



Triticale Swath Grazing Demonstration Project

Since 2009, under the management of West-Central Forage Association, Alberta producers and specialists have evaluated the suitability of triticale swath grazing in terms of nutrition, palatability, practicality and cost. This report highlights some key findings.

What's the best way to feed cattle during the winter? It's a question that producers and researchers have grappled with for years.

For many producers, winter feeding involves a regular regimen of bringing silage or hay out to cattle. While this approach meets the animals' nutritional needs, it can be logistically and economically burdensome for producers.

At a time when producers have been trying to lower their costs, for many, the winter feeding bill keeps right on rising. This has led more producers to look at swath grazing as an alternative, with barley, oats and corn being among the most frequently grown crops for a swath grazing application.

In recent years, Alberta Agriculture and Rural Development (ARD) Crop Business Development Specialist Bill Chapman has been sizing up a different crop candidate: triticale. Chapman believes that spring triticale has the potential to produce significant yield, especially under drier conditions, compared to other crops.

"Triticale has a rye-like root system, being that it is rye crossed with wheat," he says. "The root system gives you better water use efficiency, and because there is more lignin in the stem, straw strength is improved and there is the potential for fewer leaf diseases than with other cereals."

To many producers, especially of an older generation, the word triticale tends to be a conversation-ender. Some still recall disappointing experiences with the crop going many years back, when the crop was tall, tended to lodge and was late in maturity.

"Triticale has been around for 30 or 35 years," says Carla Amonson, Manager of West-Central Forage Association. "At one time the available triticale varieties were extremely tall, very fibrous and had long awns that could be a problem in feeding cattle."

To many producers, especially of an older generation, the word triticale tends to be a conversation-ender.

Newer varieties of both spring and winter triticale have been registered within the last decade and have been associated with remarkable feeding productivity. Work at the Lacombe Research Centre has produced over 20,000 pounds per acre of dry matter, achieved 600 cow/days per acre, 91% crop utilization and fed cattle for roughly \$1 per day per head.

Despite these impressive numbers, long-standing perceptions about the crop have proven hard to shake.

In 2009, West-Central Forage Association set out to put some new data and producer experience around the issue of triticale swath grazing. WCFA set up a four-year program in which producers would test spring triticale, winter triticale or a mixture of both as part of their swath grazing systems.

This work has been generously supported by Agriculture and Agri-Food Canada, Agriculture and Food Council and Alberta Beef Producers, and by the involvement and expertise of several ARD professionals.

The research aimed to compare swath grazing winter and spring triticale to other cereal forage crops, identifying nutritional differences, regional differences and the value of winter and spring triticale varieties compared to a mono triticale crop.

To Chapman, building this benchmark of credible data and producer experience around triticale could have significant implications for cattle feeding in Alberta.

"If we can have a crop that can successfully overwinter our cow/calf operations at a reduced cost per acre," he says, "that would be huge." ●

Four producers share their views

These producers have practiced swath grazing over several winters and compared triticale to other cereal crops in that application. Here's their perspective on issues such as triticale production, palatability, management and feeding cost.



“To me, triticale has a better swathing window than barley.”

Bob Kidd

MAYERTHORPE

Over the last four years, Bob Kidd has swath grazed several triticale combinations – both spring and winter triticale varieties as well as a spring-planted mixture of the two – on his family’s operation near Mayerthorpe, Alta.

While Kidd was already well-acquainted with swath grazing as a practice, he has found triticale at least as well-suited to his operation as oats or barley. Still, an initial concern was how the cows would respond in terms of palatability.

“In 2011-12, we were doing straight triticale,” says Kidd. “I brought in a group of the neighbor’s cattle to feed and I wasn’t sure if they would go for the swath, so I put out some hay for them just in case. Some started out on the hay, but they went for the triticale with no problem.”

