



## Grain, Grass & Growth November 2016

[www.chinookappliedresearch.ca](http://www.chinookappliedresearch.ca)

### CARA's 7th Annual Cattlemen Clinic

CARA hosted another successful Cattlemen Clinic in Oyen on November 15. 45 producers participated in the day which featured great speakers, relevant topics and lots of audience interaction.

Dr. John Campbell, Department Head and Professor of Large Animal Clinical Sciences at the Western College of Veterinary Medicine, addressed Johnes Disease – what it is, identifying if it's in your herd, implications on your cows and how to reduce the spread of it. Although more prominent in dairy herds, evidence of the disease is increasing in beef herds and is showing up in younger cattle. A few of Dr. Campbell's recommendations included getting rid of cows who show clinical symptoms (and their daughters), isolating infected cows at calving, knowing the health status of herds you are buying cattle from and maintaining a clean environment for your calves. Dr. Campbell also led a discussion on the Beef Code of Practise, focusing on pain management. The Code was developed with ranchers at the table and is more of a practical guide than a regulatory document.

Sean Ewing, Plant Cattle Buyer from JBS Canada in Brooks led the afternoon presentations with information about JBS, some general trends in cattle pricing and fielded lots of questions on carcass quality, direct sales and delivery as well as reducing carcass discounts.

Dr. Cec Ruschkowski (Oyen Vet Services), WCABP Boehringer Ingelheim Veterinarian of the Year, discussed the role of vaccinations in managing various diseases and other factors which influence herd health. Her experience with local livestock issues and her practical view on herd management made for delivery of valuable guidance as she responded to questions from those in attendance.

Melissa Downing, first day on the job with the Alberta Verified Beef organization, provided details on the Verified Beef Plus program which is now in place, how it differs from the original and potential benefits to producers to take part.

The clinic ended with an update on available Growing Forward 2 funding opportunities by CARA's Conservation and Extension Technician Olivia Sederberg. She also offered help in developing GF applications as well as completing EFP's, which are required for the GF Stewardship programs.

All meeting participants enjoyed a delicious hot beef dinner (catered by Muriel Martin) served mid-way through the Clinic. Thank you to the speakers and AFSC for their contribution towards the Cattlemen Clinic.



## Growing Forward 2 Funding update



With the overwhelming applications and limited funding some Growing Forward 2 programs are currently closed until further notice. While Alberta Agriculture can't give a specific date to expect program announcements, we can let you know which funding programs are currently accepting applications and which are not.

### On-Farm Energy Management Program

This program shares the cost of investments that improve energy efficiency on Alberta farms. This enables producers to conserve energy and reduce carbon emissions, ultimately reducing the environmental footprint of Alberta's agriculture industry.

### What kinds of projects are eligible?

Eligible projects include (but are not limited to):

- Construction projects that install high-efficiency equipment from the program's Funding List
- Retrofit projects that improve the operation's energy usage per unit of production
- Installation of sub-meters to monitor on-farm electricity and/or natural gas usage
- More sector-specific examples can be found in the factsheets to the right.

Visit the growing forward 2 website to see all of the potential projects, on the new funding list attachment.

### How are costs shared?

For most items the program covers 70% of eligible costs, to a maximum of \$750,000. Some items are funded on a square-footage or formula basis. The program also covers 100% of the cost for each applicant's first three sub-meters.

\*Not eligible are residences and buildings used primarily for non-farm activities.

### How do I start?

Submit an application to the On-Farm Energy Management Program complete with quotes for any equipment you are looking to purchase.

For more information on any of the growing forward 2 programs or to start your EFP, you can contact the CARA office at 664-3777.

*The following programs are still closed to applications. These programs may or may not become available in the future. But if they do reopen be ready to apply.*

**Livestock Welfare Producer:** For implementing low stress, low hazard environments for livestock such as upgrading corral systems.

**Business Management Skills Development:** For improving your business management skills, enhancing the industry's competitiveness and sustainability.

