



Innovation, education and regenerative agriculture

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MAY 2019

Coordinators Note - Sonja Bloom

Howdy Folks;

It's hard to believe that I have been with FFGA for a year on May 7th. And what a year it has been. I began my journey with FFGA by working on this very publication and although it seemed like a daunting task that first week, I have discovered that producing this monthly newsletter has become one of my favorite tasks as Environment & Communications Coordinator. To be fair, all of my tasks are my favorite.

So how was my first year? Well, to answer that in full I would need an entire newsletter so I thought I would give you a quick summary.

I began working with FFGA just as Extension Season was set to begin. I won't lie, I am completely new to the livestock production side of Agriculture so I had quite a steep learning curve. Luckily, learning about this industry from the producers who live and breathe the ranch life is the best way to learn and our Extension Events gave me the perfect stage to gain more knowledge. This past year I was able to take in 18 events and meet over 1100 eager & passionate producers & experts who taught me everything from Grazing Practices & Principles to Winter Feeding Strategies & overcoming weather challenges. If you missed any of these events be sure to keep your eyes on our website, Facebook, Twitter and newsletter for future events.

This past October I completed my training and became an Environmental Farm Plan technician. The Environmental Farm Plan (EFP) is a program that I have always supported, I am extremely excited to be a technician and help producers complete their individual EFP. I partnered with Vulcan County, MD Willow Creek, Cardston County, MD Pincher Creek and Rocky View County to offer 6 EFP workshops with 87 producers in

attendance. Combine that with the 51 producers I have worked with one-on-one and I would say that FFGA's EFP Program is going strong. If you are ready to start your EFP or need help finding funding opportunities, (like Canadian Agricultural Partnership, Farm Energy Agri-Processing Program and On Farm Solar Voltaics Program) give me a call in the office.

This year I am excited to continue producing our *Grassroots News & Views* newsletter and will be working towards a new layout for the publication. If you have any advice or there is something you want to see let me know at enviro@foothillsforage.com. Be sure to follow us on Facebook & Twitter as we share our events, projects and everything forage & grazing on both platforms.

I hope to see you out at some of our great events like; Soil Health with Dr. Jill Clapperton (page 6), Electric Fence & Grazing 101 field days, Cattle Trails at the Calgary Stampede and the Level 2 Grazing School with Jim Gerrish. Don't forget about the <u>Canadian Beef Industry Conference</u> August 13-15 and the <u>Western Canada Conference on Soil Health and Grazing December 10-12</u>.

Sonja Bloom Environmental & Communications Coordinator

Sonja and pup 'Echo' enjoying summit snuggles on Prairie Mountain



IN THIS ISSUE

Why Didn't My Cover Crops Work? 2 & 6

Spring Planting Summer Annuals for Fall & 4 & 5

Winter Pasture 7 & 8

Why Didn't My Cover Crop Work?



Kevin Elmy lists nine potential causes of things that could go wrong when you try growing cover crops on your farm.

Ever try something and it didn't work the first time? What's the next step? Try again doing the same thing, modify the approach or give up? Ideally, getting a mentor or someone with experience to find genius. out what went wrong will help create a successful situation. Or maybe it just doesn't work.

Cover cropping is no different. Adding diversity to a rotation can be intimidating and confusing. There are a lot of variable to consider. Most of them will be determined by climate, finances, goals and seed availability to name a few. So, what are the common reasons for cover crop failures?

1. Lack of goals

If you're going on a road trip, you need to know where you're going. Same thing for cover crops. Setting goals will help you determine what species to use. Using the wrong species will give results that do not match your goals. Hard pan remediation, grazing, hay, nitrogen fixation, increasing diversity, weed smothering, fall growth

and reducing erosion are some examples of goals that can be met with cover crops.

2. Wrong timing

Species grow better when seeded at the time best for them. Seeding berseem clover or radish early into a cash crop will create harvest issues, as the berseem clover or radish will grow up into the cash crop. If you're looking for nitrogen fixation, seeding legumes after July 15 will produce very little nitrogen. On the flip side, radish should be seeded later than August 1 for lowest level of management.

