

Place manure in the root zone

By NATALIE RECTOR



WHEN manure is placed and retained in the root zone, the nutrients are recycled for crop production. This requires management strategies that reduce the risks of runoff, nitrogen volatilization, leaching and movement to tile drains.

Injecting manure is one way to place it in the root zone, but not the only way.

Key Points

- Injecting manure is just one way to apply manure.
- Cover-crop seed can be added to the manure slurry in the spreader tank.
- Aeration tillage ahead of irrigated manure is an option.

Broadcasting followed by shallow incorporation with secondary tillage can provide even distribution. Some producers

report improved yields with shallow incorporation compared to injection.

Some producers and custom applicators use low-disturbance tillage tools that fracture without inverting the soil (two such tools are AerWay and Gen-Till). These tools are suitable in no-till systems, hay and pasture fields, or after tillage.

An increase in surface roughness and infiltration prevents overland flow of manure, catching it and holding it in the root zone.



Slurry-enriched seeding

This low-disturbance tillage concept has several options for producers to consider. One is a new technique called manure slurry-enriched seeding. Tim Harrigan is developing this new system at Michigan State University. It entails adding cover-crop seed to the manure slurry in the spreader tank. Harrigan has successfully seeded wheat, clovers, brassicas, grasses and other crops with this method. Bypass flow keeps the seed in suspension in the tank. When the low-disturbance tools are used ahead of the seed-laden slurry, the cover-crop seed is carried with the manure to shallow fractures where the crop takes root.

Manure burning the seed has not been an issue. In fact, the small cracks and depressions in the soil act as a reservoir, holding the manure until it soaks into the soil. Within a few weeks, vigorous tufts of green cover crops emerge from the loosened soil, combining two operations in one: First, the manure was placed in the root zone and did not run off; and secondly, a cover crop was established that will capture and recycle the manure nutrients.

Harrigan will demonstrate this technology at the Great Lakes Manure Handling Expo on July 27. The expo will be at Berlyn Acres, eight miles west of the intersection of U.S. 127 and M-21 in Clinton County. Commercial equipment vendors will demonstrate equipment for manure handling and hauling at a satellite manure-storage facility adjacent to a 50-acre wheat field. Equipment demonstrations and displays of supplies and services will be ongoing from 8:30 a.m. to 5 p.m. Educational sessions presented by guest speakers from five Midwest states will be held concurrently and repeated.

Low-disturbance tillage

I have visited with producers using aeration tillage ahead of irrigated manure. The producers noted a tremendous improvement in manure infiltration and the decreased potential for runoff. Jim Vannette of Agri-Serve, a custom manure applicator service, is pleased with the system's versatility across a range of field conditions, including no-till, tilled and sod fields. He is also pleased with the odor and runoff control. Agri-Serve will be at the expo showing the system.

Prepare before spreading

Cover crops can be established by aerial seeding before silage harvest, by manure-slurry seeding after silage harvest, or by broadcasting or drilling after silage or soybean harvest. Winter spreading can be improved with cover crops because they add roughness to the field and reduce runoff. In early spring, the cover crops will increase the adsorption of manure and decrease the potential for runoff.

■ For more information on the Great Lakes Manure Handling Expo, visit www.rootzone.msu.edu.



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