

Quick Facts

- Alberta's crop land area in 1996 was 9.5 million hectares.
- One beef cow can produce up to 2.1 tonnes of manure per year.
- In 1996, Alberta as a whole produced an estimated 6.3 million tonnes of manure.
- Grande Prairie County represents 1.4% of Alberta's cattle and calves
- The Lethbridge area produces up to 7% of beef cattle and 6.6% of hogs in Alberta.
- In the last 25 years, cattle numbers have increased by 32%. Farmland has grown by only 5%.
- Livestock and livestock manure may account for 6-10% of global methane emissions.

CARC Priorities

In 1992, the Canadian Agricultural Research Council's list of priorities targeted manure management both directly and indirectly. The following is a list of CARC's priorities:

1. Productivity
2. Resource Management
3. Waste Management **
4. Agriculture/environment Interaction **
5. Food Quality

** Directly connected with manure management procedures.

Sources

Several informative sources are available regarding manure management.

1. Agriculture and Agri-Food Canada (1999). Manure Section, "Manure, Fertilizer and Pesticide Management in Canada". [Http://www.agr.ca/policy/epad/english/pubs/adhoc/manure/abs.htm](http://www.agr.ca/policy/epad/english/pubs/adhoc/manure/abs.htm)
2. Freeze, B.C. and Sommerfeldt, T.G. 1985 Breakeven Hauling distances for Beef Feedlot Manure in Southern Alberta. Canadian Journal of Soil Sciences
3. Innes, R. "Regulating Livestock Waste: An Economic Perspective." Choices (Second Quarter, 1999)
4. Wild Rose Agricultural Producers Website <http://www.wrap.ab.ca>

Based on "An Overview of the Social, Environmental, and Economic Aspects of Manure Management in Alberta's Livestock and Poultry Sectors"
University of Alberta
J. Unterschultz et al, 2000
Contact Wild Rose Agricultural Producers for more info.

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 Agriculture and
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Administration du rétablissement agricole
Agriculture et
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Prairie Farm Rehabilitation
Administration

Administration du rétablissement
agricole des Prairies

Canada

MANURE MANAGEMENT

A MANURE MANAGEMENT SERIES



A
General
Overview

1

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Prairie Farm Rehabilitation

Administration du rétablissement agricole

Livestock & Manure

The livestock sector of the agricultural industry is an important component of Canada's (& Alberta's) economy. It now accounts for nearly \$15 billion dollars of the nation's GDP (1997). Furthermore, Alberta farmers provide nearly one quarter of Canada's total livestock value. Thus sustainable agricultural practices that include manure management, are essential in keeping Alberta's livestock sector a leader on the national scene.

Why Manage Manure?

1. To reduce pollution and contamination of water with dangerous bacteria.
2. To enhance crop growth by distributing manure nutrients.
3. To keep high levels of air quality.
4. To reduce global warming by preventing the formation and the release of greenhouse gases.
5. To ease management stress in areas of high or growing livestock densities. Issues often center on storage, economics, and the environment.

Public Interest

Public pressures have become an important consideration when managing manure. Citizens demand that farmer's methods of manure management evolve to limit pollution levels and enhance atmospheric quality.

Environmental Concerns

If improperly managed, manure can cause serious environmental consequences.

1. Water Effects

- Contamination of groundwater with harmful high levels of nitrates. This can cause a condition known as blue baby syndrome.
- Supplying lakes, streams and rivers with extra nitrogen and phosphorus can lead to an algae bloom.
- Releasing harmful bacteria into water systems can affect animals and municipalities downstream.

2. Atmospheric Effects

- Reduction of air quality through increased levels of dust, odor, and ammonia.
- Production of greenhouse gases such as nitrous oxide, nitric oxide, carbon dioxide, and methane gas. A herd of 100 cattle, for example, can produce as much as 4000 cubic feet of methane gas, which is 10 to 25 times more harmful than carbon dioxide in its effect on global warming.

Resource Versus Waste

Prior to managing the manure, one needs to decide whether it's a resource or a waste. Keep in mind, manure has the capacity to serve as an important plant nutrient

- Between 75 and 90% of nitrogen, phosphorus, and potassium that animals ingest is later excreted.

In areas with limited cropland, manure management becomes waste management.

Animal Unit

One animal unit (AU) produces enough manure for one hectare of cropland per year. 1 AU Year is the average amount of forage (26 pounds of dry matter per day) consumed by a cow/calf production unit during one year.