3. Wrong weather events

Farming success is dictated by the weather. In 2018, we broadcasted subterranean clover into our spring triticale. Then it did not rain until September. The clover germinated in June then died. When the seedlings. we seeded radish using a plane in 2015, we got a rain after and got a wonderful catch. Rains at the right time, if fall seeding — getting proper hardening off, and missing drought makes you look like a

- 4. Wrong species selection This is where many failures occur. Using the correct species makes many other mistakes disappear. If relay cropping, having a species that will either tolerate the cash crop competition, or is able to go dormant and come alive after the cash crop is removed is important. Grazing is another example. For grazing, species that will regrow and tolerate hoof traffic are important.
- 5. Identifying wrong causes Like other troubleshooting issues, knowing the difference between the symptom versus the cause of the problem can create a different type of prescription. Is the low yield due to low organic matter, poor structure, salinity or hard pan? The causes can be related — salinity causes low infiltration, poor structure, hard pan and low organic matter.

6. Not enough patience Sometimes the damage is so great it can't be reversed by one treatment. Hard pan was created over years of abuse. Getting deep roots to penetrate the layer may take a couple of years. The same goes for salinity. Using different levels of salinity tolerance will act an indicator. As the soil is

remediated, the less saline tolerant species start to show up.

7. Wrong seeding method Matching seeding methods with seed is important. Broadcasting fababean and corn is going to give a low success rate. Seeding chicory the same depth as fababean is going to make the chicory fail. Chicory is a very small seed, so seeding deep is going to cause a high mortality in

8. A pest bridge

A pest bridge occurs when two crops are grown either together or in close succession. This increases hosts for shared insects, diseases and other ailments. An example is growing radish before canola. Not a good idea. These two crops share diseases, flea beetles eat both, and if all the radish do not germinate the year before canola, they can end up producing seed and being harvested with the canola. Fall rye before wheat is another example of a pest bridge.

9. Too much competition When intercropping and cover cropping, space needs to be made for the extra plants. A quick rule of thumb is to aim for 120 per cent of the plants in total as compared to a monoculture. When the cash crop is decreased, more light gets through allowing the understory crops to establish.

These are a few common issues that can cause a wreck. Even experienced producers of cover crops and intercrops will have occasional hiccups. Having your homework done, knowing what you are

(Continued on page 6)

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SOIL HEALTH FIELD DAYS

FEATURING DR JILL CLAPPERTON. PHD



Jill Clapperton is an internationally recognized lecturer on how to create and manage the long-term health and productivity of soils. Jill was the Rhizosphere Ecologist at Agriculture and Agri-Food Canada Lethbridge Research Centre studying the interaction between soils, plants and soil organisms.

TOPICS

- · Principles of soil health
- · Soil, crop & pasture management to optimize soil health
- · The deep dive into mixed species cropping and pasture stitching
 - Demonstrating healthy soil characteristics & measuring results (rainfall simulator) · Hands-on field activity

DETAILS

Tuesday June 11th at the Nanton Hall -**Featuring Rocking P Ranch** - and -

Wednesday June 12th at the Rugby Hall -**Featuring Whiskey Ridge Cattle Co**

> 8:45am to 4:30pm **Lunch included** FFGA Member - \$50.00 Non-Member - \$60.00

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Spring Planting Summer Annuals for Fall & Winter Pasture



Extending the grazing season can help reduce production costs for cattle. Good permanent pastures are best, but there are times it's helpful to be able to utilize annual crops to fill in some gaps or get the soil in better health before replanting a pasture or putting in another crop.

Graeme Finn (Southern Cross Livestock, near Crossfield Alberta) says nothing can replace a really good perennial pasture. If a pasture is old and tired, however, or a hayfield needs to be reseeded, using annuals for a year or so can help make that a better transition and provide good forage for cattle in the meantime.

"This is a multi-faceted thing and not one 'cure' fits all. An annual crop won't replace a good perennial pasture containing legumes as well as grasses, but if you are breaking up a field or if you raise both cattle and crops, an annual can be perfect for crop rotation and getting livestock back into the system," he says.

