

Beef Cattle Day
February 8, 2018
Dunvegan Motor Inn

By: Brian Harcourt

Organized by PCBFA and NPARA..

The essence of this seminar was how to achieve and maintain Hybrid Vigor in your herd.

1st speaker..Dr. Susan Markus...www.myherdandme.com.
Dr Markus is a professor at U of A and ranches with her husband at Castor, AB.
H-V is a cross breeding system by using DNA to create the highest quality meat animal for our markets.
To maintain H-V it is very important to keep good records of all your herds activities.
The first cross breeding will give you a fairly high H-V score but you should access DNA records to keep up the high score.
Check out the Dr's web site.

2nd Speaker..Deborah (Deb) Wilson, VP..BIXS.
Beef Information Exchange System.
www.BXISco.com
Deb works out of Edmonton and farms with her family at Warburg AB.
Maintaining a sustainable supply of high quality beef is most important for the farmer and the Markets.
BIXS is a new way of keeping track (traceability) of beef cattle from farm to plate.
Very important to enter the correct info into the system.
Info has to come from the farm-the feedlots-the packers and even the retailers.
Food safety is also important, www.foodintegrity.ca
The end-user will pay a bit more for good quality safe food.

3rd Speaker..

Monica Hadarits..Canadian Roundtable for Sustainable Beef.

She spoke about the necessity for cattlemen to accept the need for traceability so consumers can be more confident in the quality of the beef they purchase on a daily basis.

City people, 93%, know "ZIP" about farming.
60% want to know more.
Beef production uses 33% of agricultural land.
Wildlife uses 68%.
www.crsb.ca
hadaritsm@cattle.ca
1 306 221 6227..

4th Speaker

Emily Murray...
Canadian Beef Sustainability Acceleration Pilot Project..
She is associated with Cargill, McDonalds, Cara, Loblaw's, etc.
These Companies want to be assured of the quality of your beef.
Set standards, meet them and record them properly.
Education needs to start in the classroom.
Consumers want to know more of how beef is raised.
Sustainable, verifiable beef equals value to the farmer.
"Will Rogers" Even if you are on the right track,
if you sit there you will get run over.
And....Nothing you cannot spell will ever work.
Get Registered with BIXS...

5th Speaker...

Melissa Downing..Alberta Provincial Coordinator for
"Verified Beef Production"

The program started in 2003, BSE..remember?
VBP was launched in 2016.
"Quality" starts here. Validates what you have done,
how you treat your herd, on a daily basis.
Animal care, feed, water, shelter, handling, transportation,
bio-security, TB, BSE, etc.
Low cost, practical, industry led.
www.verifiedbeefproductionplus.ca
1 866 242 7404
On farm audit records etc, \$650.00 each.
1 780 753 1934
Believe it or not, like the idea or not
Verified Beef is going to happen!!

Sainfoin Story...Feb. 28, 2018..Grimshaw, AB

A Seminar put on by NPARA and PCBFA..

First Speaker Dr. Surya Acharya...Lethbridge U.

Quotes and comments.

Sainfoin is good for dryland areas...Lethbridge.

Excellent food quality and palatability for cattle.

New varieties like Mountainview will not
with even up to 15% in your pasture mix.

There is no bloat free alfalfa variety.

Older varieties of sainfoin not regrow well nor
produce enough dry matter.

New varieties like Mountainview will survive cutting
and grazing, good regrowth and better yield of dry matter.

Alfalfa and sainfoin grow well together.

Another new variety is Glenview, high yeilder and no bloat.

Weed control, graze down to 8-10 inches,(20 centimeters =8 inches).

An inoculant is required.

2nd speaker.. Grant Lastiwka..

Sainfoin has a pink flower.

Grants comment "Tough enough to grow pink".

Sainfoin helps to maintain legumes in your pasture.

" " helps to increase yields to capture CO2.

" " contributes 1/3 to 1/2 of average daily gain.

2004, with sainfoin you could gain up to 25%more growing days
and 21% more dollar value.

