

Feeding livestock on pasture and crop residue

Using management practices to avoid creating feedlot conditions*

Proper livestock feeding practices on pasture and crop residue are necessary to avoid adverse environmental impact. These guidelines summarize management practices, but do not create a management plan or rule, nor do they supersede local ordinances. They also may apply to pastures, which are exempt from feedlot rules (7020), but not from other state rules to protect water quality (7050 and 7060).

*This guide was first developed in 2009 in cooperation with the Minnesota Association of County Feedlot Officers and University of Minnesota-Extension.



Definition of pasture

“Pasture” means areas where grass and other vegetation are used for grazing, including winter feeding areas, and where the concentration of animals allows vegetative cover to be maintained during the growing season, except in the immediate vicinity of feed and water areas, walkways, and other specific service areas. Sufficient vegetative cover will reduce soil erosion and manure-contaminated runoff. Determinations of whether or not a feeding area is an animal feedlot will continue to be made on a case-by-case basis.

The most common type of seasonal or crop residue grazing is stock cows on corn stalk residue after combining. It requires available water and sufficient crop residue that is not covered by snow or ice. These grazing areas typically will be planted to a crop the following growing season. Feed is brought in when crop residue or pasture grasses are not adequate to sustain livestock. Feed bunks and round bale feeders are common types of feeding equipment.

Pasture and crop residue grazing management practices

By moving the location of feeding equipment, the formation of manure packs around feeding equipment will be minimized and environmental impacts reduced. The frequency of movement will depend on the number and size of animals in any given area. Check with your County Feedlot Officer regarding a management plan and to determine if any additional requirements are necessary for feeding areas in your county.

Additional practices that should be implemented include removal and land application of accumulated manure at agronomic rates as soon as weather allows, and establishing a vegetative cover for at least one full growing season prior to reuse as a feeding area. The University of Minnesota-Extension provides more information on the [Grazing and Pasture Management for Cattle](#) webpage.

Locate sites away from sensitive areas

It is the producer's responsibility to locate and manage all feeding equipment and areas so that manure-contaminated runoff from the site does not discharge into waters of the state. Avoid locating feeding equipment in the following areas:

- Rock quarries, gravel or sand pits, bedrock, or any mining excavation sites;
- Designated shoreland areas;
- 100-year floodplains;
- 300 feet of tile inlets, drainage ditches, streams, wetlands, or a sinkhole;
- 100 feet of a private well; if a sensitive water supply well, 200 feet;
- 1,000 feet of a community water supply well or other wells serving a public school as defined under Minnesota Statutes, section 120A.05;
- Land with greater than six percent slope;
- Land with slopes between two and six percent where waters of the state are within 300 feet, except where clean water diversions and erosion control practices are installed;
- Special protection areas.



Periodically move feed bunks and water tanks

Impact of over-stocking

When stocking density exceeds the carrying capacity of the available crop residue or pasture grasses, the soil canopy maybe substantially reduced, lessening its effectiveness against soil erosion.

Accumulation of livestock waste exceeding the upcoming crop or grass nutrient needs, particularly phosphorus, can create feedlot conditions with potential to negatively impact the environment, particularly if the livestock are located near a sensitive area such as a lake or stream. Feed from grazing on stubble



fields or cropland where the stover has been removed or harvested is less palatable and often has little feed value for livestock. Those areas are considered denuded of vegetation and applicable feedlot rules should be followed.

Existing Feedlots

If animals are added to an existing feedlot operation, the producer must ensure that the management practices described in this fact sheet and applicable state and federal rules are met at all times. Depending on the management of the feedlot and feeding areas, a modification to the registration may be required. If the total number of livestock increases to 1,000 animal units or greater, or if the criteria for a federal large Concentrated Animal Feeding Operation (CAFO) designation are met, a National Pollutant Discharge Elimination System (NPDES) or State Disposal System permit may be required.

If you have questions about cropland or pasture feeding areas, please contact your local County Feedlot Officer or the Minnesota Pollution Control Agency on the Web:

www.pca.state.mn.us/water/feedlots.

Frequently asked questions

Do I need to register my feeding areas with the county or state?