**Business Opportunity:** For enhancing your businesses competitiveness and growth prospects by connecting with expert business advice.

**Animal Health Biosecurity Producer:** For livestock quarantine pens, trailer sanitation and rodent control for poultry for example.

To get the most up to date information on program availability please visit [www.growingforward.alberta.ca](http://www.growingforward.alberta.ca) and click 'subscribe' on your favorite programs.

## 310-farm



### CowBytes

CowBytes is an easy-to-use beef ration balancing software package. It allows you to balance for all the major nutrients and most of the micro-nutrients the are needed by your cows or calves. The program calculates the nutrient values of rations based on the specific feed source you have available.

CowBytes also allows you to combine ration information with management and economics, making it a great decision-making tool for cattle producers.

CowBytes is compatible with Microsoft XP, Vista and Windows 7, 8 and 10 operating systems. There are several programs that will run Cowbytes 5 on Mac computers. These include Boot Camp, Parallels, VMware Fusion and Crossover by Codeweavers.

Check out CARA's upcoming Cowbytes workshops in December in Spondin (Dec. 2), Consort (Dec. 6) & Oyen (Dec. 13).

# When it comes to healthy soil, you want to lump it

## Soil aggregation is critical — in several different ways — to growing healthy crops

By Jennifer Blair, *Sberta Farm Express*, November 14, 2016

Think water is your biggest limiting factor when growing a crop? Think again.

“Soil aggregation is the most important constraint that we have,” said Yamily Zavala, crop and soil health management specialist at Chinook Applied Research Association.

“In order for a soil to function properly, we have to have all the soil processes — physical, chemical, and biological — function in a way that they can maintain the soil in a good condition.

“Aggregation is one of the most important components of the physical process of the soil. We want our soil to have good aggregation.”

Soil aggregation — the way soil particles bind together — can act as an early warning sign of problems in the soil, said Zavala at a Foothills Forage and Grazing Association tour in mid-October. Things such as soil erosion, compaction, nutrient deficiencies, and root diseases are all signs of “really bad conditions in the soil.”

“If I have physical problems in the soil, that’s going to affect my biology in the soil and my chemicals in the soil, which means I’m not going to have enough nutrients or microbials (groups of bacteria and some fungi) to build soil aggregation,” said Zavala.



Chinook Applied Research Association has launched a soil health lab to evaluate and improve soil health, said soil health specialist Yamily Zavala at a Foothills Forage and Grazing Association forage tour in mid-October. *Photo: Foothills Forage and Grazing Association*

“In order to have good soil health, all of the processes in the soil have to function properly.”

And it isn’t enough to “give a pill to remediate the pain of the soil. We need to see why the pain in the soil is there,” she said.

“We need to find the cause of the problem. We need to look at the physical, biological, and chemical properties in the soil, and we need to look at all of them in a way that gives us information about what the problem is.”

### Soil lab

That’s why her organization has launched a new soil health lab, said Zavala. The lab will collect soil samples to evaluate and improve soil health based on “local conditions and site-specific constraints.”

“We need to monitor the changes in the soil when we change the management in there,” she said.

“When we know what changes are happening in the soil based on what we do, we can speed the process for healing the soil.”

The lab will study soil health indicators like aggregation stability, compaction, biological activity (such as active carbon), and “soil food web biology,” which includes bacteria, fungi, nematodes, and other living organisms in the soil.

The soil health indicators will then be used to establish baseline data and benchmarks for farmers’ fields, which will give producers the ability to evaluate their own management practices.

The fees for sample testing haven’t been set, but the goal is to keep them “affordable for producers so access to their soil health information is not restricted.”

“We need to create bridges between producers’ practices and improving the soil health, and we need to identify and evaluate soil management strategies that will target specific problems,” she said.

“The more samples that come from farmers, the more we’ll be able to develop our own baseline for soil health.

“We want to understand what’s really going on to help you improve the health of your soil.”

**Continued on Next Page** →

### CARA’s Soil Health Lab Update

Watch for updates as we move forward in the development of our NEW Soil Health Lab.

