

LIVESTOCK

Manure and Mortality



AUTHORS & INSTITUTIONS

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SECTIONS

Section 1: Environmental Risks

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INTRODUCTION

Caring for livestock brings with it a unique set of challenges and responsibilities. When managing livestock you must consider not only the welfare of the animal and production efficiencies but also the environmental impacts of the operation. This awareness can reduce environmental risk and financial liability and in some cases allow for participation in programs that can pay the operation for good stewardship.



How To Get Started

Developing a manure management plan may seem like a daunting task or something done by large farms, but the components of a plan can be applied to all types of farming operations. A common misconception is that manure management must be an all-or-nothing approach.



This is not necessarily true as many plans are developed and implemented using an integrated approach. Many small farms can benefit by looking at the components of a manure management systems plan, evaluating what is feasible for your farm, and understanding what options may be available. It also enables you to develop a sustainable plan for the future by reducing environmental risk and streamlining fertilizer costs.

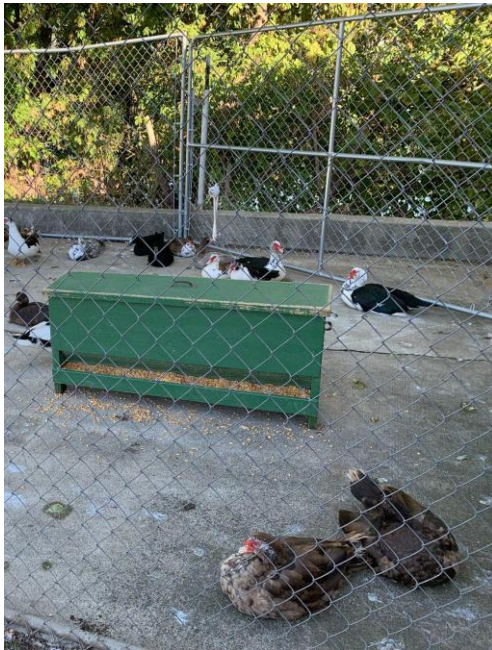


First, think about what encompasses your farm.

Describe your farm: Identify the goals, future growth objectives, current resources, and number of animals that currently reside on your farm.

Map land base resources: Identify the number of acres you own or lease and the number of these acres usable for specifically managing and caring for your animal(s). Acres to exclude from this calculation would be any area where manure should not be spread or where it is not feasible, such as wetlands, wooded areas, buildings, riding arenas and other areas.

By doing this initial exercise, you will get an informed perspective as a starting point.



Next, you will need to calculate the volume of manure produced by all your animals.

You can find assistance with this calculation in the [Small Farm Manure Management Planning factsheet](#). Having an accurate idea of how much manure you are dealing with on a monthly basis will be extremely helpful in the planning process as well as in helping you understand if your land-based resources are adequate.

Manure collection is the next piece of information you will need.

Manure collects in barns, pastures, dry lots and other places. These places lead to collection at different intervals. Your animals may be housed at another facility for part of the year, like show horses or only be raised on the farm for part of the year, like broiler chickens. When you know the daily amount and the number of days, you can calculate the amount of manure that is being produced on the farm.

With this information, you can decide on the size and type of manure storage facility you need or alternative manure treatments, like composting. Composting can also be useful in dealing with inevitable animal mortalities.

Manure, once collected and stored, must be disposed of in a responsible way.

Making a plan to do this and carrying it out is the final step of manure management. What land base and equipment you have available to you is a big part of deciding how and when to do this. Considering the weather and your neighbors should also be a part of your decision-making.



SECTION 1

Environmental Risks

Primary Considerations

- Water quality
- Soil health
- Animal welfare
- Neighbor relations

Process for Getting Started

- Calculate the amount of manure created
- Build an appropriate storage or compost facility
- Make a plan for an environmentally responsible application
- Carry out your plan

Disclaimer: For a specific list of resources in the above description, view the Necessary Resources area of this section.



MANURE AND MORTALITY

COMMON QUESTIONS

01

How do I test manure?

Book values of manure are just averages and don't consider factors such as varying storage and application losses, temperature, diet or other factors. The first step to figuring the value of your manure is to take a representative sample and send it in for analysis. [Several certified laboratories](#) are available, with a typical cost of around \$32 per sample for a basic analysis. It is important to use proper collection techniques when the sample is collected. The lab you select will have sampling instructions on its website.

02

How do I compost manure?

Composting is the managed biological decomposition process that converts organic matter into stable, humus-like material. Microorganisms, including bacteria and fungi, break down organic components of manure and bedding into smaller particles. The resulting compost is a dark, earthy-smelling product like potting soil. Four key factors will determine the success of your composting efforts: Carbon to nitrogen ratio, moisture content, temperature range, and aeration.

03

How can I start a livestock farm?

While my answer can't encompass everything you will need to know you should be aware of the **Right to Farm (RTF)** and **Generally Accepted Agricultural Management Practices (GAAMPs)**. Following these laws and rules will dictate whether you have an affirmative defense in case people complain about your operation. I suggest you go through the siting process through the Michigan Department of Agriculture to establish this defense.

04

How do I keep my neighbors from complaining?

Some neighbors are going to complain no matter what you do, but that shouldn't stop you from being a good neighbor to them. Two things that help the most are keeping your farmstead clean; people tend to smell with their eyes first. If they see a messy farm they will assume that the offending odor or fly problem is your fault. There are opportune times to spread manure that will lessen the unpleasant odors.

- A good time to spread manure is in the morning. As the day goes on, warm air rises and carries odors up and away from the ground. Spreading in the morning once everyone has left for work can help with neighbor relations.
- A breezy, cooler day disperses odors, unlike warm, humid days. Incorporate manure within 48 hours (unless applied to alfalfa).
- Avoid spreading when the wind is blowing in the direction of residential areas and on weekends or holidays due to the increased potential for people to be home or having larger gatherings.
- Notify your neighbors that you plan to spread. Studies have shown that neighbors who knew a producer tended to notice less odor when spreading manure.

05

Can I get help paying for any of this?

Yes, you can receive assistance to start making your farm business more sustainable. Contacting the partner agencies listed below is the first step. These agencies will help you develop a conservation management plan that can mitigate any resource concerns on the farm. They will also guide you to funding opportunities for costshare, grants, and loans.



RESOURCES & PARTNERS

Necessary Resources

Manure Management

- <https://www.canr.msu.edu/resources/small-farm-manure-management-planning>

Manure Testing

- <https://www.canr.msu.edu/news/manure-analysis-provides-accurate-account-of-plant-available-nutrients>

Composting

- https://www.canr.msu.edu/resources/composting_on_michigan_farms
- https://www.canr.msu.edu/resources/carcass_composting_a_guide_to_mortality_management_on_michigan_cattle_farms

Right to Farm

- <https://www.michigan.gov/mdard/environment/rtf>

Financial Assistance

- <https://www.michaelfields.org/grants-advising-resources>
- <https://www.nrcs.usda.gov/>

Partners

- **Michigan Department of Agriculture**
<https://www.michigan.gov/mdard/environment/rtf>
- **Natural Resource Conservation Service**
<https://www.nrcs.usda.gov/>
- **Farm Service Agency**
<https://www.fsa.usda.gov/>
- **Conservation Districts**
<https://www.macd.org/>
- **U.S. Fish and Wildlife Service**
<https://www.fws.gov/>
- **Pheasants Forever**
<https://www.pheasantsforever.org/>
- **Michael Fields Agricultural Institute**
<https://www.michaelfields.org/grants-advising-resources>