

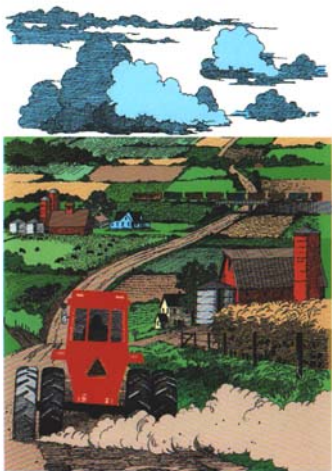


# Best Environmental Management Practices

*Farm Animal Production*

## *Building Good Neighbor Relationships*

*Paul Wylie, Michigan State University,  
and Don D. Jones, Purdue University*



# Best Environmental Management Practices

Farm Animal Production

## Building Good Neighbor Relationships

Paul Wylie, Michigan State University,  
and Don D. Jones, Purdue University

*Developing and maintaining good neighbor relations is important for all livestock and poultry producers. There are certain attributes of animal farming that come up again and again as being objectionable to neighbors. The top two are odor and flies. These are followed by spills on the road, run-off containing manure leaving the farm, and well water contamination. Let us take a look at these concerns and how farmers can minimize their annoyance to neighbors.*

## Things that Make Neighbors Unhappy

Odor is a subjective human response to what one smells. Studies suggest that to deal with objectionable odor management, farmers need to consider **FIDO** (frequency, intensity, duration, and offensiveness). Odor problems can be managed by reducing the number of times neighbors detect odors from your operation. Usually this can be done by limiting the times manure is applied on a field near a neighbor or by locating animals and manure storage as far away from their homes as possible. Intensity is the strength of an odor; it is

diminished by distance and dilution. Duration has to do with how long odors are present. Strong odors for a short period of time (hours) are usually considered less objectionable than a lighter odor for a long time (days). Offensiveness has to do with how objectionable something smells. Fresh manure usually is judged less offensive than manure from a long-term anaerobic storage, for example. Corn silage has a strong odor, but isn't offensive to most people. Silo drainage, however, can create very objectionable odors as it decomposes.

Fly problems often result in neighborhood disputes. It may be difficult to say for certain that filth flies originate from a certain farm, but they can upset neighbors who may then be more sensitive to infractions of good farming practices.

Manure spills, as well as soil, on the road can also upset neighbors. Non-farm people often have a higher standard of automobile cleanliness than farmers do.

Most rural residents get their drinking water from wells which can be contaminated by poor farm practices. A soluble form of nitrogen, nitrate nitrogen, can leach down through the soil to unprotected aquifers. At 10 ppm or more, nitrate in the drinking water of infants and elderly people can be toxic. Another concern is contamination by



Figure 1. Consultants or Extension Specialists can often provide suggestions on improving neighbor relations.



Figure 2. Make sure the public sees your operation as a well-kept farmstead.

pathogens from manure. Unless manure is back siphoned to aquifers, a poorly sealed or leaking well casing is usually at fault. Fortunately this is a rare occurrence.

Manure that leaves the farm and flows onto the surface of a neighbor's land is a serious problem. The usual causes are spills, a leaking storage unit, or run-off from heavy rainfall or melting snow on fields where manure has been surface applied.

## Minimizing Complaints

First of all, how does your farm look to outsiders? A trashy and unkempt farmstead will raise suspicions. Neighbors may think "if you look like a slob, you must be one." Take a look at nearby businesses and industries. It may not be fair, but they will be compared to your operation. At the least, mow regularly and keep junk out of view. Keep buildings painted and in good repair. Use fences or vegetative screening to block items that may be considered unsightly. Keeping farm trucks clean can greatly improve appearance on the road or in a parking lot. How do you and your employees look when you go to town? Remember, you want to create a positive, professional impression, and it takes only a time or two to generate an unfavorable reputation.

Like any business, the three most important social aspects of an animal production facility are location, location, and location. Nearly all objectionable things about farming can be minimized by distance. Many states have recognized this by establishing setback distances for new or expanding animal operations. When considering the location of a new animal facility or planning a major expansion, have your Extension Service run the MN or Purdue Odor Estimator computer program (<http://danpatch.ecn.purdue.edu/~odor/>)

[setback.html](http://danpatch.ecn.purdue.edu/~odor/setback.html)) for you to better define the affected area. These programs calculate the area around your operation where odors are apt to be objectionable more than 5% of the time. If the calculated distance is greater than the distance to your neighbors, you should expect complaints, and you should consider relocating, down sizing or using odor minimizing strategies. As a rule of thumb, plan for at least a 1/4-mile minimum setback from any neighboring residence. One should probably also maintain a 300-500 foot setback from property lines when constructing livestock facilities. Consider prevailing winds and air drainage to nearby home sites. *Legal setback distance requirements may also apply, so check state and local regulations.*

## Tips to Minimize Odor

- Inject or immediately incorporate land applied manure.
- Cover stored manure in storage with a roof, a fibrous mat, or a flexible membrane.
- Composting or methane digesters are sometimes feasible in large operations to treat manure and reduce odors.



