FOOTHILLS FORAGE AND GRAZING ASSOCIATION
*Innovation, education and regenerative agriculture*

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# GRASSROOTS NEWS & VIEWS
# DECEMBER 2020

## Vice-Chairman's Note - Rod Vergouwen

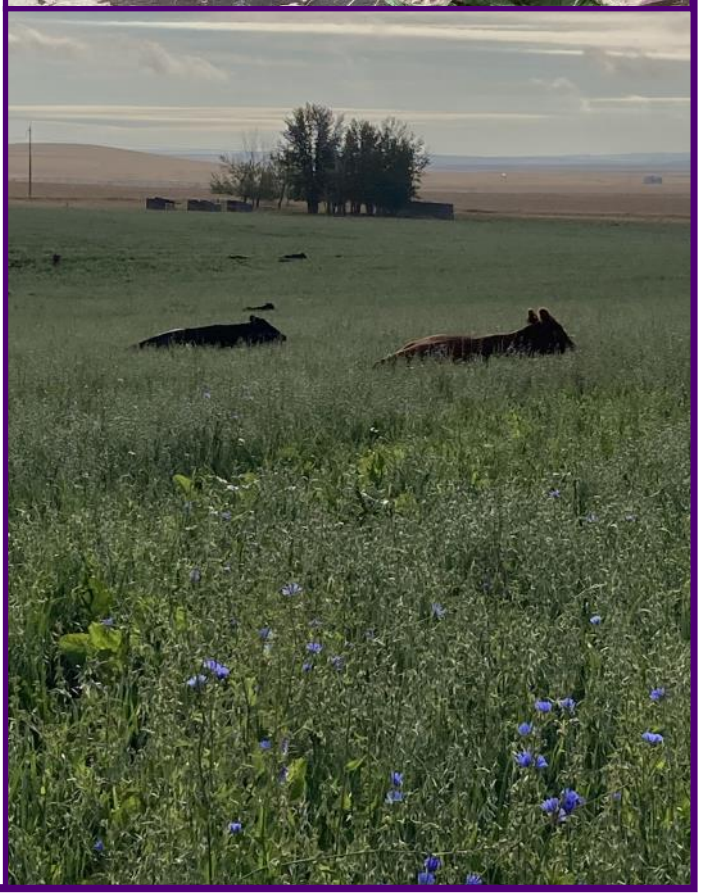
**Howdy folks;**

A year ago my opening comment was 'change and challenges have always been a part of agriculture' and COVID demonstrated that. The importance of agriculture was very evident this past spring when the store shelves went empty. We are fortunate to be in agriculture through these times. Whether it's a fork or a beer in your hand, remember to THANK A FARMER.

This year on the farm our multi-species seeding included more blues with Chicory and purples with Hairy Vetch (for Beth to steal for bouquets), along with Hercules turnips, (see photos to the right). We have an interesting project reclaiming a borrow pit that was used for road construction. Through this project, water infiltration and soil clump testing showed a complete loss of soil structure compared to managed grazing on adjacent fields. On our farm we focus on seeding a variety of annuals and biannuals and using high-density grazing to rebuild soil quality. There was lots of early moisture but limited growth in the first year so we have a ways to go.

Happy Holidays and Merry Christmas from the FFGA Board and staff,

**Rod Vergouwen**



### IN THIS ISSUE

# Whither the wind: How to decide on windbreaks


Photo: Jeannette Greaves

*Find out what your options are for protecting your herd from wind and snow this winter.*

If beef producers want to have healthy, productive herds, making sure they're protected from the wind is crucial, says Jenifer Heyden.

"We want the cattle to be able to maintain condition on cold, windy days," says the livestock and feed extension specialist with the Government of Saskatchewan.

While beef cattle are tough, and can handle fairly cold weather, it's the wind and wet of snow that can make them vulnerable.

"Without a windbreak, the cow's energy requirements go up, so you end up having to feed them more so your costs go up," Heyden says, adding that extreme wind and snow also have a detrimental effect on the cattle's health. If they lose a lot of condition, they're more susceptible to disease.