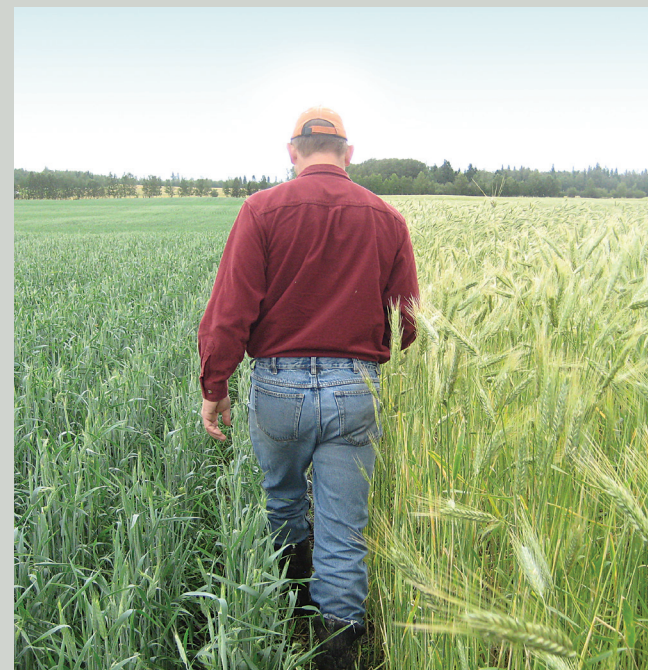
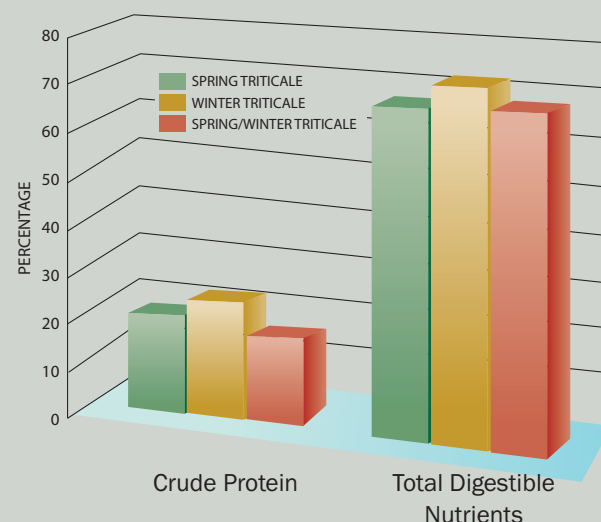
As producers and agronomists will testify, the timing of swathing is a critical consideration. That’s one of the reasons Kidd sees advantages to triticale over barley in a swath grazing situation.

“I think a good thing about triticale,” he says, “is that it gives you a better window of staging. You’re not just going to get two days of optimum conditions for swathing. You may get a week that’s good. To me, triticale has a better swathing window than barley.”

For Bob Kidd, swath grazing triticale has proven to be a nutritionally sound, cost-effective way to feed cattle over the winter. In fact, he expects that the triticale advantage will ultimately widen as producers learn more about the best ways to grow it.

“People have oats and barley figured out because they’ve been doing it a long time,” he says. “You are not going to get really good at growing triticale in just four years. There is potential for even better production by using different herbicides and fungicides. We’re still figuring triticale out, but we think it could be a good fit.” ●

Kidd 2011-2012



“To me, triticale is probably the closest thing there is to a complete or balanced ration.”

Kevin Porter

STONY PLAIN

Porter was already a swath grazing veteran when he joined the Triticale Swath Grazing Demonstration Project in 2010. When he compares that experience with what he's seen with oats, barley and rye, Porter finds plenty to like about triticale.

While some have observed that the rye parentage in triticale can cause a loss of palatability, if anything, Porter's experience has been the opposite.