2013-15, now with the new varieties you can expect
57% more grow days and 92% more \$ value.

Cocktail seeding, greater variety of seeds is better.

Plan and seed the field right the first time.

Monitor, measure and manage every feature about the field.

Graze wisely.

Winter Watering Systems Tour

We all gathered at the Wanham COCO hall

Had a coffee and a bun, a little discussion about where we are going.

First stop..The Birchills Hutterite Colony.

The water system is a "CAP" by Barrhead Plastics.

Solar powered with 4 x 12 volt battery backup.

The unit is about 8' in diameter with 4 holes in the
top to allow drinking access for the cows.

There is a 3' removable top to allow access for cleaning or repairs.
The tank stands 3' tall with a tapered curve to the top.
Water supply is from a nearby dugout by gravity
through a 2" drill stem to a submersible pump
to a float and valve control system.
Some one has to check the system every day during the winter.
Very reliable during summer months.
Their 2nd system was a fairly large tractor tire cemented in.
Dugout nearby is the water supply with a continuous
24 volt pump, excess drains into a 24 " culvert.

Second stop..Mike Riemer..he has a "Sundog Solar" system
powered by a 2 solar panels with battery backup.
The water is pumped up through the center of the bowl
when the cow sticks her head in and triggers the sensor
that controls the 24 volt pump.
Up comes the water, the cow drinks and when done
the excess water drains back down the same hole.
The tank is about 3' in diameter and 2 1/2' tall.
Mike is very happy with the system, little to no trouble.
He checks it daily but it is in his yard.

Third stop..Murray Sorenson..
He uses the " Thermo Sink" system.
In the center is the control unit, 2 drinking tubes on each side.
Each tube is about 5' long and are very well insulated.
Water is pumped from his pump house through
a black plastic poly pipe 1 1/4", buried 8' deep
and the usual pump and pressure switch system, every farm has one.
Water enters at the base of the center tube into a float control unit.
The tube has a removable top and an external shutoff valve,
for cleaning and repairs, Murray said he found rocks and nails at the bottom.
Murray likes his system..

Hemp Seminar

April 17, 2018

NAHPI..Northern Alberta Hemp Processing Initiative.

Tapping in to Global markets..

Speaker..Dianne Chasion..Smokey River..

A steering committee was created to search out markets.

At the head..Dan Dibbelt, REDI and PREDA.

Francois Cattilier, assisting agent.

They contacted 25 countries to investigate sales opportunities.

A mission went to North American Auto Show, Jan. 2018.

Ecobuild London, England, Mar. 2018.

Auto Interior Expo, Stuttgart, Germany, June, 2018.

Greenbuild International Conference and Show, Chicago, Nov, 2018.

Comments....

Hemp is an environmental Super Star..

1st and strongest material fiber cultivated.

Grows 20x faster than trees.

2nd fastest growing plant on earth.

Does not need fertilizer or chemicals.

Strong root tap.

2017, farmers planted over 100,000 acres in Canada.

Hemp is currently used in 29% of building products and 35% in industries.

Two main byproducts are "bast and hurd" fibers.

Bast fibers are used in car panels, insulation, carpeting,
paneling, simulated cedar shakes, fiber board and more.

Anti mildew and microbial properties.

1940, Henry ford built a car out of products.

Whole houses are being built out Hemp products, blocks are "Fire Proof".

All parts of this plant can be used, Food, Feed, Health and Buildings.

PCBFA, NPRA, SARA and MARA are assisting in this effort.

Must apply to buy seed.

J. Slaski..PhD..PAg...Invotech.

Greek term, kaunabes..(fragrant cove) strong odour.

Latin term, "sativia indico".

The grain type, short, like wheat, high seed yield, low biomass.

Forage type, tall to very tall, 15 feet high stem yield, low seed yield.

On long days the plant will grow as much as 15cms.

Every part of the plant can be used.

The variety "Silisea" seed good for western Canada.

Seeding dates mid May to mid June.

