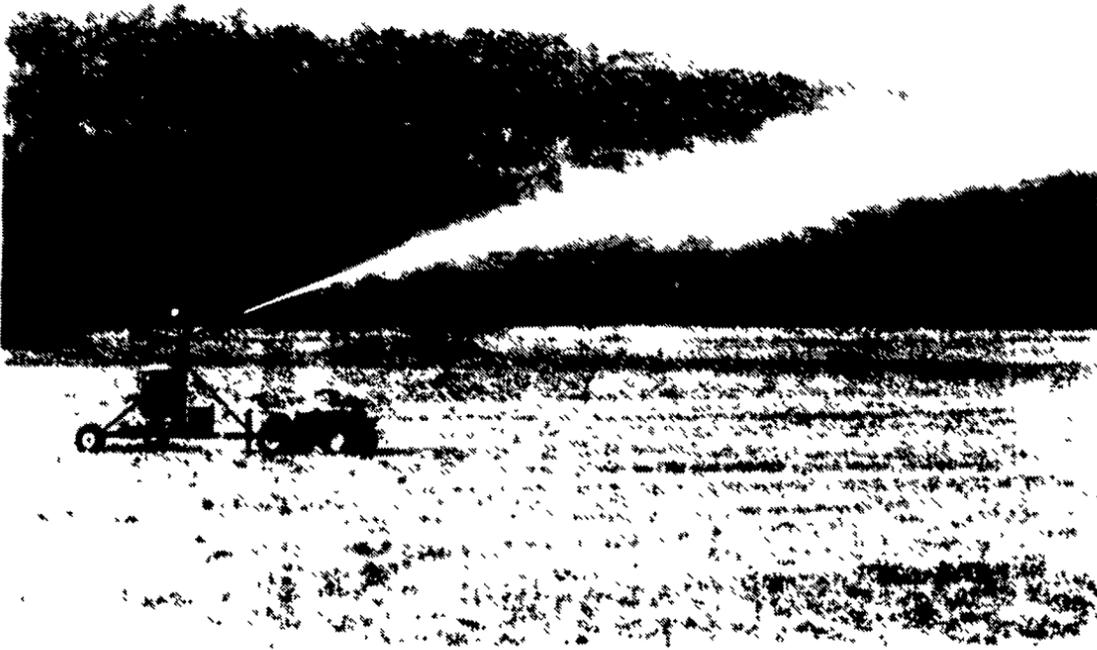
Inside the distributor head, a "T"-shaped rotor with portals, allows two constant flows of slurry. The are 12 portals around the casing of the distributor head from which tubes connect to each of the 12 knives.

The rotor revolves at a relatively high speed, running off of three-point PTO tractor power, and slurry is sent through the rotor to each of the 12 tubes at equal rates.

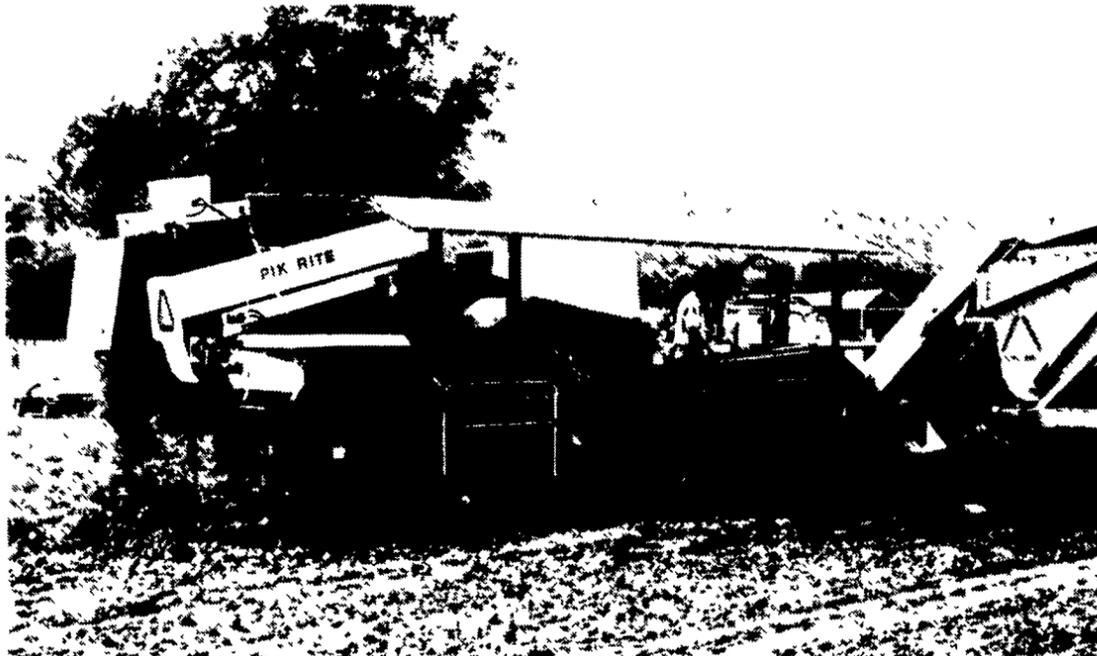
The 16 percent solids capability
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Tillage demonstrations offer farmers a chance to observe different methods.



A waste water jet spray irrigator kicks off on two-minute intervals sending a stream of water far out into a field.



Although there is room for up to 10 people, one man operates a tomato harvester during a demonstration. The harvester is self-leveling, while at the same time, the harvesting head follows the contour of the land. The machine selects between red and green tomatoes and discharges plant waste out of the rear, green tomatoes are ejected out of the side.



George Reed, representative for an Irish company that manufactures a shallow-injection system for animal manure slurry, measures the depth of a cut into the ground and stands where he had just injected liquid hog manure at a rate of about 3,000 gallons per acre.



Shown are three sets of pairs of the actual devices used to shallow-inject slurry into a field with a cover crop. When the unit is lifted from the ground, a hydraulic clamp at the terminal end of each hose shuts off any possibility of dripping manure from escaping.