"A good perennial stand is the most cost-effective forage, and a long-term investment, but annuals can be a good interim plan. What and when to plant an annual crop will depend on your reasons and goals," says Finn.

"Here on our place we mainly plant annuals for winter swath grazing, but if you are a crop farmer, seeding an annual in the crop rotation is a win-win for both the soil and the cattle—for grazing management and integrating livestock into that crop rotation. We don't have cropland; we just have perennial pastures and swath grazing, but some of the people I work for are big into cropping and livestock and want to improve their soil health as well," he explains.

"We can't just keep on cropping the land and expect it to produce year after year; we need to rejuvenate it. This prairie originally developed with bison grazing it by the millions. They came into an area and manured everywhere, crushing the prairie grass and then not coming back for 4 or 5 years." The forage had plenty of

time to recover, with the added benefit of "natural" fertilizer from the bison.

"Now we've taken that animal impact away and have been just farming and farming; we've taken away that integral part of how this prairie soil was developed. We just keep putting more chemsoil to do the same thing, but it can't," Finn says.

"It's crucial to start integrating cattle back into the system again,

no matter how you do it—whether with perennial forages or annuals. Some people do this with annual crops in a two-year rotation, if they are not going into perennials. If it's just a crop rotation with canola/ barley, and cattle, they can do one or two years with cattle, but a person can use multiple species of forage with a cover crop to produce really high quality feed at the same time as adding biomass into the soil. This is really working well for many people, and some are using it with silage—underseeding a cover crop on silage land, especially with irrigation when irrigation land is only being used for 90 days during the growing season

If people are cropping and the soil stays bare after the crop is taken off, he advises seeding a relay cover crop of forage species with the silage. "Then when they take the silage off they can turn the irrigation on again and the relay cover crop starts growing again and can be used as stockpiled forage. This is a huge advantage, to get more production from the expensive irrigation land. This is a great use for annuals; people still get the tonnage and quality they need, and it's generally better than straight barley, and they have also have stockpiled forage to graze in the fall," explains Finn.

"Some operations here are grazing barley silage land that was harvested in August, with the Italian ryegrass and brassicas coming up again with irrigation. Their cattle are out there in the late fall and early winter grazing, instead of having those cattle confined for feeding or having silage trucks taking feed to them all the time," he says.

The soil health is improved, and the cattle are out there grazing and healthier not being confined in small areas. "Producers who are doing this are having a great time; it makes the winters so much easier. They might have to feed the cattle a little later, like in February or March, but if they can have more days grazing in the fall and early winter it is only

costing pennies per day per cow," says Finn.

"That's one scenario. Another is to run livestock through crop land, using a cocktail cover crop—seeding it in the spring as soon as the frost ceases. Most of the cover crop blends are designed for cool seasons but some include sorghum or corn or sunflower. Generally you can get these cover ical fertilizers on it and expect the crops seeded in early May, just like a silage crop, with the soil moisture there to start with," he says.

> Then if weather permits (which is always an uncertainty, with some years being dry) these crops do well and come back multiple times after being grazed. "If you graze this forage down to about 8 to 12 inches or so and let it come back, you can usually graze it multiple times through the season. If you take it clear down to the ground in the summer and lose that solar panel, it takes much longer for the plants to recover and you can't graze it again very soon," he says.

> "When planting cover crops, you should be planting temporary posts at the same time, to give you more rotational grazing options. Cover crops in that scenario work very well in crop rotation and you can get many more grazing days. With ours we can get 175 grazing days per acre on our winter swath grazing, and some folks are getting similar grazing days during summer as well. They can keep grazing past when the perennial grasses are finished growing in the fall," says Finn.

> The bulbs of the brassicas, and the stems and leaves of the Italian ryegrasses are still green through the fall and cattle can go ahead and chew them into the ground. The cattle have a good diet with adequate protein and energy. "We've done some feed tests here on our place. We had 5 inches of rain this year on 260 acres and my swaths were still 11 to 12% protein, with 64 TDN, but some of the guys had up to 23% protein with 72 TDN. Normally my swaths run about 16% protein and about 69 TDN," he says.