Fortunately, if farmers make them available, cattle naturally gravitate to windbreaks for shelter. Heyden says that most cattle ranchers in her province have some sort of windbreak system. In the north, where there are more trees, natural windbreaks are more common and in the south, where the prairies are flat and treeless, there are more man-made windbreaks.

**Natural versus man-made**

While natural windbreaks — mainly trees and shrubs — are more cost competitive, especially if they already exist, Heyden's a big fan of the man-made portable ones because the producer has more control over where the herd winters.

"You can move them around to wherever you need them," she says. "If you are on pasture, you can get the manure and urine from the cattle into a larger area, providing better soil nutrient coverage."

Alternatively, producers can keep the windbreaks in one spot and feed their cattle in areas where there is a soil nutrient deficit. Parcels of land that might never be used for anything else could also be used with windbreaks.

Natural windbreaks also afford less control over porosity, she says.

Optimal porosity — or air flow — for windbreaks is 25 to 33 per cent. This provides the maximum amount of protection from the wind without having too much turbulence on the downwind side.

Luckily, she says making that happen is easy. Buying or making a structure with six-inch wide planks that are two inches apart will achieve 25 per cent porosity and putting them three inches apart gives 33 per cent. The planks can be placed either horizontally or vertically.

Another downside to natural windbreaks is that they obviously can't be moved around and are often found near water bodies, which presents the potential for manure runoff and water contamination.

**Construction**

Man-made windbreaks should be 10-feet (three metres) high and the length should allow for one foot of fence for each cow. Research has shown that a 10-foot high fence will provide protection for 80 to 100 feet (24 to 30 metres) behind it.

The number of cows in a herd determines the number of windbreaks needed, and if they're mobile, they can't be too big or cumbersome to move. A one-foot space at the bottom of the windbreak helps ensure snow and ice don't pile up and make it impossible to move.

Permanent man-made windbreaks would be better suited to cow-calf operators who keep their cattle in one or two pastures all winter, and the mobile types are better for rotational

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***On the Cover: Participants at the Riparian & Range Pasture Walk this summer. Photo: Sonja Bloom***

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and cropland grazing.

Heyden says that, for the permanent installations, producers should consider where the cows are calving, where they're feeding and what sacrifices they're willing to make in soil compaction and plant biodiversity. She also warns that if snow builds up around these structures in winter, they limit cattle movement and nutrients are concentrated in the areas around them.

**Movement and placement**

Mobile windbreaks have to be small enough to be easily towed or carried in a front-end loader.

Most are made out of wood and can be either vertical or angled — with angled windbreaks, the space that's nearest the ground can provide additional shelter for calves.

They need to be placed perpendicular to the prevailing wind, which normally comes from a consistent direction, although during a snowstorm the direction can change.

Heyden says that windbreaks need to be placed far enough away from water bodies to prevent runoff.

"In the end, each producer must figure out what will work best for his or her operation," she says. "Each has different goals and a different set of circumstances — the decision about what type of windbreak is best should be based on animal welfare and economics.

"If well-built, man-made windbreaks should last many years." More information on windbreaks is available through Saskatchewan Agriculture and Ontario Agriculture, Food and Rural Affairs.

*Author: Lois Harris. Lois is an experienced Ontario freelance writer and editor working in the agriculture and food industry. Original article can be found at [https://www.canadiancattlemen.ca/features/whither-the-wind-how-to-decide-on-windbreaks/](https://www.canadiancattlemen.ca/features/whither-the-wind-how-to-decide-on-windbreaks/)*



# Forage intercropping trials show promise in Western Canada

*Research is underway to fully understand the best practices for incorporating forage mixtures in this cropping method*

The practice of intercropping is receiving more attention on the Prairies, and research centres are exploring the possibilities for forage options.

The potential benefits are promising, researchers say, but more work is needed to provide producers with accurate information on how best to apply this method.

"I think it's really interesting that there's some combinations of crops that seem to have synergistic relationships when being grown together," says Lana Shaw, manager of the South East Research Farm (SERF) at Redvers, Sask.

Advantages to intercropping, which is the practice of seeding more than one crop together, can include reducing the risk of disease and pests, improved resilience and increased total yield and crop value.

