



MARA Newsletter

FALL FERTILITY PROGRAM

This is a head start to next year's crops with Fertility Guidelines

Options and Tips

Many prairie farmers choose to apply fertilizers to their crop fields in the fall for many reasons;

- ◆ Save time in the spring
- ◆ Allows seeding early: seeding early has lots of advantages such as increases yield up to 2% a day. If you can seed 5 days early, that can give a 10% yield advantage.
- ◆ Fall is the time to get the advantage of lower fertilizer costs. 90% of time fertilizer is significantly cheaper in the fall than in the spring.
- ◆ Allows safer seed placed fertilizer rates in the spring

Nutrient losses are something to consider when make nutrient plans.

FALL NITROGEN APPLICATION

It is important to be cautious when applying N in the fall.

Nitrate form of fertilizers are more susceptible for losses as a result of denitrification, leaching and volatilization. E.g. Urea

Ammonium Sulphate, a source of Sulphur can provide Nitrogen in the form of ammonium. Applying it late in the fall helps keep it in ammonium form which is less susceptible for losses compared to nitrate.



INSIDE THIS ISSUE

Fall Fertility Program	1
Best Method of Application	2
Do a Test Run	2
Disadvantages of Broadcasting.....	2
Co-Banding Phosphorous.....	3
Salvage Canola Crops	3
When Feeding Canola Silage....	4

SPECIAL POINTS OF INTEREST

- Fall Nitrogen Application
- Consider Co-Banding Phosphorous
- Disadvantages of Broadcasting Fertilizer
- Salvage Canola Crops Can Make Good Cattle Feed

BEST METHOD OF APPLICATION



Banding is the best option; it reduces nitrate conversion and help protect fertilizer from microbial immobilization. When banding anhydrous ammonia, it is important to seal the ground behind the knives to minimize the risk of N losses. The best time to achieve highest performance is when soil is not too wet or dry. Moist soils can close the slots nicely and hold ammonia. Unusually wet falls

prevent fall fertilizer application.

Fall applied nitrogen best applied banded when soils have cooled down to 5 C or at least below 10 C at banding depth, it will remain in a stabilized form until spring, reducing the risk of ammonia to nitrate conversion and nutrient losses. Optimal temperature usually occurs around thanksgiving.

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DO A TEST RUN

Can do a test run to see how cloddy the soil is and how well soil can be sealed.

Run a short pass with anhydrous ammonia and go back to check whether there is a strong ammonia smell. Farmers should avoid applying fall fertilizers into wet soils/ fields that likely to become water logged. All types of fall treatments should avoid in poorly drained fields or low lying.

DISADVANTAGES OF BROADCASTING

When broadcasted, nitrogen is readily available for microbes to utilize and decompose straw. It reduces nitrogen availability for crop roots during the spring. It is also best not to disturb banded fertilizer during spring tillage or seeding operation.

If decided to put fertilizer too early, even N in anhydrous ammonia form can convert from ammonia to Nitrate form which is vulnerable to losses. Early N application not always causes N losses except hot and wet soil conditions

New technology with nitrification inhibitors, can be useful when variable moisture levels present which can delay ammonia to nitrate conversion. Examples for products with enhanced efficiency are ESN, SUPER U, or Anhydrous ammonia.

Controlled release products like ESN, a urea fertilizer with a polymer coating is another option for early fertilizer application.

These will delay initial release of N and provide gradually to match the crop needs.

Urea in ESN form needs warm and moist conditions in order to leak out of the polymer.

Some producers apply ESN together with urea, each 50%, where ESN acts as an insurance.



Canola Field at flowering stage

CONSIDER CO-BANDING PHOSPHORUS

Adding phosphorous into soil replenishes fields depleted in the nutrients and also boost yields. Fall is a good time to apply phosphorous as it does not move easily in the soil as nitrogen and is not very susceptible for losses. This also helps spread out phosphorus programs, so that seed placed fertilizer amounts do not exceed seed-safe rates.

Putting on fall nitrogen with phosphorus tend to increase availability of P to the following year crop due to the acidifying nature of anhydrous ammonia. Banding N & P together keeps P under the soil surface making it less vulnerable to losses from runoff and snowmelt.

Monoammonium phosphate is used as a source of N and P. It works well on its own or blended with products like Urea, ESN, or Super U in a banded fall application.

Recommend to save some phosphorus to place in seed row in the spring to provide some starter P for emerging seedlings, until roots can reach banded fertilizer in the previous fall.

Co-banding N, P and S in the fall make things easier and safer for farmers when spring seeding. Canola crop needs Sulphur. Ammonium sulphate is harsh when placed in seed row of canola. If you are using ammonium sulphate it's a good decision to put it in the fall to avoid toxicity and handling issues.

Fertilizer takes up moisture and cake in the air drills and stuff. By applying ammonium sulphate in the fall helps to get Sulphur in and good amount of N out of the way as well. Farmers who use ammonium sulphate likely will not need to apply S for the following three cropping years.

Full Article on Fall Fertility Primer: <https://www.grainews.ca/features/your-fall-fertility-primer/>

SALVAGE CANOLA CROPS CAN MAKE GOOD CATTLE FEED

By Barry Yaremcio, Beef Cattle Nutritionist, Yaremcio Ag Consulting (Cell: 403 741 6032)

With dry conditions in most of the province, late seeded crops, and hail storms, some canola crops have value as salvage and feed to cattle.

Canola plants that are in full bloom to early pod stage can be a high quality feed. The same nutritional value as a good quality first cut mixed alfalfa – grass hay. The earlier the crop is cut, the higher the quality. As the plants mature, quality is reduced but can be used as filler in cattle rations. Cattle readily eat canola greenfeed or silage. If the animals have not experienced this feed type previously, it may take two or three days for them to readily consume this product. Depending on quality, canola greenfeed or silage could possibly make up 100% of the daily ration. These crops and those damaged by hail require a feed test to establish quality before any recommendations can be made.

MACKENZIE APPLIED RESEARCH ASSOCIATION

MARA is serving the producers in Mackenzie County, most northern growing region in Canada. We provide most up to date knowledge and technology for the producers in the region to create avenues to reach high value markets and to build a sustainable production system.

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WHEN FEEDING CANOLA SILAGE

There are a couple additional concerns that need to be addressed when feeding canola silage or greenfeed compared to using a cereal crop as cattle feed.

- ◆ **First:** If the crops have been fertilized to produce a high yielding crop; nitrates and sulfur content could be a concern. Nitrate more so in the dry conditions because the crop did not develop sufficiently to use up the applied fertilizer. Sulfur could be a concern in both situations. High sulfur content above 0.55% in a high forage ration or 0.4% in a feedlot type ration can potentially cause polio. It is recommended that a representative sample be sent in for analysis (including nitrate and sulfur) to establish feed quality.
- ◆ **Second:** Canola, being an oil seed crop, can contain up to 42% oil by seed weight when fully mature. Two weeks after full flower, oil starts to develop in the immature seed. As the plant matures, the oil content continually increases. The majority of oil is developed from 35 to 55 days after full flower. Rations should contain less than 7% total fat or oil because rumen function is impaired above this level.

Plants drop leaves as they mature. Leaves and flowers contain a large percentage of the protein and energy. Bacteria that are involved with the ensiling process obtain energy from soluble sugars in the leaves. If the leaves have dropped, less energy is available and the ensiling process could take one to two weeks longer compared to a crop that supplies adequate sugars.

Work with various industry professionals including private consultants, feed company nutritionists or government specialists to develop a feeding program for the different types of animals that can utilize canola greenfeed or silage.

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