Seed shallow, 1.5cms or into moisture, grain, 20/25 Kgs acre, fiber, 40/60 Kgs acre.

Soil temp should be at least 8 degrees C.

Both are somewhat tolerant to frost.

Both are sensitive to N fertilizer, use sideband or manure.

Weed control, pre seed, use Glyphosate.

Avoid rotation with canola!

Most farmers are familiar with growing wheat and barley, hemp is similar.

Byron James...B.Sc. Supervisor, Vegerville, AB.

(Only plant in North America).

Suggests to harvest at 16-18% moisture, dry to under 10%.

Seed can be aerated.

The straw maturity important for the Retting..the process for breaking down the bonds between the fibers found in the hemp straw.

Moisture below 7% is to dry.

Goggle NAHPI there 13 articles on Hemp.

Much to read. Could be worthwhile to look into HEMP.

Growing the North
February 20, 21, 22, 2018
Entrec Centre
Grande Prairie, Alberta

Garry Candy

The event began with local businesses showcasing their products on Tuesday evening: craft beers, chocolates, honey, soaps, etc. This was very well attended – about 400 attendees at the conference – days started at 7:30 am and continued until 4pm or later. This was the 9th time the event was held.

The conference began with an Indigenous prayer with the elder with a wonderful voice wearing full regalia and with accompanying drum. Evergreen Park is located on land owned by Treaty 8.

The event was hosted by Tom - referred to as the Nazi time keeper.

- Chris Fields – Marketing and Community Builder from Manitoba

He claims the trend is in building in rural areas in the East – meaning building a city away from the city. In order to have good and prosperous communities you have to have people with personal responsibility taking action or at the very least, vote. In St. Boniface, Manitoba, there was only a 25% voter turnout. People using technology are more connected across the world than they are in their own neighbourhood or town. About only 5 to 6 people show up at council and community meetings.

The Vocal Minority Rules – this statement was evident throughout the conference. The communities' (peoples') decisions are controlled by fear and paranoia. He made reference to the fear and guilt around the global climate change (he called it global warming). Chris described most people as cucumbers made up of 90% water with anxiety and an attention span of about 8 seconds. The mindset of 80% of people is to have employment and afford basic services. 5 – 10% desire to be creative and innovative and have a positive attitude towards community building.

A positive attitude is:

- us, not me
- be able and willing to take control
- be able to embrace change
- be able to not fear the future
- be willing to fight for what you know is right

The strongest people are adaptable – Chris was also very strong in emphasizing that we need value added products, not just shipping to other countries for finishing as well as enhancing our tourism market as we have a lot to offer.

- Garth Braun – President and CEO Chair for Blackbird Energy

Garth who was born and raised in Grande Prairie and has Canadian and Overseas experience in the petroleum industry. He spoke about the business model shifting because of technological changes. Artificial Intelligence software can read 100,000 books per minute. He and his associates have come up with several innovative changes in how wells are drilled and frac't. they have well bore patents that will be registered in the next 3 to 4 months. He suggested to business and farm owners (where all the speakers referred to business, it included farms, ranches, etc.) that cutting costs are not always the answer. He and his partners developed mono bore to pinpoint locations to frac horizontal wells. He claims that the Montney zone has 13 billion cubic meters of gas. We need to develop more reserves of condensate as 200,000 barrels are pumped into Fort McMurray to thin bitumen to facilitate pumping. Blackbird has 114 sections in the Montney to drill on. The protection zone on sour well activities is now 250 meters. Well drilling times have been cut from 50 days to 17 for 8000 foot wells.

- Glen Nevokshnonoff – CO of SevenGen.

Their name of 7 generations came about from the desire to have a sustainable business for at least 7 generations. He said oil is a global commodity whereas gas at this point is not – the US is our only customer. They have 800 sections in the Montney and are planning 100 wells a year. Marketing gas to places like China would lower CO₂ emissions worldwide. They are drilling deeper and getting more production. The government announced a 5 million dollar tax incentive for 7 Gen.

