United States Environmental Protection Agency

Beef Cattle and Environmental Stewardship

Management of manure and other by products of livestock production is a complex environmental issue. Manure and livestock by products can have both positive and negative environmental consequences. Manure can produce substantial benefits and/or result in severe environmental degradation. The actual environmental result depends upon choices that the producer makes.

The beef industry faces growing scrutiny of its environmental stewardship. The potential impact of an individual operation on the environment varies with animal concentration, weather, terrain, soils, plans for expansion, and numerous other conditions.

- What are your highest risk situations or practices for your livestock operation?
- Are you developing plans and investing resources to address the highest risk situations?
- Are you an environmental steward?

It is hoped that this pictorial review of management practices found on beef farms will benefit you in identifying and implementing best management practices and being an environmental steward.

Managing Storage

- Manure and effluents can be managed and stored to protect water quality.

Depth markers gauge runoff holding pond levels and help avoid capacity issues.

Bermed manure storage prevents runoff.

Sediment basins are used to trap and manage solid manure.

- Improperly stored and managed effluents could pollute surface or ground water.

Earthen storage with eroded sidewalls could result in a discharge.

Runoff from unprotected stockpiles could pollute surface water.

Solid manure should be periodically removed from sediment basins to prevent capacity issues.

Land Application and Nutrient Management

- Properly applied manure is a valuable source of plant nutrients that improves the quality and productivity of soils.
- Nutrient Management Plans provide a proper balance of nutrients and protect water quality.

A calibrated spreader applies manure evenly.

Creating and following nutrient management plans could improve the quality of soils.

Center pivots with low pressure nozzles evenly apply liquids from holding ponds with limited odor.

- Some application practices could cause problems.

Application to frozen soils.

Lack of planning could result in manure application at inappropriate times.

Manure from spray irrigation applied directly to a drainage ditch. Big gun sprayers also could unevenly apply effluents and cause runoff.

Public Perception

- Well maintained beef facilities can be managed to benefit the environment and improve public perception of the industry.

Fencing keeps cattle from having direct access to surface waters.

Grass filter strips protect surface water from manure and effluent application.

A well maintained facility emphasizes dust and odor control.

- Some practices could harm the environment and affect public opinion.

Animals should not be allowed direct access to surface waters.

Improper storage of manure could lead to surface water contamination.

Poorly managed facilities could affect public opinion.

Production Areas

- Best Management Practices can be applied to beef production areas.

A bermed feedlot contains polluted runoff.

Feedlots located on sloped land provide good drainage and protect animal health.

Concrete ditches (or well maintained grassed waterways) control effluents and carry it to a runoff holding pond.

- Some practices should be avoided.

Animals should not be allowed direct access to surface waters.

Wintering operations provide additional challenges to containing runoff and stormwater.

Uncontrolled manure that enters surface waters constitutes a point source discharge.

Other Practices

- Management Practices showing a concern for environmental health and safety.

Pasture rotation provides adequate cover to prevent runoff to surface waters.

Self watering systems protect surface water from direct access by animals.

Cleaning solids from ditches allows effluent to flow freely to retention ponds.

Develop an emergency management system.

Testing soils helps determine nutrient levels and plan for land application of manure.

Wind row composting allows for recycling of manure and aids in planning for nutrient management.

For further assistance please contact your local office of USDA's Natural Resources Conservation Service or Extension office (http://offices.usda.gov/scripts/ndISAPI.dll/oip_public/USA_map), conservation district (www.nacdnet.org/directory/index.htm), state environmental agency (http://cfpub.epa.gov/npdes/contacts.cfm?program_id=7&type=STATE), or state conservation agencies (http://nascanet.org/docs/state2.html). For assistance in contacting local offices, to obtain copies of this document or other types of assistance, contact EPA's Ag Center (www.epa.gov/agriculture) or call toll free 1-888-663-2155.

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