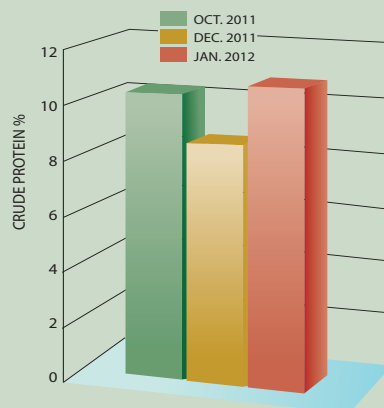
“We try to only give them one day's feed at a time, so they had to get to it if they wanted to eat anything, but in the end, it was as clean as any feed bunk,” he says. “To me, triticale is probably the closest thing there is to a complete or balanced ration. I thought they ate the whole plant better.”

Once the triticale is in the swath and ready for the cows, Kevin Porter believes a producer is in a good position. For those who are new to triticale, however, getting the crop to that point can be a learning process.

For one thing, Porter has found triticale to be longer-maturing than other cereal crops. If it's grown just like oats or barley, and swathed according to oat or barley timing, Porter believes you won't capture triticale's full feeding potential.

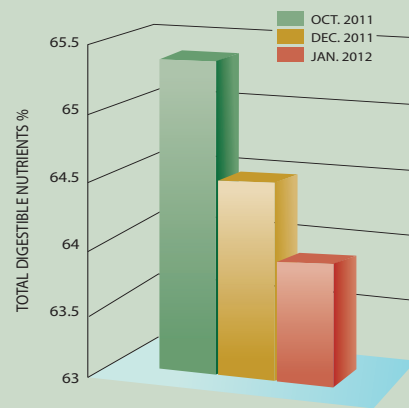
However, Porter has two reservations about swath grazing triticale. One is the potential for compaction in the field, and its long-term impact on productivity. Given that he calves in January, he also questions whether or not triticale alone delivers sufficient nutrition for late-gestation cows. All in all, however, triticale is a crop he wants to grow.

“One thing I like is the ability of the triticale to weather in the field,” says Porter. “It doesn't seem to deteriorate as fast as barley. But the most critical part to be able to capitalize on the seed value is the timing of swathing. You have to keep in mind that this is a 100-day crop, so it's a bit longer-season crop. You want to seed it early in June, not at the end of June.” ●



Spring/Winter Triticale

The crude protein content of the spring triticale grown by Porter in 2011-12 is comparable to a high-quality mixed alfalfa grass hay. The winter triticale is similar to a high-quality second-cut alfalfa.



Spring/Winter Triticale

The energy content of both triticale types grown by Porter in 2011-12 is higher than for a typical alfalfa grass hay. Energy density is roughly midway between a good-quality hay and oat grain.

“I thought they cleaned up the triticale as well as or better than the oats.”

Chris Bowman ONOWAY

How well would a relative newcomer like triticale stack up against a more familiar swath grazing crop like oats? As part of the Triticale Swath Grazing Demonstration Project, this is a question that producer Chris Bowman worked on.

“We did a side-by-side comparison of swath grazing oats versus spring triticale as far as feeding our beef cows,” says Bowman. “The cows seemed to go for the oats quite well, but I thought they cleaned up the triticale as well as or better than the oats. To me, the triticale also has a higher nutrient value, so I think it tends to hold them a little bit better than oats.”

Bowman’s experience addressed two other questions relating to swath grazing in general and triticale in particular. One, how well would cows that hadn’t previously swath grazed take to it? Bowman observed that even the cows that hadn’t swath grazed before figured it out pretty quickly. Two, what happens when the swaths are covered by snow?

“We’ve had quite a bit of snow this year, but the cattle seem to find it,” Bowman says. “They can get through a foot of snow quite easily. If it warms up a bit and you get a crust on the snow, that can be a problem, but of course that is true with any crop.”

Even after his part in the demonstration project is complete, Bowman expects to keep on swath grazing, and currently sees an oat/triticale mix as his favored option.

