

Environment Producer Guide



# Manure Application on Drought-Affected Fields

Author: Allan Stokes, National Pork Board

America's pork producers have a long-standing history of environmental stewardship, which includes the proper handling of swine manure. However, when areas experience a drought, the way manure should be handled and applied may require different techniques from standard protocols to maintain good care of the environment.

## Drought Changes Soil

Drought-impacted ground may have large cracks in the soil that serve as a "preferential flow" path that allows manure to rapidly seep down the cracks, bypassing absorption into the soil and providing a route for manure to rapidly reach shallow groundwater and field tile lines that could potentially contaminate ground and surface water. Aside from the environmental impacts if this occurs, producers also lose valuable manure nutrients that move below the root zone of the crops in the field where the manure was applied. Therefore, extra caution needs to be exercised when land-applying manure in these conditions.

## Tips Before Applying

- **Conduct a soil test.** Conduct a soil test to determine nutrient levels that already exist in soil prior to application in order to best match application of manure nutrients to agronomic needs of crops to be grown and avoid overapplication of nutrients. This is even more important during drought years, as drought stunted crops may not have taken up as much of the previously applied nutrients as would be expected in a "normal" year.
- **Check fields for cracks.** Thoroughly check all fields intended for land application for the presence and severity of cracks in the soil as well as to identify inlets and outlets for drain tiles and drainage systems.
- **Avoid land application/work soil.** If possible, avoid land application on fields that have cracked soils, with or without drain tiles. If this is not possible, work the soil 3 to 5 inches deep to eliminate cracks and establish a consistent soil bed to absorb and

keep manure nutrients in the root zone prior to land application. This should be done even if manure is to be injected below the soil surface. You should review any conservation plans you have for the farm before working fields.

- **Review emergency-response plan.** Make certain you have and have thoroughly reviewed your emergency response action plan and have appropriate equipment and materials on-hand to respond to any unintended release of manure.

## Tips During/After Applying

- **Observe greater setbacks.** Where possible, observe greater setback distances from manure application to rivers, streams, wellheads, drainage in-takes and other water conveyance routes.
- **Reduce application rates.** Use reduced application rates and multiple passes to ensure ample time for absorption of applied manure into the soil bed.
- **Check drainage outlets.** Frequently check tile and other drainage outlets and surface water for signs of manure during and for several days after manure application and after the next rain event. If signs of manure are noticed in outlets, drainageways or water, immediately discontinue land application, if still in-progress, and take steps to contain and remove the manure for land application. Notify appropriate state/local officials if/as required by regulation.

For more information on proper manure management practices, go to [pork.org](http://pork.org) and click on the environmental fact sheets page.