## Continued- When it comes to healthy soil, you want to lump it

### Building soil aggregation

On most farms, that starts with building stable soil aggregates. Good soil aggregation leads to better aeration and water infiltration while reducing erosion and compaction — creating a better “house” for soil microbials that contribute to plant health.

“It’s important to create a habitat for micro-organism activity in the soil,” said Zavala. “The physical components of the soil are the parts that allow the microbial population to live in the soil. And when we increase the aggregation, there’s more microbial activity.”

That’s done first through biological activity — not through physical or chemical activity.

“We need to ask what the biology wants,” she said. “What they want is nothing different than what we want. I want air to breathe, water to drink, and a nice house I can live in. The biological components also want that.”

And in many cases, producers are already giving microbials what they want, by moving to reduced or no till, leaving residue on the soil, and increasing crop diversity.

“What we’re doing is feeding the microbials that are in the soil,” said Zavala. “Once we have soil organic matter and food for the microbials, the microbials can start doing their functions like improving soil nutrients and aggregation.”

One of the best ways to do that is through cover crop cocktail mixes, she added.

“Diversification allows you to increase soil organic matter. That’s one of the things that helps you improve soil health,

and then you get better crops, better yields, and better-quality products.”

Each cover crop in a cocktail mix has a function, said Zavala.

“With cover crops, it’s very important that you have a purpose. What is it going to do to your soil? What is it going to do to your livestock?” she said, adding it’s important to have a mix of both warm-season and cool-season broadleaf crops and grasses.

“If you have all of that in your mix, that’s going to give you benefits because each one of these species has a characteristic that allows microbials to wake up in the soil.”

The different types of cover crops increase soil organic matter in different ways above and below the ground — “above with the plant and below with the root.”

“Every single root of every plant is different, with different depths and widths,” she said. “All of that has a different function in the soil. They all build biological diversity in the soil.

“When you have different roots in the soil, you have food for different kinds of microbials in the soil.”

But there’s no one-size-fits-all solution to soil health problems, she added. “It’s not just one thing you need to do. We first need to find indicators in the soil that show what’s causing problems for us.”

## Are you a Member of Chinook Applied Research Association?



Membership has many benefits. As a member you receive or have access to our annual report, monthly newsletters, input of tag numbers for age verification, the use of our forage probe, sample shipping, interpretation of analysis as well as access to all CARA library materials and expert consultation from CARA staff. Most of all, your input and participation will help support and expand applied research and extension that is relevant to east central Alberta.

Buy your membership today! An annual membership is \$20 and a five year membership is \$80. You can purchase a membership at any event or come visit us in Oyen.



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# Utilizing Annual Cereals for Livestock Feed

## Alberta Agriculture and Rural Development, Agri-News

Producers may find it necessary to feed more animals than anticipated during times of drought due to a number of different reasons. In such situations, additional feed requirements may partially be met by the harvesting of annual crops to supplement current hay production and carryover stocks.

### Consider

Points to consider when using annual cereals as forages for livestock:

