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3 | Guide 3 of 5 from **Canadian digestate management guide**

A Practical Guide:

Spring application of digestate on growing wheat

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What is digestate?

Digestate is a sustainable and valuable resource that can reduce input costs and improve soil health. Digestate is produced when organic material – such as manure or food waste – is processed through anaerobic digestion. It is nutrient rich and contains nearly all the nutrients that were found in the original organic material that went into the digester.

How is digestate used?

Digestate products can be used as organic fertilizers or as soil amendments supplying readily available nutrients, micronutrients and organic matter to sustain or improve soil quality.

Digestate producers and managers employ best management practices when handling and applying digestate to farmland. Best management practices that incorporate the 4Rs of nutrient management will achieve the most economically and environmentally beneficial use of digestate products.

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What does applying digestate on your farm look like exactly? In this example, the farm has no access to manure but a liquid digestate product from a nearby industrial biogas plant is available. The farmer's prior experience with the digestate product is that when used as an organic fertilizer, it produces good results and is an economical source of crop nutrients. Let's dive in.

This guide is ideal for farmers who...

- Have no access to animal manure
- Have prior experience with digestate
- Have winter wheat in their growing rotation

On-farm example: Field stats

Soil type: Bennington silt loam

Rotation: corn, soybeans, wheat (yield goal 200, 55, 100 bu/acre respectively)

Application: Scheduled for mid-April to growing winter wheat

Soil test: 35 P; 175 K; pH 6.8

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Seasonal Activities

Fall	Spring	Summer
• Harvest soybeans • Plant wheat	• Apply urea potash and sulphur • Apply digestate into standing wheat	• Harvest wheat

The digestate is band applied by a local custom applicator with a trailing hose toolbar that can be adapted for drag hose or tankers. Digestate application during freeze thaw reduces risk for compaction but risk for runoff is higher. Ideally, digestate will be applied before wheat begins to elongate.

Benefits

- ☑ Digestate is high in readily available nitrogen, which is ideal for wheat crops where crop nitrogen needs occur earlier than for corn, and when soil conditions are generally cooler and wetter.
- ☑ Digestate is a good source of sulphur (S).
- ☑ This timing for digestate is also ideal for organic systems where the crop relies on readily available nitrogen, and where N sources from solid manure often are not available when crop needs are highest.
- ☑ Digestate applied to growing crops reduces environmental losses such as nitrogen volatilization and phosphorus loss, especially when there is some crop canopy. If application occurs during freeze-thaw conditions, the freeze-thaw action helps incorporate nutrients into the soil.
- ☑ Digestate provides nutrients for subsequent crops in rotation and helps maintain nutrient balance.

Watchouts

- ⚑ Surface application where there is topography, can increase the risk of nutrient loss and/or nutrient movement from runoff and/or erosion.
- ⚑ Prolonged wet conditions could result in small application window.

For more detailed information on nutrient application and calculations refer to pages 85-88 of the Canadian Digestate Management Guide.

Ready to get started?

Connect with digestate producers near you!

There's no one place to find digestate. To source a supplier near you, CBA recommends contacting a biogas plant in your region and asking them directly. You can find a list of projects at biogasassociation.ca and check out their member list for potential suppliers.

TIP! Ask your custom applicator and your agronomist to see if they have a lead on local digestate.

The biogas & RNG industry is growing rapidly. Keep your ear to the ground as more digestate sources will become available through the growing network of producers.

Discover biogas for your farm!

If you're exploring biogas for the first time, or if you're ready to plan a facility for your farm, farmingbiogas.ca is the go-to source for agricultural biogas information and connections in Canada.

Check out these resources to get started!

Is biogas & RNG a fit for your farm?

Take the online self-assessment tool to start exploring if it's a fit for you.

Meet the farmers fueling Canada's clean energy

Learn how three Canadian farmers use anaerobic digesters on their farms.

Canadian Biogas Association

The Canadian Biogas Association is a member-driven industry organization that supports the diverse needs of the biogas and renewable natural gas (RNG) sector with the goal of building a strong, robust biogas & RNG industry in Canada. We represent companies that span the interests of biogas & RNG production. By working with the agricultural sector we can strengthen both industries by maximizing the utilization of organics, such as manure and food waste to produce renewable energy and fertilizer.

Want to learn more?
farmingbiogas.ca

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