

Water Quality Enhancement Activity – WQL15 – Reduce the concentration of nutrients on farm by limiting the amount of feed and fertilizer brought on livestock farms



Enhancement Description

Grow at least 75% of feed for livestock on the farm and use manure from the livestock to supply at least 50% of N, 90% of P and 90% K for crops grown on the farm.

Land Use Applicability

Cropland and pastureland.

Benefits

On livestock farms, when feed for livestock is brought on to the farm and manure from the

livestock is spread on the farm, over time this can result in a buildup of nutrients on the farm. This problem is made worse if the nutrient value of the manure is not accounted for and additional fertilizer is applied to crops. By growing the majority of feed for livestock on the farm and properly accounting for the nutrients in the manure when applying it to crop land, better nutrient cycling is achieved. Nutrients are not concentrated on the farm and a more sustainable operation is possible.

Criteria

1. At least 75% of feed for livestock must be grown on the farm.
2. For crops grown on the farm, manure from the livestock must supply at least:
 - a. 50% of N
 - b. 90% of P
 - c. 90% of K

Documentation Requirements

1. Documentation of total feed requirements for livestock
2. Documentation of feed purchases from off farm.
3. Documentation of nutrient requirements for crops.
4. Documentation of off farm nutrient purchase.

Michigan Supplement

Water Quality Enhancement Activity- WQL15- Reduce Concentration of Nutrients on Farm: Limiting Amount of Feed and Fertilizer Brought on Livestock Farms

Enhancement Description

Grow at least 75% of feed for livestock on the farm and use manure from the livestock to supply at least 50% of Nitrogen (N), 90% of Phosphorus (P) and 90% Potassium (K) for crops grown on the farm.

State Criteria

1. At least 75% of feed for livestock must be grown on the farm.
2. For crops grown on the farm, manure from the livestock must supply at least:
 - a. 50% of N
 - b. 90% of P
 - c. 90% of K

Documentation Requirements

1. Documentation of total feed requirements for livestock.
 - a. Record animal weight and number of animals for each weight class.
 - b. Use 2-3% of the live body weight to calculate the daily feed demand.
 - c. Document the number of days the animal is maintained on the farm.
 - d. The Feed Requirement Calculation Sheet may be used.
 - e. Document the quantity of feed use annually.
 - f. Alternatively, the Michigan Grazing Calculator can be used to calculate feed requirements of livestock even if not on pasture. The information on the Inventory worksheet for Livestock numbers in Table 1 should be completed. The calculation appears on the Forage Balance by Month worksheet in Part 5 in the table as tons needed. The table refers to hay, but the calculation is based on feed needs regardless of type of feed.
2. Documentation of feed purchases from off-farm.
 - a. Record quantity purchased and date of purchase for the year.
 - b. Record production yields of feeds grown on farm for the year. Average production yields over the past 5 years may be used as the base annual production when yield records are available.
 - c. Production must be at least 75% of the document annual feed needed.

3. Documentation of nutrient requirements for crops.
 - a. Record harvested yields for each feed crop grown by field.
 - b. Soil test analysis reports for each field in which feed crops are grown.
 - c. Use the MI Farm Nutrient Balance spreadsheet found in the Field Office Technical Guide in Section IV Technical Tools to document expected crop nutrient removal.
Alternatively, use Manure Management Planner or MSU Extension Bulletin E2904 Nutrient Recommendations for Field Crops Grown in Michigan to document crop nutrient removal.
 - d. Use the MI Farm Nutrient Balance spreadsheet with the animal inventory section and the crop production section completed. This spreadsheet will calculate the expected amount of nutrients available from the manure produced on farm and subtracts those nutrients from the needed crop removal nutrients to achieve the yield. The amount of nutrients produced should be the criteria above.
 - e. A Nutrient Management Plan or CNMP, if available, may be used as documentation along with records from Items 1 and 2.

4. Documentation of off farm nutrient purchase.
 - a. Record the type of nutrient purchased, quantity and date for the year.
 - b. A Nutrient Management Plan or CNMP, if available, may be used as documentation with records of purchases.

Feed Requirement Calculation

| Animal | Animal Weight | Number of Animals | Days on Farm | Feed Required in Tons annually |
|--------------------------|----------------------|--------------------------|---------------------|--|
| Example Brood Cow | 1200 | 35 | 365 | [(1200*0.025)*35]*365=383250 /2000=192 Tons |
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| Annual Total | | | | |