- Feed test forages, grains and straw before the start of the feeding period. Develop balanced rations to prevent production and reproduction problems, and optimize the use of feeds available to minimize costs. If help is required to balance rations, talk to a qualified nutritionist. Young animals are fed to grow and develop. Mature stock is fed to maintain condition over winter and to provide a live calf next spring. The winter feeding program this year can dramatically affect reproductive efficiency for next year's calf crop.
- Feeding cereal forage is different than feeding mixed alfalfa grass hay. Calcium, magnesium and potassium levels are different. A 1:1 mineral may not work in these situations. Feeding additional limestone and magnesium in the ration is often required to prevent problems with downer cows, milk fever and winter tetany.
- Rough awned barley and foxtail barley have barbed awns. When consumed, the awns can become lodged in the gums, between the teeth and gums or in the cheeks creating abscesses and "lump jaw." If rough awned material is part of the feed supply, provide breaks in the feeding period where alternate feeds are provided to the animals. A two or three-day rotation between the rough awned feeds and other feeds will allow time for injuries to heal. This approach may help reduce the severity of the problem. If problems do occur, consult your local veterinarian for treatment.
- Under drought conditions, annual crops may contain high levels of nitrate in early to mid-summer. Drought stress reduces the plant's ability to grow and utilize nitrogen normally. Test the forage for nitrate levels to determine what level is present. Cows can adjust and adapt to higher nitrates in feed over a period of time; the concentration of rumen bacteria that degrade nitrate increase over four to seven days. This short term adaptation, along with the development of more red blood cells to transport oxygen to the tissues over 14 to 21 days, improves the ability of the animal to withstand higher nitrate feeds. Providing feeds with high starch content such a grain or pellets help detoxify nitrates. Consult with a livestock specialist or nutritionist to resolve potential problems.
- Breeding efficiency, or the ability of the cow to conceive a calf, can be compromised if cows are turned in to graze crops that were heavily fertilized with nitrogen fertilizer or manure. As animals consume forages with high protein levels, blood urea nitrogen levels (BUN) also increase. The high BUN levels interfere with the implanting of the fertilized egg onto the uterine wall. This problem occurs when the overall protein content of the ration is more than 20 to 22 per cent on a dry matter basis. Cows will appear to settle, but come back into heat three to four months later. Provide straw or other low quality forage on a free choice basis to reduce overall protein consumption.
- Moving cattle abruptly from a drought-stressed, low yielding grazed pasture with minimal forage available to a lush salvage crop or pasture can cause Atypical Interstitial Pneumonia. The disease occurs within 10 days of movement onto the improved forage. Affected animals emit a grunting noise when breathing and do not want to walk. If sick animals are forced to move, they may collapse and die.
- Forages mature more quickly in a drought year compared to a normal year. Quality is reduced as the forage matures. When making silage or greenfeed, cut forages one to three weeks earlier than normal to maintain quality. Plants that have turned white during the heat will not have adequate moisture to develop a proper fermentation. The crop will have a reduced sugar content compared to a normal year and will take longer to ensile. Diligence is required to maintain the proper components: moisture content during the harvesting period, chop length, adequate packing and covering with plastic. Round bales must be placed in a tube or wrap within 12 hours of baling; otherwise, the fermentation process will be impaired by unwanted microbes.
- The nutrition topics addressed above can be evaluated by using a ration balancing program. Producers can develop their own rations at home. A useful computer program is the "Cowbytes" ration balancing program available from Alberta Agriculture and Rural Development. A demo version of this software is available at on the department's website Ropin' the Web.

For more information

Alberta Ag-Info Centre call toll-free at 310-FARM (3276)

### What is the Quality of Your Feed?

CARA has a hay probe available to producers to collect hay samples for analysis. There are a few feed test packages to chose from and they range in pricing from \$20 to \$60/sample. Samples are sent to labs (FREE freight) for analysis. Feed analysis can show protein levels, energy, fibre, moisture, mold and a lot more! For more details contact the CARA Center.

# Marketing fusarium-damaged wheat

## Got fusarium? Here are five guidelines for unloading that low-grade grain

By Julienne Isaacs, Grainews Published: November 4, 2016

If you grew wheat this year, odds are good you're facing the hard reality of fusarium. What are you going to do with damaged grain? It's a hard question in a good year, and much harder in a year when fusarium infection is widespread.

Grain infected with *Fusarium graminearum* can carry vomitoxin (also known as deoxynivalenol, or DON), which in high doses is toxic to animals and humans.

According to Bruce Carriere, president of Saskatoon-based Discovery Seed Labs, it's too early for definite numbers on fusarium infection, "but the range in durum goes from two to 70 per cent infected," he says.

"There are some samples in the lab where vomitoxin levels are at 33 parts per million (ppm) — those are extreme examples though. Those are the exception rather than the rule. I do expect vomitoxin levels to be in the five to 10 ppm range."