“We didn’t see a huge difference between oats and triticale,” says Bowman. “As far as swath grazing overall, there definitely seems to be some cost savings compared to the equipment, labor and manure management of conventional feeding.” ●





Greg Thompson

FORT ASSINIBOINE

**“We have
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In a related project conducted by the Gateway Research Organization in 2011, producer Greg Thompson seeded side-by-side strips of millet, spring triticale, winter triticale and a spring-winter triticale mixture.

The crops were swathed on September 24 and 147 head of cattle were sent out on December 15. On January 2, 2012, a further 15 head were added. The intention of this project was to see, given a more or less free choice, which cereals the cattle preferred to feed on.

In Thompson's observation, the cattle chose the winter triticale first, then the millet, then the winter-spring triticale mix and finally the spring triticale. He believes that since winter triticale is still vegetative at that stage of winter, its lower fiber content makes it most palatable to the cattle.

In fact, Thompson's experience with triticale swath grazing extends back five or six years before his involvement with this project.

“At one time we had some trouble with rough awns,” he says, “but that hasn't been a problem recently. I like to swath the triticale at milk stage, and our swaths are usually gone by the end of December, but we have swath grazed until February or even into March. At that point the cows go on a silage ration before calving.”

Thompson likes the fact that triticale doesn't need much encouragement to yield well. He doesn't put any fertilizer on, since the cows provide the nutrients. In his experience, triticale yields close to a tonne per acre more than barley and is yield-competitive with oats.

To Thompson, the cost advantage of swath grazing versus custom-bagged silage is compelling. By his estimate, a producer could waste 30% of the feed in the swath and it would still cost less than conventional feeding. ●



Making triticale swath grazing work

What are the most important findings of the Triticale Swath Grazing Demonstration Project? Project participants discuss their views.

The verdict on nutrition: more than adequate, but monitor waste

Beyond the observations contributed by producers, nutritional analysis of feed samples was essential to the Triticale Swath Grazing Demonstration Project.

Barry Yaremcio, Beef and Forage Specialist with Alberta Agriculture and Rural Development (ARD), reviewed the results of laboratory feed analysis of these samples. His judgment supports the view that today's triticale varieties offer significantly better performance than 1980s-vintage triticale.

"The biggest knock on triticale in the past has been that some older varieties were not as good as barley or oats," says Yaremcio. "Today, there are many triticale varieties that are as good as or better than barley, because they can have higher protein and energy. From the feed tests that we ran, the quality was more than adequate for cows in mid- to late-pregnancy."

Despite this supportive assessment, Yaremcio notes that cattle need to actually consume the feed to receive this nutritional benefit. Swath grazing triticale, far from being a set-it-and-forget-it winter feeding strategy, demands regular producer involvement to be successful.

"The question is, when spring comes along, what is the amount of waste, the feed that was not eaten during the winter?" asks Yaremcio. "A lot depends on how you manage it. If cattle can graze a large parcel of land, there could easily be 25% waste in the spring. If you have an electric fence and can move it around, you could get it 95% eaten and only have 5% waste. You have to be an active manager."

In the summer of 2013, further research will evaluate yield curves and the quality of triticale as it matures. Researchers are trying to determine when to cut the crop for optimal yield and adequate quality for cows that are in mid- or late-pregnancy and wintered on swath grazing.

High or stable yields, even in challenging weather

Many producers have successfully been winter swath grazing oats, barley and other crops for years. Do they really need triticale too?

Grant Lastiwka, ARD Beef Specialist for Forage and Grazing, believes that because of its weather tolerance, longer maturity, good quality, and high yields in many soil zones, triticale gives the producer more options and potentially lower risk.

"Triticale is a crop that can adjust to the weather and still give you a stable yield," says Lastiwka. "Triticale will do better with variable weather patterns than barley, because it seems to just sit there and wait until the weather gets better."

In Lastiwka's view, the ability of triticale to produce a high yield under good conditions, and a reasonable yield even under poor conditions, is a big part of its value for swath grazing.

