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## Solid Manure Odor Control Techniques

Technologies that reduce the odors released during land application of solid manure parallel those of liquid manure, namely, treating solid manure before it is spread and incorporating surface-applied solid manure into the soil as soon as possible after it is applied.

### Incorporation

Solid manure cannot be injected, because unlike liquid manure, it will not flow through the pipes and tubes common to injectors. It therefore requires another pass with a disk or other tillage equipment before being incorporated into the soil. The simple recommendation is to use a tandem disk or field cultivator as soon as possible after the solid manure is spread. New equipment needs to be designed that will both apply and incorporate solid manure with a single piece of equipment or spread solid manure on grasslands.

The loading or transfer of solid manure from buildings, stacks, or storage areas can produce odor emissions. This can be a problem when solid manure is temporarily stored near cropland and then applied after the crop is removed in the fall or before the crop is planted in the spring. One way of minimizing odors from stacked manure, however, is by covering it with plastic. Using black plastic may also help minimize fly production due to the high temperatures that occur beneath the cover.

### Treatment

As with liquid manure, treating solid manure (such as composting, Figure 44-7) can reduce odors. Some chemical treatments can reduce gas emissions. For example, alum has been shown to significantly reduce ammonia volatilization from poultry litter (Moore et al. 1995).

### Time and location constraints

When applying manure, always consider wind direction, especially if you are broadcasting. Select days when the wind is blowing away from neighbors and dwellings. If feasible, spread manure on weekdays when neighbors are likely to be away from their home; avoid weekends, especially Sundays and holidays. Before spreading manure, check with neighbors to be sure that they



Figure 44-7. Mechanical turner used in composting solid manure.

do not have a social event planned for the same day that you are planning to spread. If they do, change your plans. Finally, one of the most effective practices is simply to tell your neighbors or those who may be affected that you plan to apply manure to your farmland. Typically, people will object less if they know ahead of time and feel that they have some control or at least some input into what is happening around them.

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