- Len Morissette – CIA Solutions

Len comes from a community in Saskatchewan, worked for Ainsworth and decided to strike out on his own, hence CIA. He sells advertising on big screens – digital and video. They have been in business for 7 years, now a partnership with 1 employee. They received monies from GPRC's centre for research and innovation and have not looked back. He showed some ads and film they have produced which were excellent.

- Honorable Deron Bilous – Minister of Economic Development and Trade

The Minister's first comments were on the province backing the building of pipelines to get more than one market (the US) for our petroleum products. Alberta economy is the fastest growing in Canada – 25,000 new jobs. Windsor Ford with the help of government incents is building the largest new dealership in Canada. He announced tax credits of up to 5 million dollars. The 1 - 2 billion in investments will be leveraged by 120 million – available until March 15. 1 – 4 billion is for innovation incentives while there are 400 million available to Ag and Industrial for loan guarantees. The government stand on the Caribou action is with the working people and he says it is a federal plan with unclear details.

- Emily Salsbury Deveaux – Executive Director – School of Retailing, Market Research Metrics

The majority of questions asked of her were about Cannabis. Should I:

- buy stock in it?
- open a store?
- grow it?

There are more vacancies in retail locations than ever due to changing ways of purchasing goods and doing business. She knows Fairview and suggests there are numerous opportunities in Fairview.

- Raa S – IT solutions for retailers

We are in a transformational change:

- Crisper G – gene editing
- Plant based hamburgers
- Cultured meat to build a hamburger
- 3D printers – ability to build a required part reduces inventory
- Bit coin – new way of currency
- Drones – locate weeds with software and spot spray them
- Autonomous Ag and Industrial equipment
- Auto apple picker – can identify ripe apples and pick them
- Driverless seed drill – designed for a 2500 acre farm
- Scanning plants – DNA from Canola can tell if you have gelerotinia – know within 24 hours if spraying is required

She summed up by saying that fear is expensive because it can result in making poor decisions.

- Monty Seymour – Farm Credit Director of Industry and Stakeholder Relations

Monty is from Regina and talked about market disruptors and the future of agriculture in Canada. Change is happening – how safe is your business in the future? Product backgrounds are increasingly important – such as beef sustainability as we learned about in the seminar in February. Upcoming artificial intelligence and smart farming means the 21st century belongs to Agriculture – Are We Ready?

- Cam Battley – VP Aurora Cannabis

He claims it is the most well developed medical industry in the world. What Cannabis means to Alberta – will result in diversity to the province and elsewhere. An industry centre of excellence is working with the U of A and NAIT. Their growing techniques include hybrid and greenhouse designs from Holland. Air free and nothing else in the growing areas means no contamination from a source including workers. To harvest, overhead cranes pick up tables and take them to the harvest areas. There are 90 licensed medical cannabis producers across Canada. Aurora employed 35 employees 2 years ago with over 500 now. Aurora medical cannabis began in Cremona and now is the largest cannabis producer employer in the country.

- Dr. John Gilliland – Director of Ag and Sustainability – Devinish Nutrition

John lives in Ireland where he owns a farm that he said almost broke him. They grew willows for a time for heating fuel and water (pond) cleanup. He was president of the farmers' union in Ireland throughout the Hoof and Moth Disease and had the mess over in 16 weeks. His employment is not with Devinish Nutrition – a Northern Ireland based global company working with nutrition for livestock. They manufacture, using tons of research, food for animals to, in turn, improve food for humans. Devinish also had a farm that was brought back to fertility and an Embryo fertility farm in Uganda. The company believes in:

- Investment in people
- Industry knowledge
- Evidence based in science
- Forming partnerships