Yes, if the feeding area has little to no vegetative cover and manure has or is allowed to accumulate, it is a feedlot and must become registered. Some counties require all feeding areas to register; contact your local County Feedlot Officer or Planning and Zoning Administrator for assistance with questions about registration requirements.

Are feeding areas exempt from the feedlot rules?

Yes, as long as feedlot conditions are not allowed to develop as spelled out in the Management Practices section of this fact sheet and the number of livestock stays below the NPDES permitting threshold. However, general water quality protection rules (7050, 7060) still apply.

Am I grandfathered in since I have always fed in the same area for years?

No, pollutants or pollution cannot be grandfathered in. A feeding area may exist unregulated until feedlot conditions develop or a pollution hazard is created.

Why should I move my feeder bunks around the feeding area while providing maintenance or supplemental feeding?

This is essential to avoid becoming a feedlot or allowing manure packs to develop. Uniform distribution and land application of manure ensures that nutrient loading does not exceed agronomic rates for the following crop year. Excessive livestock traffic and manure/feed pack material can kill the pasture grasses.

Definitions

Agronomic rates – Rates are determined either by manure sampling, or by volume using field data and research from the University of Minnesota and the Midwest Plan Service. Agronomic rates usually indicate how much N-P-K are required to obtain a maximum yield for the following growing season without exceeding required soil nutrient levels.

Carrying capacity – The maximum stocking rate possible without inducing permanent or long-term damage to vegetation or related resources. The rate may vary from year to year in the same area as a result of fluctuating forage production.

Grazing management plan – Action designed to secure the best practicable use of the forage resources and protection of the environment by manipulation of the grazing animal.

Heavy use area – Where heavy livestock traffic can be expected such as cattle paths, walkways, watering areas, creep feeders, feeding devices, working corrals and chutes, loading areas, shade trees and crossings.

Manure management plan – Managing the amount, form, placement, and timing of plant nutrient applications to optimize plant growth, provide safe nutritious food, and minimize environmental degradation.

Pasture – MN Statute 116.07(q) Pasture means areas including winter feeding areas as part of a grazing area, where grass or other growing plants are used for grazing and where the concentration of animals allows a vegetative cover to be maintained during the growing season.

Large CAFO – Confined Animal Feeding Operation where the confinement of animals meets or exceeds the minimum number of animals as specified by EPA as a large CAFO and requires an NPDES permit.

Feeding areas – Maintenance feeding areas where – supplying harvested feed to correct deficiencies of the diet to grazing animals when available forage does not meet their minimum daily requirements. This may be necessitated by excessive grazing, inclement weather, or the lack of desired quality forage.

NPDES permit – National Pollutant Discharge Elimination System permit or NPDES permit means a permit issued by the agency for the purpose of regulating the discharge of pollutants from point sources including concentrated animal feeding operations (CAFOs).

Special protection areas – Land within 300 feet of all: A. Protected waters and protected wetlands as identified on Department of Natural Resources protected waters and wetland maps; and B. Intermittent streams and ditches identified on U.S. Geological Survey quadrangle maps, excluding drainage ditches with berms and segments of intermittent streams that are grassed waterways.

Stocking density – Relationship between number of animals and area of land. It may be expressed as animal-units per acre, animal-units per section, or AU/ha.

Stocking rate – Number of specific kinds and classes of animals grazing or utilizing a unit of land for a specific period of time. Stocking rate may be expressed as animals or animal units per acre, hectare, or section, or the reciprocal (area of land/animal).

Stover – Leaves and stalks of corn, sorghum or soybean plants that are left in a field after harvest. It can be directly grazed by cattle or dried for use as [fodder](#) (forage). It is similar to [straw](#), the residue left after any cereal grain or grass has been harvested at maturity for its seed.

Stubble – Basal portion of herbaceous plants remaining after the top portion has been harvested either mechanically or by grazing animals.

Supplemental feed – Supplying concentrates, protein, mineral, vitamins and/or salt to correct deficiencies of the grazing area diet.

Waters of the State – All streams, lakes, ponds, marshes, watercourses, waterways, wells, springs, reservoirs, aquifers, irrigation systems, drainage systems, and all other bodies, surface or underground, natural or artificial, public or private, within or bordering any portion of the state.

Winter-feeding area with nutrient management and cover



February



April



May



June