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# Siting Animal Production Facilities and Evaluating Odor Control Options Using the Odor Footprint Tool

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**Species:** Swine, Poultry, Dairy and Beef

**Use Area:** Animal Housing and Manure Storage

**Technology Category:** Planning/siting tool

**Air Mitigated Pollutants:** Odor

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## System Summary:

The Odor Footprint Tool is a worksheet/spreadsheet that provides objective, science-based information on the risk-based impact of odors generated by livestock facilities. The user enters information about the livestock facilities for a given site, the site location (for selection of regional weather data), use of supplemental odor control, and any special terrain around the site. After using the Odor Footprint Tool, the user obtains minimum setback distances in four directions matching up with targets for avoiding odor annoyance. The Odor Footprint Tool can help assess the reduction in the size of a facility's odor footprint due to use of proven odor control technology.

By using the Odor Footprint Tool, producers and their advisors can mitigate neighbor impacts of odor and air-borne pollutants through improved siting of facilities. They can also use the Odor Footprint Tool to assess the benefit of odor control technologies in terms of reduced area of odor impact, which encourages the utilization of effective control technologies.

## Applicability:

- Assesses frequency of odor annoyance from housed swine, cattle and poultry production facilities
- Considers animal housing facilities and manure storage facilities
- Assesses reduction in odor footprint due to using proven odor control technology
- Used on a regional basis within a state
- Recommended for use as a planning and screening tool

## Limitations:

- Not ready for use with open lots, treatment lagoons, and other large area sources
- Not for assessing odor annoyance during application of manure
- Requires its own set of emission values
- Dispersion modeling is required upfront for confident use in a new region having differing weather patterns.
- Simplified footprints may seem oversimplified or lack desired level of precision

## Cost:

There is no direct cost for using the publicly available versions of the Odor Footprint Tool to obtain directional setback distances or for conferring with an Extension educator. When producers defer use to an advisor/consultant, it is reasonable to expect to pay for consultant time associated with using the tool, getting their technical response and recommendations, creating project-specific visuals, and presenting material to permitting authorities, local zoning commissions, lenders, etc.

The primary costs associated with the Odor Footprint Tool are upfront costs of calibrating and validating the dispersion model and performing dispersion modeling using weather data for a specific area. Grant funds have been utilized within Nebraska and South Dakota for this purpose.