Derek Squair, Agri-Trend's president of marketing, says producers may have fewer marketing avenues due to the lack of good grain for blending. "It depends on the quality the producer has, but it's going to be tough to move it," he says.

If you've got damaged grain, here are a few rules of thumb for marketing it.

### 1. Check insurance options

Rob Moss, policy analyst with Saskatchewan Agriculture, advises producers with damaged grain to consult a crop insurance agent as soon as possible.

"The quality factor is an insurable peril under Saskatchewan crop insurance," he says. "It doesn't mean you'll necessarily be in a claim position, but the experts are up to speed and working with you in case you are in a claim situation."

This year, bringing the professionals into the conversation sooner rather than later is of benefit to the producer, says Moss.

### 2. Sample and test

Moss says producers should take samples at the bin level to send to grain companies in order to find out their marketing options as soon as possible. "Companies may purchase the grain right off the bat, but they're more likely to wait to see what the rest of the crop looks like and what the blending options are going to be," he says.

Vomitoxin levels will be key. Phil Bergsma, FarmLink commodity merchant, says typical milling markets for wheat and durum will accept grain with a maximum of two PPM of vomitoxin. "Going into the hog feed market you're looking at one PPM," he says. "Poultry is between four and six ppm, and cattle is up to eight or 10 ppm."

Testing is crucial. "It's going to be imperative to take representative samples at the bin at harvest and make sure you're getting your grades not only from local buyers and elevators but also sending them to a seed lab," Bergsma says.

### 3. Clean it up

Moss says you can clean fusarium out of grain using gravity tables or colour sorters, but it can be a very lengthy and expensive process.

To minimize costs, just get just a truckload cleaned as a test, to evaluate the improvement.

"If they're able to clean it up in a seed plant, and I would say that's something a lot of producers should be considering, they could be looking at premiums of upwards of \$3/bushel more for that grain, or \$6 to \$6.25 if it would be clean enough grading at three," he says.

"If they're on the threshold of making a grade, they should get that grain cleaned."

### 4. Store it as a last resort

Bergsma says storing grain on the chances it can be blended off with next year's crop may not be the best solution.

"The big risk with that is if we hit another high infection year of Fusarium, then they're in the same boat," he says. "Up to a max 10 they can sell it into the feed market, obviously not at values the farmer loves, but I'd say it's a good idea to try selling at least a portion sooner rather than later."

### 5. Don't give up

Grain that is severely infected with vomitoxin may need to be destroyed, although Squair calls this measure "drastic."

"I'm hoping at some point you can find a use for it," he says.

Bergsma echoes that producers make every effort to find a home for damaged grain before destroying it. "Phone around with buyers. There are options out there, even though they are few and far between."



Fusarium graminearum symptoms in barley are less obvious than those in wheat. Dust from contaminated grain contains more contaminated material than the grain itself. Photo: Alberta Agriculture and Forestry



# Cowbytes Workshop

Bring your own laptop (if possible) and join CARA & Barry Yaremco, Beef & Forage Specialist with Alberta Agriculture & Forestry, for a day of hands-on training using Cowbytes beef ration balancing program. We will be going through step-by-step instructions of the computer based cattle ration program. You are encouraged to bring your own feed analysis information along with you to do a one-on-one ration formulation based on your herd and your feed. CARA can send your feed samples to the lab for testing. If your feed analysis information is not available, average feed values can be used.

## Spondin

Spondin Community Centre  
**Friday, December 2**  
10:30 am– 2:30 pm

## Consort

Neutral Hills Learning & CC Centre  
**Tuesday, December 6**  
10:30 am– 2:30 pm

## Oyen

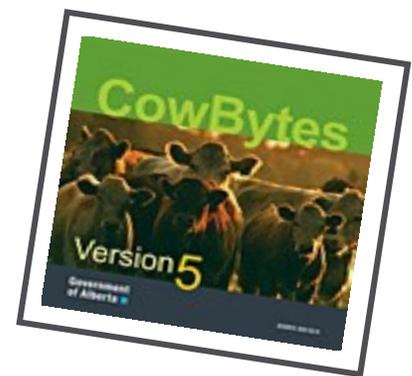
CARA Centre  
**Tuesday, December 13**  
10:30 am– 2:30 pm

**Cost:** \$15 (includes lunch)

Cowbytes program is available online or at the workshop for \$50.