> "I also keep my calves on the cows longer in the winter. We calve in May and keep the calves on their mothers until January or February while they are swath grazing." This feed is good enough for the calves and the lactating cows.

> "We've been doing multi species crops for about 9 years now and the cows tend to get too fat! We strip graze and on good years if they don't use up all the swaths we bale what's left, in the spring, and set those bales aside. Having the swath grazing into the winter is a win-win situation and the

> > (Continued on page 5)

(Continued from page 4)

cost for us runs about 94 cents per cow on a normal year, this year is \$1.22 all in. Everybody's wintering costs will to be different. Our family rents the land and I know my input costs because of the rent, and the land is all custom-seeded and custom-swathed. I know my fertilizer and labor costs, and the yardage cost is simply power for the electric fencing and the water. We only use this land for winter swath grazing, but some guys in the summer use their land for annual crops. This really works for us, with cheaper feeding costs in winter for the cattle," says Finn.

Every producer has a different situation and must figure out what works best for their own situation. "If you have water, and cropland, and electric fencing, you can extend your grazing periods and improve soil health all at the same time," he says.

Shelter."

The and urin bedding has to be annuals.

In terms of an annual crop seed mix, not everything suits every area. "In southern Alberta you can use more warm season grasses like sorghum, sudan grasses and millets, while in northern Alberta or foothills areas with a cooler climate you'd use some clovers, brassicas and Italian ryegrasses. The crop farmers don't want any weed issues, so they need to watch what they use. If they mix a blend of annual ryegrass and collards or something similar that will bolt in about 45 to 60 days, they'll have a weed issue. They need to choose long-period bolting crops that are not going to set seed in a crop rotation. When using oats, wheat, barley or triticale, make sure it's a later-maturing variety."

In a winter swath-grazing program, however, you want it to all mature at the same time. "We use Winfred and goliath forage rape, hunter forage turnip, new york turnip and baler forage oats and 4010 forage peas here because it's a later-maturing oats. The later it matures, the more potential growing time the brassicas have (and the forage peas and the clovers), in that mix. You try to match the mix to what you need in your own program," he says.

"For fall grazing or winter grazing, annual grazing will always beat the price of corn, just in the cost of seed. My winter swath grazing with brassicas in the mix it runs about \$35 per acre in seed, plus any fertilizer costs if needed. I do a soil test every spring to see what I need. With corn, however, the seed may cost \$90 to \$120 per acre. Then if the cattle are eating only the cobs, you are left with all that trash residue in the spring that you have to do something with," says Finn.

He is currently trying to reduce the need for machinery, since that's where a lot of cost is incurred—in bale shredders, silage wagons, silage pits, etc. and the high price of diesel fuel. "Heather and I work with her mum and dad and in winter we combine our cattle herds. They use to do full-on silage, bedding and bedding packs, protein tubs, etc. Now we don't own a bale shredder or do silage; we only have two tractors left on the place. We run 260 head of cattle just with a cordless drill (to help with putting in the portable electric fence posts), electric fencing and a small pickup for doing morning chores. In just a few minutes I can move all the cattle. They are out grazing, and we don't have bedding packs anymore—just some windbreak fences so they can get behind them for shelter."

The cattle are out spreading manure and urine all over the land instead of on a bedding pack in confinement where it all has to be hauled out. "The swath grazed annuals work really well for a winter program. For summer program producers, if they have an annual cropping system, they can use electric fences to graze. They can move it every 3 to 7 days, and that's better than letting the cattle have a whole quarter section. If you can split it 4 or 5 ways, you can do rotational grazing. All it takes is poly fence and a good energizer, and trained cattle—and it doesn't take much to train cattle," says Finn.

"We've really cut down on our machinery costs because now we have a fourlegged manure spreader and harvester, all in one. Another thing we do is cull cattle and select for ones that do well in this type of program. At first we were culling hard and getting rid of the bottom-enders and keeping replacement heifers from the topdoing cows in the herd. This really increased the ability of our herd to do well in this type of program. The replacement heifers don't go into corrals when weaned; they go across a couple of swath-grazing paddocks that are 4 miles apart. They go from where their mothers are, across the farm to where their aunts are, still swathgrazing. They learned from their mothers how to swath graze and then from their aunts in the other paddocks."

