

PROCESSING SWINE WITH A HORIZONTAL GRINDER
DRAFT STANDARD OPERATING PROCEDURE
February 2020

Intent: The intent of horizontal grinding is to efficiently and effectively manage large scale mass mortality for the intended purpose of composting. The end product shall be a uniform mixture of 50-50 animal and carbon material produced at the discharge end of the grinder. Discharged material shall be no greater than 3 inches in size.

Equipment:

(1) Horizontal Grinder shall have the following specifications:

- In-Feed Conveyor to be equipped with a self-monitoring feed system and/or needs to be adjustable to a minimum speed of 10 feet per minute.
- Discharge Conveyor needs to be adjustable from 5 to 30 feet per second (a wider range is acceptable). The preferred speed from field trials is 7-9 feet per second.
- Feed Roller should have adjustable down pressure and/or float on top of material being fed to minimize material from being thrown backwards and to minimize material being drug into the hammers.
- Screens must wrap at least 190 degrees around the rotor.
- A full screen assembly must be no more than two screens (i.e. machines with two screens as opposed to machines with many screens). This will minimize the time required to change screen size.
- A shield for the discharge conveyor that can be attached if needed (comparable to the image in picture #1.)
- Devices for catching/diverting metal at the end of the exit conveyor should be removed prior to use (see picture #1).
- Must have the following four screen sizes (or equivalent square inch) available on site and have the ability to change screen sizes.
 - 3 inches by 5 inches
 - 6 inches by 9 inches
 - 19 x 5 inch 19 x 9 inch

(1) Carbon Feed: Rubber Tire Payloader equipped with a minimum two cubic yard bucket to feed the horizontal grinder (or equivalent).

(1) Carcass Feed: Excavator equipped with a minimum one cubic yard bucket and thumb to feed the horizontal grinder (or equivalent). Equipment must be able to pick up efficiently and effectively pick up carcasses in whole and place them into the horizontal grinder conveyor feed.

Health and Safety:

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- Personnel shall follow USDA health and safety plan and/or the contractors plan. Contractor's plans must be approved by USDA personnel.
- Personnel must wear PPE based on Site Safety Plan and Job Hazard Analysis
- Personnel, if applicable, must have medical clearance for wearing a respirator (N-95).

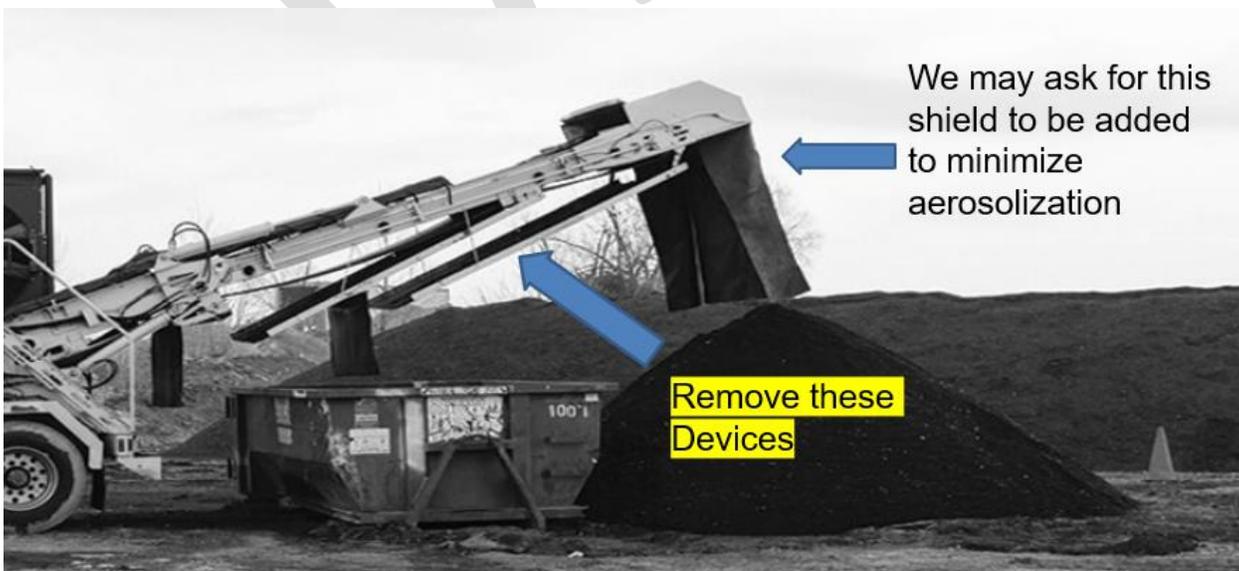
Procedure:

1. Horizontal grinder grinding and exit conveyor shall be positioned over a bed of carbon or impermeable barrier to capture liquid or ground material.
2. Horizontal grinder will be positioned in a staging area such that both woodchips (likely single ground wood debris) and swine mortality can be mixed and loaded onto the feed conveyor from either side.
3. Operator of the horizontal grinder will run the payloader and excavator to feed the horizontal grinder.
4. Optimal throughput is a balancing act between several factors (1) the goal is to achieve uniform mixing of the carbon and carcass (2) the goal is to that the carcass be ground into pieces no more than 3 inches in size (3) the goal is to prevent or minimize aerosolization due to material movement such as loading and unloading of material and during grinding operations.
5. The exact mixture that is processed and size of the processed material will be determined by the site director. Expected material composition is a blend of 50-50 carbon material and mortalities.

Throughput Expectations:

- A minimum throughput expectation of 60,000 pounds of mortality per hour.
 - o While running a mixture that is approximately 800 pounds of mortality combined with one cubic yard of single ground wood. A screen size of 6x9 inch rectangular or similar is the anticipated preferred screen size.
 - o Exit Conveyor speed must be 9 feet per second or slower to minimize aerosolization.

Picture #1:



6800CT Horizontal Grinder

Terex | 1000 × 667 jpeg | Image may be subject to copyright.



Illustration of the 190 degrees. Don't know if we can use it. This shows 1 screen size