

Best Management Practices

helping aquatic species at risk

Manure Application

The Sydenham River in southwestern Ontario is the only major watershed which lies completely within the Carolinian Life Zone and is relatively undisturbed by industrial development. This has made the river a biological treasure. The Sydenham River supports an incredible variety of aquatic life, or what we call biodiversity. At least 82 species of fish and 34 species of freshwater mussels have been found here, making it one of the most species rich watersheds in all of Canada. Several species in the Sydenham River are found nowhere else in Canada, and some remain at only a few locations globally. Many of these species at risk have been nationally listed as endangered, threatened, or of special concern by the Committee on the Status of Endangered Wildlife in Canada. You can help too. By adopting Best Management Practices (BMPs), you can help protect the Sydenham River and its tributaries. This series of fact sheets will assist you in deciding which BMPs are right for your property.

Manure can be a valuable source of nutrients for crop production. However when improperly applied to crops, these nutrients can be lost into our surface and groundwater. The Sydenham River has been found to have high nutrient levels. These concentrations of phosphorus and nitrogen in the river are at levels that pose potential risks to the aquatic species in this habitat. The high concentrations of these nutrients are partially associated with manure spills and runoff contamination. Most manure spills occur upon application. These spills can have significant adverse effects on the health of a stream. Spills can result in the deaths of a variety of aquatic species vital to the life cycle of the ecosystem. Not only is the aquatic life of the stream impacted from a manure spill and runoff contamination, but our groundwater supply is also vulnerable to these toxins.

- Technical advice and grants may be available to assist in implementing Best Management Practices on your property.
- If your project involves work in or near a watercourse, you may require a Fill, Construction or Alteration to watercourse permit from the Conservation Authority.
- Call before you begin your project.



A direct injection system is considered one of the best methods of applying liquid manure.

“Working Towards Healthy Watersheds”

When Not to Apply the Manure

Manure should not be applied if:

- soil is frozen (a sudden warming or rain can cause runoff without any infiltration of nutrients into the soil)
- soil is wet (the application equipment will cause soil compaction and additional rain could cause runoff)
- soil is too dry and there are cracks (the manure has a path deep into the soil beyond the root zone and into drainage tiles and/or ground water)
- the weather forecast calls for heavy rains within 12 - 24 hours of your planned application

Before you Apply the Manure

Test the soil and manure before you apply to interpret the needs of the crop and determine the application rate. Calibrate all application equipment before applying to ensure that the crop is receiving the most benefits from the application. It is a good idea to pre-cultivate the soil, if possible, before application to increase the absorption capacity of the soil, therefore decreasing runoff potential and increasing the nutrient uptake potential. Often manure is applied to wheat stubble or on hay ground and, therefore, pre-cultivation is not appropriate. In these cases, avoid steep slopes leading to a watercourse, well, catch basin etc.

After you Apply the Manure

After applying the manure to the field, monitor your tile drains and field surface for 30 minutes after application to ensure that there is no manure flow in the drains. In the case of finding manure flow into the drains, plug the tile outlets and leaks or reconnect any broken

lines. Contact the Ministry of Environment and contain the spill by constructing a berm or using bales of straw or sand bags.

Solid Manure

Solid manure is broadcast on the land with a manure spreader. In this method of application, try to spread as evenly as possible and incorporate the manure into the ground after application to maximize the nutrient value to the soil and to minimize the odours. You should not spread solid manure within 5 metres of an open watercourse.

Liquid Manure

Several different methods are available to apply liquid manure to your crop. In whatever method of liquid manure application that you chose to employ, do not spread within 10 metres of an open watercourse in attempts to minimize contaminated runoff. The methods of application are as follows:

Injection

This method of application can be done before planting or as side dress. Injection works best in dry soils. It is recommended in reduced-tillage as it requires limited tillage to incorporate the manure into the soil. With this method, there is control of the placement of application and soil compaction and odour are minimized.

Dribble/Broadcast

Dribble/Broadcast is the method of application where liquid manure is dribbled between the rows of the crop as side dress. This method also reduces the risk of compaction.

Irrigation

Using overhead irrigation is not recommended.



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