They invest 20% of income in Research and Development: nutrition for beef and dairy cattle, hogs and poultry. Feeding chickens Omega 3 improves heart function, food usage and eyes. Chicken fed with enriched marine omega 3 brings a 42% premium. Omega 3 goes through the stomach to the intestine where the body uses it. Soil nutrients are decreasing and the plants follow, affecting those consuming them and productivity. Research showed that copper increased fertility. Diet related disease is increasing - vegetables and fruits over the last 50 years show a reduction in key nutrients. In the 1950's wheat had good nutrient value and then the dwarf gene was introduced to increase yield and straw strength but nutrient values dropped. Oily fish is very rich with omega 3 and that comes from the algae that the fish eat. We have bio enriched foods through livestock feed but nutrients must be measured in food after it is cooked. Testing blood levels of EPA, DHA and Omega 3 and fatty acids is required to quantify the scale of positive impact. Foods have to deliver what is on the label. They have been working with methods of soil testing using drones, lasers and GPS tracking. We need to manage phosphates as too much is appearing in runoff water and a number of dairy cows had to be destroyed. In Ireland when they did some deep earth testing, they found ancient structures from years ago exuding phosphate which accounts in part

for the rise in phosphate levels. His mantra is “measure, then manage, then do over again and again.” LIDAR sampling in forests detects light and ranging. Studies with forage crops seeded between rows of trees found they have extended grazing periods with the trees. He summed up by saying the Alberta Beef Market needs to change to enter into European markets. Sustainability in the food industry is in producing safe, nutritious fruits, vegetables and meats for the public.

- Carol Ann Hilton – CEO and founder of the Indigenomics Institute Int.

Carol is an indigenous person from Vancouver Island – making Canada and elsewhere aware of the economics that are and can be enhanced with First Nation and Metis involvement. She talked about law suits, rights and the land base of indigenous peoples. Indigenomics is just that – law cases involving stewardship over land – petroleum access among other things. She said there is no wealth or justice in a 1 billion dollar LNG offer to a First Nation band or bands. She has been involved with 230 legal cases against the government of Canada that were won in Supreme Court. 20% of the Canadian land base is controlled by First Nations. Fostering entrepreneurship must be a national effort.

- Dr. Jonathon Banks – Geothermal Researcher – U of A

This could be a future source of energy. 99% of the earth is hotter than 1000 degrees C. A well 3 km deep would have a temperature hot enough to boil water.

- Honourable Marg McCuaig Boyd – Minister of Energy

She spoke about GPRC now being able to grant some degrees which would be announced later in the day. She outlined some of the NDP accomplishments in this area:

- Bridge in Peace River
- 200 million dollars to be spent on highway 40
- 5 schools in Grande Prairie finished with 6 more underway
- Hospital in Grande Prairie is on budget and on time

Currently Ottawa receives 22 billion dollars more from Alberta than we receive back. Alberta will remain a resource rich province – 2 petroleum facilities north of Edmonton have received tax incentives, one of which is to produce plastic products. She did not comment on the Caribou situation to the audience but at lunch mentioned to me that a plan is being formed and requires as much input as can be gathered in order to ensure a positive result.

- Bruce Vincent – Communities for a Great Northwest

Bruce is from a logging family in northwestern Montana near Libby. His family had built up the business to 30 employees and were stewards of the forest in that they planting 6 trees in place of each one harvested. Then all the environmentalists stepped in with great campaigns and broke their company. Bruce has several degrees but never lost his common sense. He talked about how things are put to the public to get the desired result of a vocal few. Perception of city folk is there is rural destruction of the environment. City folk, after a holiday in the country, want to holler about how to preserve it. He spoke about the ways that forest are managed and that left alone pine beetle outbreaks would thin the trees properly – pine beetles attack where trees are competing and in stress. Big money is made by selling fear and non-profit organizations push for it. He talked about how polling works to achieve the answer the organization paying for the poll wants. There is a saying that “the truth will win out” – no it won’t. It is what the people think is true that will win. He maintains:

- Democracy will work but it is not a spectator sport
- If the people lead, leaders will follow
- The world is run by the people that voice their opinions

He spoke of the dismal amount of people that vote or help in any way to improve things. His tips are: humanize, empathize and educate. This is a brief recap of Bruce’s message and in my mind he has figured things out to a tee. He suggested a book to read, written by himself and a co-author: Against the Odds - \$12 from Amazon.