"If they're able to reduce the amount of pesticides and fertilizers used on these intercrops, then even if they get very much the same yields or even a little less yield, it may still be more profitable than the crops that are grown by themselves," says Shaw.

Ongoing studies by Manitoba Beef and Forage Initiatives (MBFI) at Brandon, Man., are also exploring how to get the most out of forage intercropping.

"We're interested in intercropping really to put some data behind some of the regenerative agriculture practices," says Mary-Jane Orr, MBFI's general manager. These practices include minimizing tillage, increasing plant diversity, incorporating livestock grazing and having living plants as cover on the ground as long as possible, both between growing seasons and in between the rows.

The benefits of growing a cover crop between rows of corn is something Orr and her team are currently studying. "Will that cover crop grow enough to provide an additional forage during corn grazing?" she says. "Is there a role for that cover crop to provide some additional fertility to the corn while it's growing when we have legumes in the mix?"

In 2019, MBFI ran a trial with corn at 30-inch row spacing and a forage intercrop mixture of yellow sweet clover, Italian ryegrass, hairy vetch and forage rape. However, an early snowstorm in October flattened the intercrop mixture when it was more vulnerable.

"We did see a trend and an increase in the crude protein of the corn forage, so that was an interesting trend that maybe we're improving the forage quality of the corn, even though the livestock didn't have access under the snow to the actual intercrop," says Orr.

This year, they followed up with a similar trial, using a forage mixture of winter triticale, two types of Italian ryegrass, hairy vetch, Berseem clover, yellow sweet clover, plantain, chicory and forage rape. In addition to the test and control plots having 30-inch row spacing, they seeded a plot with 60-inch row spacing to increase the crop density within each row, allowing for more light to reach the plants.

"There's a very visually noticeable difference in the productivity of that 60 -inch row spacing just because it has so much more access to light to grow," she says. "In the 30-inch row spacing we're seeing a good establishment of the intercrop, but they're just not growing as vigorously as in the 60-inch row spacing."

*Manitoba Beef Forage Initiative's corn and forage intercropping trials. The corn is on 30-inch row spacing on the left and 60-inch on the right.photo: Mary-Jane Orr*

Yield and forage quality testing had yet to take place at the time of writing, and MBFI will also observe whether the intercrop withstands the fall weather and is accessible for winter grazing.

Orr would also like to examine the hybrid variety differences in corn. "It would be interesting to see if different varieties are more compatible with intercropping than others when it comes to basically sharing the light and the water and the nutrients in the soil," she says.

"We aren't currently doing any silage, but I think it would be also interesting for producers to see if you choose to take your corn off as grain or silage, how well those intercrops grow back for an aftermath grazing as opposed to a standing corn grazing."

**Emerging trends in complex mixes, annual forages**

At SERF, Shaw oversees trials on both grain and forage intercropping to determine the most beneficial crop combinations. Currently, SERF is running a trial on soybeans and flowery silage corn, with both crops grown on their own as controls. Results on protein and relative feed value are expected in early 2021.

"We picked a type of soybean that's quite tall and late with the idea that it would be (intended) for forage. So by intercropping, we may be able to increase the protein level in that silage product," says Shaw. As this was their first attempt at this particular combination and conditions were dry this year, she would like to run this trial again.

Other ongoing trials at SERF include intercropping barley with fall rye, in hopes of using the latter for grazing later in the year, and mixtures of forage brassica with peas and oats.

"Some of the research is starting to dabble in the more complex mixes, and I think that's a trend among demand from farmers and with regen-

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erative agriculture and soil health becoming a notable trend," Shaw says. "There's a push towards more diversity in forage mixes, and also a trend toward using annual forages instead of just relying on perennial forages."

By including annual forages in a rotation on grain crops, Shaw explains, producers can disrupt disease and pest cycles, as well as weed production. "There's opportunities for cattle farmers to partner with grain farmers… on something where the grain farmers get a cash benefit from growing forage but don't actually need to make it into silage or make it into a bale to sell if they don't want forage."

Shaw is also interested in running variety trials on forage peas, as the different varieties available haven't been compared in this manner the way other crops are compared in small plot trials.