"Yield relates directly to cost," he explains. "The cost per unit goes down when yield is high, and goes up when yield is lower. Optimizing yield allows you to make the cost per unit as low as possible. I think there's already enough risk in the beef business, so if triticale helps producers manage risk, that's a good thing."

Continued next page



Based on Porter's experience, the total cost per day per 1,000 lb. animal was 93 cents.



Grazing cost per day is compelling

According to calculations by Dale Kaliel, Senior Production Economist with Alberta Agriculture and Rural Development (ARD), conventional winter feeding costs \$2.50 per animal per day when feed, storage, fuel, equipment and manure management costs are included.

How does triticale swath grazing compare on a dollars-and-cents level? WCFA and ARD crunched the numbers as they related to Kevin Porter's operation (see the story on page 4). On this site, Porter was swath grazing 1,400-lb., third-trimester cows on spring and winter triticale. Thus, the 1,000 lb. Animal Unit Equivalency (AUE) adjustment was 1.4. Porter grazed 210 animals on the site for 90 days.

Not included in the calculation were costs for land and labour to set up fencing during feeding. The costs included in the calculation were for land prep, seed, transportation of seed, herbicides, seeding and swathing costs (including equipment and labour).

Based on Porter's experience, the total cost per day per 1,000 lb. animal was 93 cents.

Spring-winter mix stands out

Producers in the Triticale Swath Grazing Demonstration Project have successfully swath grazed spring triticale, winter triticale and a mixture of the two.

As Carla Amonson has reviewed the data, and watched cows feed on the co-operating producers' land, she points to the success of a spring-winter mix as one of the key lessons of the project.

For those accustomed to growing spring-planted or fall-planted crops, the notion of doing both at once might take some getting used to. With triticale, you plant both spring and fall varieties together in the spring and swath them in the fall. The following spring the winter triticale will regrow and can be grazed in late-spring and swathed or combined in the fall.

"From a grazing point of view, you look in the swaths in winter and the winter triticale is a lush green," says Amonson. "The cows just love it, and having the mix gives it a boost in terms of nutrition."

Key questions answered, others still open

While the producers and ARD specialists agree on the value of swath grazing triticale, disagreement persists on when is the best time to do the swathing.

Bill Chapman maintains the mid-dough stage of triticale is ideal for capturing maximum starch production. In his view, this timing will give the producer maximum energy and forage quality. This is important, since overwintering a cow requires an energy source so the producer doesn't need to supplement with other cereals. Producer Greg Thompson, on the other hand, swears by milk stage as the best time to swath.

Would earlier in the dough stage work even better, or would a time closer to maturity be preferable? Which timing delivers as much grain as possible, without being too fibrous? To Amonson, timing of swathing could be a worthy subject of future research.

"Another question we have is whether having the cows grazing on a field with both spring and winter triticale will cause compaction and disturbance that makes the winter triticale a less viable crop the following spring," she says.

From where Chapman's sitting, the Triticale Swath Grazing Demonstration Project has validated the performance of triticale in terms of cost, palatability and nutrition.

"What really impresses me is that we could get 200 grazing days per acre from a cereal crop," he says. "Don't forget that most beef producers are also grain farmers and this takes the pressure off their perennial acres. It's also very efficient in terms of time and cost per cow per day. You take a half-hour to move the fence around, you've fed your cows, you've checked on them and you're getting 200 grazing days per acre and feeding your cows for less than a buck a day. In terms of swath grazing, that's about as good as it gets." ●

Acknowledgements: West-Central Forage Association recognizes and thanks the organizations and people who made the Triticale Swath Grazing Demonstration Project possible: Agriculture and Agri-Food Canada, Agriculture and Food Council, Alberta Beef Producers, Chris Bowman, Bob and Larry Kidd, Kevin Porter, Greg Thompson, Bill Chapman, Grant Lastiwka and Barry Yaremicio.

For more information on the Triticale Swath Grazing Demonstration Project, visit
www.westcentralforage.com.



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