This was an excellent conference with many adverse views and thought provoking speakers.

Including Sainfoin in Pastures
February 28, 2018
Grimshaw, Alberta

Garry Candy

This was organized by the NPARA and PCBFA. Nora was the MC and introduced each speaker, giving a brief bio of each.

- Dr. Surya Acharya – Research Scientist and Forage Breeder – Lethbridge Research Centre

Dr. Acharya has been studying forage crops for over 20 years including a lot of work with Sainfoin. He spoke about different varieties of Sainfoin and concluded that the older varieties of Sainfoin in alfalfa crops (NOVA) would not increase but rather decreased its volume with alfalfa: it did not survive well in alfalfa and had minimum tolerance for repeated cutting and grazing. His breeding goals with Sainfoin were to:

- Have the ability to survive in mixed stands
- Adapt to frequent cutting and grazing

They planted Sainfoin in between rows of alfalfa, not with it. After 3 years the plants were harvested. They came up over many years – a variety call Mountain View which will survive in mixed crops and will withstand cutting and grazing. Sainfoin is a legume plant with a tap root with nodules much like turnips. Test have shown Mountain View populations can produce biomass as alfalfa and it replaces NOVA. Alfalfa and Mountain View Sainfoin compliment each other – years ago this was called a nurse crop but plants don't nurse each other. There has been extensive testing and the majority of testing has been done as to the effects of grazing alfalfa and Sainfoin to prevent bloat in alfalfa. I asked what the TDN (total digestible value of nutrients) was in Sainfoin. At that time, he had no answer to this as the research was to prevent bloat. He did come to me later in the day, gave me his card and asked me to email him and he would provide me with the nutrient scores.

Another variety that is equal and better than Mountain View is being registered called Glenview. Testing for bloat is difficult as they cannot use intact animals because bloat can kill them quickly. They have to use cows with a vent already installed that can be removed to drop the pressure or it can blow out on its own. He spoke about people saying to avoid no till and broadcasting costs on pasture – rather feed seeds to animals and let them reseed it. They fed 10 kg of Sainfoin seeds to animals but they only got 3 plants. Seeding rates would vary but the mix would be 50-50 with alfalfa.

To control weeds, he suggested cutting early – what we used to call clip cutting.

- Grant Lastuka – Southern Alberta

He spoke about 10 acre plots in different areas in southern Alberta and up north. they are testing ability of Sainfoin and legume plants to fix nitrogen in the soil. Nitrogen is needed as fertilizers and helps plants water – 1# of nitrogen will return 20-40 lbs. of dry matter. High legume pastures have been proven in:

- 2004 - 25% more grazing days with high legumes resulting in 31% more profit/acre compared to tame grass alone
- 2013 – 57% more grazing days – 92% more profit/acre with high legumes compared to tame grass alone

- Christine Jones – Manning Research

We are light farmers – converting green to profit. Perennial pastures require many species. She cautioned producers about the danger of bloat and suggested a product called Alfasure – this reminds me of a product called Silent Herder – also touted as preventing bloat. The pasture testing and experimentation with legumes is partly funded under the Growing Forward Project and is designed to improve profit and reduce risk. Profit is above the ground – wealth is below. When seeding any forage seed, firm seed beds and accurate shallow depths are necessary as well as high seeding rates. Sainfoin and Cicer Milkvetch are not only good for the soil but under the right circumstances will self seed.

- Sandra Burton – Peace Country Forage out of B.C> Resiliency of Forage Lands. Co-workers – Tanya Holmes and Glen Hogberg

3rd project initiatives;

- Improve productivity
- Manure distribution methods for profit
- Legumes for pasture
- Develop prototypes
- Evaluate

Aim is to test rotational grazing and bale grazing and evaluate the soil quality and manure. Composting manure and turning or mixing – 8 to 10 times for testing.

