



## Manure Management

### Beneficial Categories



### Background

Manure is an inevitable part of raising livestock, therefore, it is important to have a management plan to capture the benefits it can provide while also preventing unwanted pileup. Cattle manure is a valuable source of many key nutrients including nitrogen, phosphorus, potassium, sulphur, magnesium and calcium. The nutrient content means that manure is a great source of organic matter, even when mixed with straw and bedding, to improve plant productivity, soil organic matter and structure, and water holding capacity. However, timing of application is important to prevent potential runoff. In addition, over application of manure past plan requirements can be a waste of time and money and can also cause runoff. Soil testing (to determine nutrient requirements of the soil) and manure testing (to determine nutrient levels of the manure) can help with balanced manure management.

### Examples of Ways to Implement Manure Management

If storing manure:

- If possible, use a concrete pad to avoid nutrient leaching into the soil/groundwater
- Keep winter feeding sites and corrals at least 30 metres from bodies of water
- Keep stored manure at least 60 metres from drilled water wells and 120 metres from streams, rivers, lakes and ponds

If treating manure:

- Treating manure can reduce moisture content, reducing both volume and odour
- Treatment options most commonly include composting and drying

If applying manure:

- Manure is not a uniform product; it varies based on the animal's diet, whether there is straw or bedding included, and treatment of manure prior to application

- Ideal application rate for manure will vary based on nutrient composition of the manure, nutrient requirements of the soil or crops to be grown, and the application method used
- The most common application method is using solid manure with a solid spreader. However, there are more precise methods available which can provide more accurate nutrient application and prevent over or under application.
- Timing of application is another important consideration to reduce odour and potential runoff. Be sure to check with your provincial government for regulations on appropriate application timing and timing of incorporation into the soil as provincial regulations vary and there may be consequences including fines for violations.

If overwintering in the field:

- Ensure you pick a location(s) in the field where the water runoff will be contained, as a lot of nutrients from the manure can be lost in runoff

### **Potential Economic Costs/Benefits**

Studies have shown a wide range of distances at which hauling manure is less expensive than commercial fertilizer. The evaluations depend on a range of factors including nutrient content of the manure, type of crop, soil condition, cost of transport, manure type and the market value of manure compared to commercial fertilizer. More information can be found on the [Beef Cattle Research Council \(BCRC\) website](#).

There are also decision-making tools and “calculators” from multiple provincial websites available. For more information, visit the sites below.

Alberta Agriculture and Forestry

- [www.alberta.ca/manure-transportation-calculator.aspx](http://www.alberta.ca/manure-transportation-calculator.aspx)

Manitoba Agriculture

- [www.gov.mb.ca/agriculture/environment/nutrient-management/marc.html](http://www.gov.mb.ca/agriculture/environment/nutrient-management/marc.html)

New Brunswick Agriculture

- [www2.gnb.ca/content/dam/gnb/Departments/10/pdf/Agriculture/MhaulCo%24t.xls](http://www2.gnb.ca/content/dam/gnb/Departments/10/pdf/Agriculture/MhaulCo%24t.xls)

Ontario ministry of Agriculture

- [www.gocorn.net/v2006/Manure/Ontario\\_Manure\\_Nutrients\\_Calculator\\_2013\\_ver1\\_2.xls](http://www.gocorn.net/v2006/Manure/Ontario_Manure_Nutrients_Calculator_2013_ver1_2.xls)

Saskatchewan Farming and Agriculture

- <https://publications.saskatchewan.ca/api/v1/products/75826/formats/84800/download>

## **Financial Incentives**

There are no current financial incentives available. The Government of Alberta has Manure Management Planner software available for download to assist with implementation or improvement in current practices at [www.alberta.ca/manure-management-planner.aspx](http://www.alberta.ca/manure-management-planner.aspx)

**For more information on manure management, you can visit the following sites:**

[Beef Cattle Research Council – Manure and nutrient management](#)

[Government of Alberta – Manure management planning](#)