"I would like to try seeding some forages into marginal saline land on grain cropland and do some trials on how to most effectively establish those and what kind of mixes are suitable or providing a lot of benefits."

**Know your objectives and have a backup plan**

For producers interested in forage intercropping, Orr recommends starting small and understanding your goals for using this method. This can include considering the nutritional needs of your herd, how you want to use this feed and if you need to rest or extend perennial pastures.

It's also important to measure your own results to help understand what works best for your fields. "One of the messages that came out of some of the work done by Practical Farmers of Iowa, which is another kind of farm research group, is that depending on the year and the variety, the results can really shift and change," Orr explains.

"Until we get a consistent dataset with reproducible results, it's really hard to say, 'Yes, this one thing will work all the time.' And so I think just taking the time to take yield measurements and track some information on your own farm is really valuable to help you make decisions in that planning as to how to diversify your forage options."

Having a contingency plan for your feed supply in the event of unfavourable conditions is also something to consider. "At MBFI we've also experienced some wrecks when we haven't had good moisture, when we haven't had good conditions for getting establishment or if we have untimely weather events," she says. "When we had that early fall snowstorm, it can really kind of wipe out your best intentions."

*Author: Piper Whelan, Canadian Cattlemen. Original article can be found at: [https://www.canadiancattlemen.ca/features/forage-intercropping-trials-show-promise-in-western-canada/](https://www.canadiancattlemen.ca/features/forage-intercropping-trials-show-promise-in-western-canada/)*

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# ‘Messy’ fields may help bottom line


Photo: Sonja Bloom

**A University of Calgary scientist says fields that contain wetlands or bush are more productive than many farmers think**

Paul Galpern would like to see a lot more messy fields.

The University of Calgary landscape ecologist and data scientist said fields that contain wetlands or bush are more productive than many farmers think. His research has shown this.

“Wooded areas, wetlands, pasture area, shelterbelts, those are the wild places, what I call the messy spots, and the spots where nature’s contribution to people can actually happen,” he said during a virtual conference organized by the Johnson Shoyama Graduate School of Public Policy at the University of Saskatchewan and University of Regina.

Galpern said the concept is probably better known as ecosystem services. It’s about the potential for these places to contribute to society. How to encourage farmers to keep the messy spots, however, is an ongoing discussion.

Work at his laboratory has determined that the presence of pollinators and beneficial insects contributes to yields, which in turn contribute to profit. Treed areas and grassy spots both store carbon. Wetlands provide habitat and store water to recharge aquifers and improve water quality.

“Growers want to remove things like wetlands, forest patches, fence rows and pasture land because they get in the way,” Galpern said. “They like straight lines.”

But he said there is profit to be made from leaving them, or from creating new messy spots on marginal land that would no longer require input costs to grow a crop.

Larry Durand, agrologist at Field Good Economics in Humboldt, Sask., said a case study with a client found exactly those results.

It involved a 627-acre field that produced 60 bushels per acre of spring wheat in most areas, but zero in a significant saline patch and 25 bu. per acre adjacent to that.

Using the provincial government’s crop planning guide for the black soil zone at that time, average expected yield was 65 bu. per acre while costs were $238.93 per acre. At a price of $6.42 per bu., the gross revenue varied from $415.37 per acre on the best producing land, down to $160.50 on the 25 bu.-per-acre patch, to zero where no crop grew at all.

That resulted in revenue of $176.44, a loss of $78.43, and a loss of $238.93 in the three respective situations.

The case study involved removing the area that isn’t productive and seeding it to a salt-tolerant grass.

Soil, water and topography (SWAT) maps indicated the worst area and 50 acres were removed to make the field 577 acres. Those 50 acres were planted to forage.

Durand said the yield rises from 65 to 69 bu. per acre because the worst areas are gone. However, there are fewer acres so the gross revenue drops by about $5,000 over the field.

“We actually have $5,000 less wheat to market at the end of the year,” he said. “However, when we go to the input cost part of the equation we’re going from $150,000 to $138,000, so we’re actually saving $11,000 worth of costs here for a net benefit of $6,600 on this one section.”

That is about a $10.50 per acre benefit.