Alternative legumes were tested in 3 strips:

- Grass and alfalfa
- Mix or blend
- Birdsfoot Trefoil

Trefoil yielded as well as alfalfa – the mix was higher and Trefoil worked well in acidic soils.

- Fred Schnieder – Pouce Coupe

Fred ran some test plots with Sainfoin. The seed bed was sprayed out with Round-Up, then 2 passes with a heavy disc and 2 passes with a Lemken high speed disc. Seeded June 17 into damp warm soil – showed impressive pictures and touch up seeding was done October 26.

- Sabrina – NAPRA – Fort Vermillion Research – introduced Dicky Dreidger, a farmer from La Crete.

In his test plots, the site preparation was harrows and packers before seeding with on row packing at seeding. He used pelleted seed May 10. He had to spray for Lygos and cutworms using Matador. The plot looked great by August – grazed into October on 10.2 meter squared fields.

- Bob Noble – Jacknife Creek Ranch

He did a pre-seeding burnoff. In 2016 he seeded June 10 – 3/4" seed depth into moist soil followed by heavy rainfall. 28 lbs. of alfalfa and Sainfoin – 4 lbs. of orchard grass and 10 lbs. 46-0-0. It was drowned out because of the heavy rainfall, reseeded but was drowned out again. Left in for 2016 but grazed in July 10 to 15, 2017 by 110 pairs on 11 acres. The only concern was scours but no proof as to the cause.

- Sean McGrath – Vermillion/Lloyd area

85% of his pasture land is native grass. He is experimenting introducing legumes – at this time, clover and alfalfa. The results have been positive. He has been seeding scarified seed with 20 – 30 lbs. Nitrogen

Very informative sessions and a day well spent.

Beef Country Beef and Forage Association
Annual General Meeting
February 23, 2018
Fairview, Alberta

Garry Candy

The meeting was held at the Dunvegan Motor Inn and included motions to be voted on first:

- Board members to be allowed to serve 3 consecutive 2 year terms rather than the 2 at present – Carried
- Raise membership rates from \$30 to \$40 - \$140 for a 3 year membership – Carried

Four board members were at the end of their terms – Thomas Claydon, John Prinie Ferron Steffers, Jordon Barnfield and Garry Guntler. Iolene Beamish was moving out of her role. Thomas, Jordon and John were acclaimed; in voting between Gurtler and Allan McLachlan resulted in Allan as the new board member.

Akim gave a report on the testing they are conducting and over the 3 years showed rejuvenation in forage areas and creation of new areas. Bale grazing was shown as superior resulting in better use of feed, control of manure and resultant soil enrichment. His full reports are available from PCBFA as are the minutes of the meeting.

PCBFA are hosting a soil health series:

- Part 1 – February 1 – Cocktail Covers
- Part 2 – March 29 – St. Isadore
- Part 3 – June (TBA) – Grazing
- Part 4 – July and August (TBA) – Cocktail cover tours – Fairview and Hines Creek

There will be a Soil Health School in TeePee Creek in early August. There is a new soil sampling lab opening in the area.

Woodland Caribou Recovery

March 6, 2018

High Level, Alberta

Garry Candy

I attended the meeting pertaining to this recovery plan in High Level. The Federal Government has placed caribou under Canada's Species at Risk Act and asked the province to come up with a plan.

The meeting in High Level was to begin at 3:00 pm and last until 8:00 pm. I arrived early and entered the convention centre at 20 minutes to 2. There were people setting up stations around the room and only 3 or 4 tables with chairs. After I signed in on the list, I asked where the speakers would be and was informed there were to be no speakers. One was expected to speak to several parks members at the different stations.

I staked out a spot at one of the round tables that had 2 copies of the Alberta draft plan (not to be removed from the area) on it, placed my books and jacket on the chair to ensure a place to sit.

