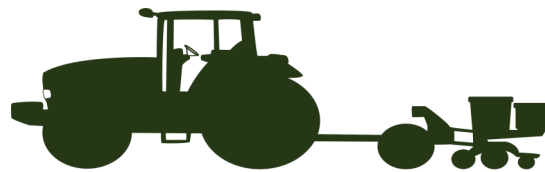


# CLEANING TILLAGE & PLANTING EQUIPMENT



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## Between-Field Tillage and Planting Equipment Clean-up & Sanitation

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### Equipment Sanitation Series

#### Tillage & Planting Equipment

### Why the Need to Clean Agricultural Equipment

There are several reasons why producers should take time to clean and maintain their tillage and planting equipment, including field cultivators and planters.

**Maintenance.** The accumulation of mud, weeds, and debris can harbor problems easily identified on clean equipment. Cleaning equipment to perform regular maintenance and reduce risk of downtime during the spring planting season only makes good financial sense. Equipment that has been properly cleaned and maintained usually results in more efficient field performance. In addition, higher resale or trade-in value is often associated with equipment which has a track record of regularly scheduled maintenance.

**Movement of weed and disease issues.** Material accumulated on tillage and planting equipment can easily move pathogen-infested soil and weed seed from contaminated fields to clean fields.

### Prevention is Crucial to Pest Management

Tillage and planting equipment often visit fields representing both owned and rented land, increasing the probability of inadvertently transporting unwanted biomaterial from one field to another. This material may attach itself to sweeps, spikes, row cleaners, press wheels, and parts of the frame.

While it is unlikely that operators will be able to remove one hundred percent of the biomaterial from a piece of tillage or planting equipment, one can reduce the risk of spreading material from one field to another by taking a few minutes to follow these simple clean-up steps:

- 1) **Remove all plant material, living and dead.** Some weed species produce upwards of 500,000 seeds per plant, and species like Palmer amaranth or water hemp hold their seed very tightly, making accidental spread with plant material more likely.
- 2) **Remove loose clods of soil that accumulates on tires, wheel wells, or fenders.** Soil transported from one field to another may contain potential weed-seed and other pests, such as Soybean Cyst Nematode (SCN). Once SCN becomes established in a field, it cannot be removed and becomes a lifelong management issue for the landowner.



Figure 1. Before the unit leaves the field, assess the situation for risk of transporting biomaterial and soil.



Figure 2. Identify the problem areas before moving on to the next field.



Figure 3. Remove as much plant and soil material as you reasonably can to limit unintended transport.

## Guidelines for Power Washing/Sanitizing Tillage & Planting Equipment

Tillage and planting equipment clean-up requires more than simply removing loose material. A more thorough power washing and sanitizing of the units will provide additional removal of soil and plant pathogens.

When preparing to clean tillage and planting equipment, personal PPE should be worn to reduce the risk of injury. Hearing protection, safety glasses or safety goggles, leather gloves, and no-slip shoes or boots are just a few examples of PPE that can prevent high pressure water or flying debris from injuring your eyes, hands, and feet. Consult the power washer operator's manual before beginning the job. There are a few basic steps when it comes to washing and sanitizing equipment:

### Site Selection:

- 1) Unpaved areas consisting of grass or gravel allow for water infiltration. Medium and fine textured soils below the surface can serve as a filter and reduce surface runoff. Always determine what is environmentally appropriate for the site.
- 2) Avoid potential contamination. Never wash your equipment within 100 feet of a wellhead or drainage tile inlet.

### Washing:

- 1) Choose the correct nozzle or tip for your power washer and hold the unit two to three feet from the surface being cleaned. Pre-soaking is recommended to loosen material and increase efficiency, saving time and water during cleaning.
- 2) Save time by working from the top of the unit and making your way towards the bottom to avoid biomaterial, soil, and debris from running over the cleaned areas.
- 3) Use smooth, left to right horizontal motions while covering a three- to four-foot area in one pass. This method will increase the efficiency of your movement.
- 4) If the use of a cleaner is involved, consult the power washer's operators manual for instructions about the type and volume of cleaner needed. This will help determine what products are recommended or acceptable, as well as any precautions that should be taken to limit environmental impact.

### Sanitation:

- 1) Use a 1% bleach solution applied via a backpack or deck (pump) sprayer.
- 2) Soak surface for 15-20 seconds with solution, then thoroughly rinse to prevent corrosion.

Bleach to mix for 1% solution	Gallons of water required
1.3 oz	1 gal
2.6 oz	2 gal
3.9 oz	3 gal
5.2 oz	4 gal
6.5 oz	5 gal



**Figure 4.** Remove the seed boxes to effectively clean the whole machine.



**Figure 5.** Row cleaners and press wheels are key areas that accumulate unintended biomaterial/soils.



**Figure 6.** It took approximately one hour to remove the biomaterial/soil from this 12-unit planter to prevent...



**Figure 7.** ...a long term management situation resulting in increased costs and reduced future crop yields.