Durand ran the numbers for other crops and found similar results.

For canola, the benefit would be about $10,500 or $16.84 per acre, while for barley it would be nearly $7,300 or $11.61 per acre. Yellow peas showed an overall net benefit of just about $9,000 or $14.33 per acre.

Durand said this shows that taking out the 50 acres and seeding it to grass produces environmental benefits such as the ones Galpern listed.

He said perennial cover near field entrances, for example, can be a good management tool against clubroot.

“Often times those saline areas are where weeds like kochia and foxtail barley are a problem so you can take care of those weeds by having grass grown there,” Durand added. “More productive vegetation can draw down the water table and draw down those salts and improve that land.”

Galpern said his research across Alberta of yield data from six different years found fields with “messy stuff” are slightly more productive.

“They had higher yields per acre,” he said. “Canola fields, wheat fields, barley fields, pea and oat fields, they all have this positive effect of having uncultivated stuff in their fields.”

He said farmers care about sustainability but do have to make money.

“It’s a social licence to operate. If you can show your operation is sustainable and perhaps these areas slightly improve your profit, suddenly we’ve got an economic case for improving the ecosystems services for this land,” he said.

*Author: Karen Briere, Western Producer. Original article can be found at [https://www.producer.com/news/messy-fields-may-help-bottom-line/](https://www.producer.com/news/messy-fields-may-help-bottom-line/)*

# Bulls need special attention during winter


Photo: Sonja Bloom

**Lice protection, deworming , mineral supplements and access to clean, unfrozen water are ways to keep them in top shape**

Bulls need as much winter care as cows do to ensure they are in top shape for the next breeding season and management depends on available facilities for keeping them separate from the cows.

"Don't forget to vaccinate them and provide the health care they need," said Dr. John Kastelic, a professor in cattle reproductive health at the University of Calgary.

"It's a shame to lose a bull just because we didn't vaccinate him for blackleg or some other common disease. We recommend annual vaccination with multivalent clostridial vaccines. These are inexpensive and generally have high efficacy."

Lice can be an issue in winter, especially if bulls were deloused too early in the fall. If excessive rubbing is noticed, they should be treated again so they don't lose their insulating winter hair.

Deworming may also be helpful. If bulls are confined it's important to feed in a bunk rather than on the ground, to break the fecal-oral transmission of disease. If bulls are out in a pasture and fed hay or pellets, feed on clean ground, Kastelic said.

Clean, unfrozen water is also important, with minimal fecal contamination.

"It's best to have a water source like a stock trough rather than having them drink from a dugout or stream," he said.

Bulls can get by on snow but they do better with adequate water. Snow may become crusted and hard to consume and if they don't drink enough, they won't eat enough either.

Bulls should have access to mineralized salt, since mineral deficiencies can lead to health issues. Check with a veterinarian to determine the type of supplements needed to balance the diet and make up for deficiencies in the feed.

A clean, healthy environment is important.

"Good management simply means doing a lot of things well — paying attention to all the small but important details such as vaccinations, parasite control, etc., — just basic good husbandry," Kastelic said.

Feed should be adequate and free of mould.

"Sometimes we have issues with ergot on cereal grains. This can cause vasoconstriction and diminished circulation to the extremities. Cattle can lose ear tips and suffer from gangrene. Other toxins like mould can be harmful and some have estrogen-like properties which can interfere with semen quality."

Adequate bedding in cold weather is key to limit risk of scrotal frostbite.

"A little frostbite won't be detrimental, if it's just on the bottom of the scrotum. This will generally heal. The bull might have temporary reduction in sperm quality, but unless you are fall calving and breeding cows during winter, it usually won't be a problem," Kastelic said.

If frostbite covers a larger scrotal area, it may create problems.

"If you are checking a bull and push the testes up and the scrotum puckers up, this indicates adhesions and will have a relatively poor prognosis for recovery."

Travis Olson of Ole Farms in Athabasca, Alta., has had a lot of experience with bulls. He runs 1,100 registered Angus cows and 300 commercial cows.

"When taking care of bulls, especially older bulls, they need lots of room. I keep them in large pastures, with good bedding in several areas because some bulls don't get along. If I have 60 mature bulls in one pasture I put bedding in at least two or three locations," he said.