Using cover crops isn't a miracle solution; you have to match the cattle, to make it work. "You need a grazing animal and not a high-maintenance animal. Cover crops by themselves are not the total answer; they are just one part of wholemanagement. Once it all starts clicking together, producers can really benefit. It's a slim enough margin in this industry because we are price-takers rather than price-setters. If we can control our bottom end (input costs), this is where we start making money—by pushing our bottom end down," says Finn.

The people who graze during summer

can benefit by intensive grazing, keeping cattle in tight groups when moving fences or doing rotation. "What they gain through the manure/urine from the cattle and the rotting roots in the fall and winter will also reduce input costs because they are using cattle to do the fertilizing. It doesn't happen overnight; some soils are so badly deteriorated that it might take two years or longer of cattle grazing, to build back the soil. Or, they can put in a perennial grass for 5 to 8 years—and utilize intensive grazing—and then bring that land back into a crop rotation. They could plant just sainfoin and alfalfa and graze rotationally, and those two nitrogen-fixing plants are feeding the cattle with a non-bloating mix and fertilizing the soil with both the cattle and the legumes," he says. You can always fine-tune your seeding to the needs of a particular piece of land.

"I tell people that it's not what you know, but who you know. You need to go visit guys who are already doing what you want to achieve, before you start on this road. They can give you good advice, and you can see what their mistakes are, and save you some of the headache of making some of those mistakes," says Finn.

He also recommends joining your local forage association. "I am a member of the local Foothills Forage and Grazing Association. There are many good operators in this group and we have field days looking at their winter grazing programs or summer grazing perennials, watering systems, etc. We share good ideas," says Finn.

"That's the great thing about the beef industry; there are so many good operators out there, and you can get to know them through your local forage or grazing association. Using annuals for summer grazing in crop land is a great rotational program, but if someone wants to summer graze and isn't in a cropping situation you can't beat a good high-legume perennial pasture stand," he says.

"Cropping guys raising canola, barley, wheat or whatever do need to bring cattle in every couple years or so, and get the organic matter back into the soil. We are really managing two sets of livestock—one above the soil and one below (worms and biology in the soil). We can feed the soil biology through the rotting roots of the brassicas, ryegrasses, sorghums or whatever producers are using as annuals, plus the manure and urine of the cattle. This just keeps building the soil. And for every one percent organic matter we add to the soil, we gain 45,000 liters of water-holding capacity. This is a good droughtmanagement strategy."

Author: Heather Smith Thomas

(Continued from page 2)

trying to manage, what species, when to seed them, how to manage them, and watching weather patterns will allow execution of your plan.

Getting started

If setting goals is an issue and soil health is an overlying goal, start with the five key points of soil health: reduce tillage, reduce synthetic inputs, keep living roots in the soil, keep the soil covered, and include livestock on the land. Producers from Mississippi to LaCrete, Alta., have told me they cannot use cover crops

for numerous reasons. But there are a significant number of growers around LaCrete growing cover crops successfully.

Every farm will be different due to different goals. Once cover crops are started on an operation more opportunities for cover crops will appear in different parts of the rotation, different soil types, different production risks and different climatic trends. And remember, diversity trumps density. Cover crops do not need to be as thick as the main cash crop. One

to three plants per square foot may be adequate.

Cover cropping and intercropping are just more tools in the tool box. Using a welder and cutting torch as the main source of fixing is quick and efficient at the time, but the resale value of the equipment will deteriorate quickly. Using the right tool at the right time will improve the equipment, ensuring it runs as it should. Same for the soil. We need to start fixing our soils. Jay Fuhrer from the United States Department of Agriculture said if we take more carbon out of the soils

than we put in, our children will not farm. If we put more carbon in than we take out, our children will be able to farm that land.

Author: Kevin Elmy. Original article at https://why-didnt-my-cover-crop-work/

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Castration Tips and Pain Control



There are numerous reasons for bull calf castration beyond reducing sexual activity and reproduction. Bulls are naturally aggressive and so castration becomes necessary for the herd's welfare and the protection of those that work with them. Bulls exhibit a lower-quality, inconsistent, tougher, less marbled carcass than steers. They also deliver a much larger number of dark cutters due to higher pH levels in the muscle, producing a visually unappealing dark red or purple beef.