Figure 3. Timing and method of manure application affects complaints.

- Don't spread manure on weekends or holidays.
- Don't spread manure if there is an air inversion or stable conditions with a light wind <12 mph blowing toward nearby homes.
- Avoid spills on roadways by not overfilling spreaders and checking for leaks before leaving the fill site.
- Shovel or scrape roadways promptly if mud or manure gets on them. Maintain the required amount of freeboard in manure storages. If you wait until it is brim full, leaks are more apt to happen.
- Be prepared to contain larger spills by constructing dams across ditches or small water-courses. This will reduce the damage and decrease the size of the area you have to clean up should a spill occur. Be sure to promptly notify the appropriate environmental regulatory agency in the event of a spill.

## Tips to Control Fly Populations

Good manure management plans and structures should minimize fly production. Organic material that is very wet or very dry will not support fly production. Use flytraps to catch adult flies moving to your farm. Use pesticide sprays sparingly. An outbreak of adults should be treated

with a non-residual knock down spray. Avoid residual surface sprays. If they seem to be needed, focus on the location of egg laying and maggot development. Cleanliness is a key to controlling fly populations.

## Tips to Reduce Silage Drainage

Juices from ensiled forages that are harvested too wet (over 70% moisture) will flow from stave or bunker silos. This juice must be contained in a run-off basin and land applied. While small in amount, it has a strong objectionable odor, and if it gets into surface water, can rapidly remove the oxygen needed by aquatic life.

## Protecting Water Quality

Protect ground water supplies for your family and for your neighbors. There is a potential for nitrate contamination if applying manure to porous soils or areas with high water tables. Manure and fertilizer nitrogen should be applied at a rate to meet the annual needs of the crop. Ideally, it should be applied as near to crop uptake as possible. Fall-applied manure should be done when the soil has cooled to less than 50 degrees and a cover crop planted on soils that are vulnerable to soil erosion and runoff.

Surface water can be degraded by phosphorus that leaves the field on soil particles or as soluble P leached from P-saturated soils. Minimize soil erosion and use grass filter strips. Monitor soil P test levels so that manure is not applied to fields where tests exceed 300 lbs Bray P<sup>1</sup> per acre or 150 ppm Bray P<sup>1</sup>. Once soil tests exceed 40 ppm Bray P<sup>1</sup>, discontinue fertilizer P<sub>2</sub>O<sub>5</sub>. If soil test P reaches 75 ppm, manure phosphate should only be applied at the rate of annual crop removal.

## About this Publication

This publication was funded by USDA Special Needs, Purdue University, and Michigan State University.

It was adapted in part from the Livestock and Poultry Environmental Stewardship project, funded by the U.S. EPA, coordinated by the University of Nebraska-Lincoln, and published by the Midwest Plan Service, 122 Davidson Hall, Iowa State University, Ames, Iowa 50011-3080. See <[www.lpes.org](http://www.lpes.org)> or call (800-562-3618) to obtain access to this and other lessons.

### Publications in this series:

- Land Application Records and Sampling
- Emergency Action Planning for Livestock Operations
- Mortality Management
- Inspecting Your Confined Feeding Operation
- Feeding Strategies to Lower N&P in Manure
- Building Good Neighbor Relationships
- Disposal of Farm Medical Wastes
- Manure Nutrient Recycling
- Environmentally Sensitive Field Characteristics
- Manure Applicator Calibration
- Odor Control Options for Confined Feeding
- Comprehensive Nutrient Management Plans



It is the policy of the Purdue University Cooperative Extension Service, David C. Petritz, Director, that all persons shall have equal opportunity and access to the programs and facilities without regard to race, color, sex, religion, national origin, age, marital status, parental status, sexual orientation, or disability.

Purdue University is an Affirmative Action employer. This material may be available in alternative formats.

1-888-EXT-INFO  
<http://www.ces.purdue.edu/extmedia>



MSU is an affirmative-action, equal-opportunity institution. Michigan State University Extension programs and materials open to all without regard to race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, marital status, or family status. Issued in furtherance of MSU Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Margaret A. Bethel, Extension Director, Michigan State University, E. Lansing, MI 48824. This information is for educational purposes only.