

Manure management plan checklist - required items with rule revision:

The required items of a manure management plan include the numbered, bold language. The lettered, non-bold items include the specific sub-components consistent with meeting the intent of each required part of the manure management plan.

Feedlot Owner _____

Feedlot Location _____

1. A description of the manure storage/handling system and the expected annual amount of manure and nutrients which will need to be land applied:

- ___ a. Description of type(s) of manure structures for containing manure, feedlot runoff, milk parlor wastewater and other wastewater. Include design capacity and # months of storage.
- ___ b. General description of manure stockpiling locations and/or storage techniques for solid manure.
- ___ c. Number of each livestock type contributing manure to each of the manure storage/handling systems.
- ___ d. Tons or gallons of manure removed from each manure storage system per year (range and average). Where past records are unavailable, list the estimated annual gallons or tons of manure to be produced for each manure storage system.
- ___ e. Frequency and timing of manure removal from each storage structure (or expected frequency of removal for new or changing operations).
- ___ f. Annual manure nutrients (N and P) which will need to be land applied. Base on previous records of volumes/weights applied and manure nutrient test results. If past records are not available base on estimated nutrients generated from the livestock minus expected nutrient losses during storage.

2. Application methods and equipment and calibration procedures

- ___ a. Method of application for each field, including the approximate number of days between application and incorporation.
- ___ b. How equipment is calibrated.
- ___ c. Practices to ensure uniform application.

3. Acreage available for manure application, including maps or aerial photos showing field locations and areas within fields that are suitable for manure application.

- ___ a. Field locations for manure application identified on maps and referenced to a specific farm/tract/field #. A map(s) should show field locations in reference to barn location.
- ___ b. Acres of cropland available for manure application after adjusting for state and local setback requirements.

4. A description of manure nutrient testing methods and frequency, and the expected nutrient content of the manure to be applied.

- ___ a. Previous manure nutrient test results, if available.
- ___ b. Manure nutrient testing methods and frequency.

5. Planned manure application rates and assumptions used to determine these rates, including assumptions of crop nitrogen and phosphorus needs and nitrogen and phosphorus from all manure and non-manure sources

- ___ a. Anticipated crop rotations for each field where manure is to be applied.
- ___ b. List of non-manure sources of nutrients for each field.
- ___ c. N, P₂O₅ and K₂O needs for each crop type in the rotation, based on realistic yield goals, N credits from previous crop, soil type, and any soil test results.
- ___ d. For manure applied to legumes, list of expected N removal.
- ___ e. Tons or thousands of gallons of manure planned to be applied per acre for each field.
- ___ f. Number of loads of manure needed for each field to achieve planned rate.

6. Total nitrogen and phosphorus amounts from manure and non-manure sources to be applied per acre on each field and for each crop in the rotation when applied in accordance with the planned manure rates established under item 5.

- ___ a. Planned N and P₂O₅ amounts to be supplied by manure for each field or cropping system.
- ___ b. Planned N and P₂O₅ amounts to be supplied by commercial fertilizer for each field or cropping system.
- ___ c. Planned N amounts to be supplied by legumes for each field or cropping system.

7. Expected first and second year plant available nutrients from manure

- ___ a. How much of the nutrients are expected to become available to the crops during the first and second cropping seasons following manure application.

8. Expected Months of Application

- ___ a. Expected months of application.

9. A description of protective measures to minimize the risk of surface water and ground water contamination when applying manure in a floodplain, special protection area, soils with less than three feet above limestone bedrock, drinking water supply management areas where the aquifer is designated vulnerable under Minn. R. chapter 4720 and land within 300 feet of all surface tile intakes, sinkholes without constructed diversions and uncultivated wetlands. Protective measures include, but are not limited to, soil and water conservation measures, timing of application, methods of application, manure application rates, and frequency of application.

- ___ a. Protective measures when applying in flood plain.
- ___ b. Protective measures when applying onto soils with less than 3 feet above limestone to bedrock
- ___ c. Protective measures when applying in a drinking water supply management area where the aquifer is designated vulnerable under Minn. R. 4720.
- ___ d. Protective measures when applying manure on soil within 300 feet of lakes, streams, intermittent streams, drainage ditches without berms and wetlands.
- ___ e. Protective measures when applying manure within 300 feet of surface tile intakes and sinkholes.

10. For land application onto frozen or snow-covered soil, the following information about the fields that may receive the manure or process wastewater:

- ___ **Field locations**
- ___ **land slopes**
- ___ **proximity of fields to surface waters**
- ___ **expected months of application for each field**
- ___ **Tillage and other conservation measures used to minimize the risk of manure contaminated runoff.**

11. A description of how phosphorus from manure is to be managed to minimize the risk of excessive phosphorus build-up in soil and transport to surface waters resulting from soil phosphorus build-up to levels exceeding:

- **150 ppm (bray P1) or 120 ppm (olsen) outside of special protection areas, or**
- **75 ppm (bray P1) or 60 ppm (olsen) within special protection areas.**

- ___ a. The frequency of manure application to fields with phosphorus levels exceeding the levels above.
- ___ b. A description of phosphorus/soil management practices for the fields receiving manure that also have phosphorus levels exceeding the above levels.

12. Plans for soil nitrate testing in accordance with University of Minnesota Extension Service recommendations.

- ___ a. List of types of conditions (e.g. crop rotations/soil management) where soil nitrate testing will be conducted.

13. Type of cover crop to be planted when manure is to be applied in June, July, or August to fields that have been harvested and would otherwise not have active growing crops for the remainder of the growing season.

____ a. Location of fields meeting the above condition and the type of cover crop to be planted.

Record Keeping

Cropland management records shall contain the following information:

1. Field locations and actual acreage where manure is applied.
2. Volume or weight of manure applied on each field.
3. Manure test N and P content.
4. Dates of application.
5. Dates of incorporation when incorporating within 10 days.
6. Expected plant available amounts of N and P released from manure, legumes, and commercial fertilizers.
7. Description of deviations from the manure management plan and reasons for changes.