Castration can be one of the most stressful and painful experiences for live-stock, based on measurements of blood cortisol concentrations and the level of brain neurotransmitters associated with pain. Studies of calves castrated age one to seven days show essentially no pain-associated behaviours. Blood plasma cortisol level tests are virtually the same as those calves left intact. Calves castrated as young as 24 hours of age show a reduced stress level and a lower level of sickness.

I recently spoke with Dr. Trevor Hook, veterinarian of Central Veterinarian Clinic at Ponoka, Alta., about the difference in age and methods used.

"Our opinion here at Central Vet is that it's better to do them earlier, in the first week of life, although that can be challenging as the testicles are small and banding is probably the way to go when you are doing them at that age," Hook said.

He acknowledged this wasn't practical for all producers with a lot of different things going on at calving time. Plus it can be difficult to

make sure both testicles are in the band.

If it's not possible for producers to castrate at the newborn stage, study results suggest castrating at the first handling opportunity. When calves are castrated at weaning or upon arrival at the feedlot, research shows a reduced weight gain in these animals.

When castrating bull calves at an older age, other factors come into play. Hook emphasized the need for good handling systems to lower the overall stress of the calves, but also to help ensure the safety of both the cattle and the people handling the animals. With older calves at weaning and especially in older bulls, Central Vet Clinic recommends surgical techniques as the optimal means of castration.

"They are not in pain as long, and they have shown that they don't lose as much weight. They are not off their feed as long, obviously with the appropriate pain management," said Hook.

He went on to discuss the difference in health and sickness they have seen at the vet clinic when it came to castration of newborns versus calves at weaning or older ages.

> "Doing it surgically, ideally with a vet, is the best with the big calves. I've seen a lot of wrecks," said Hook. "Vets can use more potent drugs and block

the testicles, making sure they heal up well and fast."

Hook has seen older bulls that were castrated in the spring and didn't gain weight all summer because they fought with the chronic repercussions of a bad surgery. Newborn calves, on the other hand, tend to carry on with normal activities after the initial procedure is completed.

Michelle Arnold, a large ruminant extension veterinarian at the University of Kentucky, cites a research study in her writings showing a potential doubling of the sickness rate in comparison to steers, with an average of 28 per cent on incoming steers compared to 60 per cent in calves castrated at that age.

On the topic of pain management for castration, Hook and his fellow veterinarians at the Central Vet Clinic recommend the non-steroidal anti-inflammatory drugs currently in use including Meloxicam, Metacam and similar drugs Flunixin and Banamine to buffer against pain and inflammation.

When the clinic works with older cattle and excessively large testicles, they like to use lidocaine to block the testicles with freezing before completing the surgical procedure. In this scenario, they use drugs not generally available to producers.

Hook recommends using pain medications during castration in all ages of calves, including newborns. The medications will "block the inflammatory process making them more comfortable and they will recover faster." he said.

These pain control drugs are available to producers on a prescription basis. Hook said they strive to "understand each individual producer's operation, number of

(Continued on page 8)

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(Continued from page 7)

calves and cattle, and ensure they are adequately trained on administering the medications with the proper dose to reach a comfort level."

of Practice states that as of January 2016, pain control was to be used in castration of all bulls nine months and older, Hook noted. As of January 2018, this was updated to include pain control in all bulls six months of age and

older, he added.

Although almost non-existent in years past, pain control in cattle, and specifically for castration purposes, has been growing widely in use, through the mandates of Ani-The Alberta Farm Animal Care Beef Code mal Care Codes of Practice and the changing views of the more informed public. Castrating bull calves as young as possible with the use of pain control is becoming a common practice.

> "Overall in our producers, I'd say the majority are using them (pain controls) because there is a benefit," said Hook. "Both dairy and beef producers are using it, even in the newborn calves."

Author: Bruce Derksen. Original article found at https://







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FFGA MISSION & VISION **STATEMENTS**

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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