**Limited seats available**, register early to save your spot. Call CARA at 403-664-3777 or email [cara-3@telus.net](mailto:cara-3@telus.net) to register. If you do not have a laptop, please notify the CARA staff when you register.

Please note that workshops in other areas will be held if there are producer requests.



Growing Forward 2   
**UPDATE!**



Spondin & District Ag Society

Alberta  Agriculture and Forestry

## Schedule of Events

<b>Spondin Cowbytes Workshop</b> Spondin Community Centre Friday, December 2 10:30 am– 2:30 pm	Bring your own laptop (if possible) and join CARA & Barry Yaremccio, Beef & Forage Specialist with Alberta Agriculture & Forestry, for hands-on training using Cowbytes beef ration balancing program. Register early by calling CARA at 403-664-3777 or by emailing cara-3@telus.net
<b>Consort Cowbytes workshop</b> Neutral Hills Learning & CC Centre Tuesday, December 6 10:30 am– 2:30 pm	Bring your own laptop (if possible) and join CARA & Barry Yaremccio, Beef & Forage Specialist with Alberta Agriculture & Forestry, for Hands-on training using Cowbytes beef ration balancing program. Register early by calling CARA at 403-664-3777 or by emailing cara-3@telus.net
<b>Oven Cowbytes Workshop</b> CARA Centre Tuesday, December 13 10:30 am– 2:30 pm	Bring your own laptop (if possible) and join CARA & Barry Yaremccio, Beef & Forage Specialist with Alberta Agriculture & Forestry, for hands-on training using Cowbytes beef ration balancing program. Register early by calling CARA at 403-664-3777 or by emailing cara-3@telus.net
<b>Ladies Calving Clinic</b> Details TBA	Details TBA
<b>Young Farmers Forum</b> Oyen February	AFSC crop insurance, grain contract 101, financial advice, crop scouting 101, markets and updates. WATCH FOR ANNOUNCEMENT OF DETAILS
<b>Young Ranchers Forum</b> Hanna February 7	Cattlemen's Young Leaders or young cattlemen's council, social media- telling your farm story, what buyers want from the cattle, herd health tracking, feed samples interpreting, market's and updates. WATCH FOR ANNOUNCEMENT OF DETAILS

### Alberta Environmental Farm Plan

The Environmental Farm Plan (EFP) is a free, confidential, and voluntary self assessment tool that allows agricultural producers to evaluate their current farm practices. On completion, each producer has an action plan to address areas of environmental risk.

The Alberta Environmental Farm Plan (AEFP) program began in 2003 and has been delivered by the Agricultural Research and Extension Council of Alberta (ARECA) since 2013.

#### Benefits

- Access to funds, e.g. Growing Forward 2 program
- Increased operational efficiency
- Reduced farm costs (inputs) resulting in increased profit
- Expanding markets: many major purchasers require producers to have an EFP
- Reduction of risk, leading to better production and leaving a healthy farm for the next generation

For more information visit: [www.albertaefp.com](http://www.albertaefp.com) or contact Olivia at CARA to start your Alberta Environmental Farm Plan.

### ALBERTA RANCHERS WINTER GRAZING CATTLE

video series

Visit the **Alberta Agriculture YouTube** channel to watch the 'Managing Risk in Winter Grazing Systems' video series. These videos feature practical tips from cattlemen across Alberta including Calvin Bishell, James Madge & Colt Peterson from the Special Areas.  
**Check them out!**

### More of a Digital Person?

If you would like to receive this newsletter via email, please contact Olivia at  
cara-3@telus.net

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