"An older bull might be dominant during breeding season but maybe doesn't have the energy or desire in winter to put up with an aggressive three-year-old that's trying to come up through the pecking order. The older bull might be able to beat the younger bull, but he doesn't want to get into a scrap."

Multiple bedding areas ensure animals can separate themselves if desired.

"You need bedding and a good windbreak in at least two locations so that if an older bull is being pestered, he has somewhere else to go," said Olson.

*Author: Heather Smith Thomas, Western Producer. Original article can be found at [https://www.producer.com/livestock/bulls-need-special-attention-during-winter/?module=under-carousel&pgtype=section&i=](https://www.producer.com/livestock/bulls-need-special-attention-during-winter/?module=under-carousel&pgtype=section&i=)*

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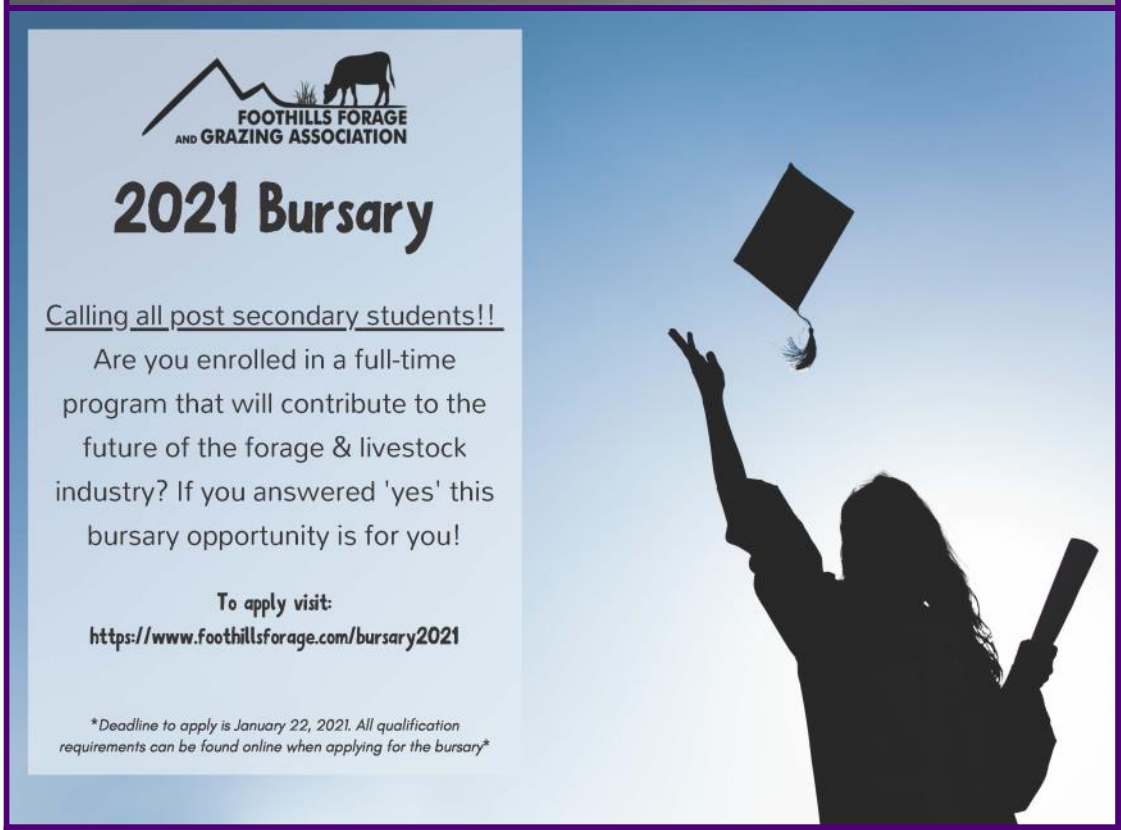


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**Mission:** Assisting producers in profitably improving their forages and regenerating their soils through innovation and education.

**Vision:** We envision a global community that respects and values profitable forage production and healthy soils as our legacy for future generations.

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