When I saw a couple of people speaking at a station displaying maps, I asked if I could join them. They were Debbie Jabbour (MLA for MacKenzie County) and Brian Makowskie (Executive Director of Planning - Alberta Environment and Parks). Brian was explaining to Debbie how some of the areas would be changed. We were then joined by Alden Armstrong, a Metis from Paddle Prairie. He is well educated, well travelled and is Executive Director of the Metis Settlements General Council. He had a number of thoughtful questions for Brian and Debbie with whom he had worked or had meetings on several issues.

Asking Alden to join me for a coffee, we headed for the table I had secured. We were soon joined by other people including Robin Steeweg, a Biologist with Alberta Parks. With this plan to satisfy the Federal Government, 65% of land in identified zones would basically be turned back and left undisturbed for the future.

Alden asked Robin if they had done any research around the world where animals were protected and people's livelihood was affected. On Robin's answer of "No", Alden informed him that the plans had all failed miserably. Alden also mentioned that his niece and her husband live in High Level and are considering putting their house up for sale before property values drop.

I asked Robin:

- How many caribou are there?
 - Robin: I don't know.
- How fast are they declining?

- Robin: I don't know.
- What is the main reason for the numbers of caribou decreasing?
 - Robin: Wolves
- How does filling in a cutline or keeping people out prevent wolves from killing caribou?
 - Robin: Cutlines make it easier for wolves to get around.

About that time, another couple came, Bob Freeland and his wife, who operate an outfitting and guiding business in the Chinchaga region. The outfitter and his wife have trapped, hunted and guided for 40 years and injected that wolves don't like caribou and vary rarely will eat them. They have observed instances of seeing a wolf pack take down a moose beside a caribou herd. Bob said he has watched 3 herds of Caribou in his area over the 40 years; they do a short migration route and the numbers in the herds vary little from year to year.

He also offered Robin the opportunity to come up and he would show them the herds – they would have to be prepared to walk, not try to fly over in a helicopter. He also said the main predator of caribou is the bear and particularly the grizzly which he says the government did not count in his area; he knows there are over 50 of them and again offered an invitation to take him out and show him. Robin did not, at least at that time, take him up on the offer.

Bob said that the oil boom in the Chinchaga was now over but while it was on, there was no effect on the number of caribou in the region.

Both Alden and Bob suggested that closer monitoring of the numbers, do a very in depth study of predators and revisit the plan in 3 to 5 years since we were told that once the plan was put in place, it would be there forever.

When I asked if the government had asked for input from business as well, I was told that lots of CEO's, etc. were in favour. When I remarked that I have seen no quotes from anyone in business either in favour or not, the answer was that these people don't like to be quoted.....

A gentleman from La Crete bluntly asked:

- Is this information that the government will now consider or is it all fluff and the government will do what they want anyway?
 - Robin: No answer

Although this was advertised as being an information session, I came away with more questions than answers and feel that there was not enough information regarding the specifics of the Alberta draft plan. Although there are many good things in the Plan, the lack of specific numbers in herds in each of the areas makes me think that not enough research in that area has been done. The method of gathering information from the public could have been addressed more effectively by having knowledgeable speakers to explain and then a well organized question period as well as a chance for discussion and input,

PRFSA Peace Country Forage Seed Association – Seed Production

March 14, 2018

Rycroft, Alberta

Garry Candy

Tobin Dirks – President PRFSA opened the seminar at 9:00 am and gave an overview of what the day would be.

Doug Thiessen – Fosters Seed; a creeping red fescue remains strong and has been a stable in the Northwest Territories

- Perennial rye grass is up and down, not bad now. Kentucky Blue Grass is in short supply, Tell Fescue K31 from Missouri is in short supply and prices are up. Annual rye grass although, in too much supply in the past is nowhere close to meeting demands and as a consequence, prices are up.
- In speaking about supply and demand, he referred to Brazil when coffee prices were low in the 1970's. they burnt a lot of the production and as a result, created a shortage whereby people over bought and this resulted in a shortage and higher prices.
- Perennial rye grass has decreased in price as there is lots of product but it is of low quality. Over 10 years, Creeping Red Fescue supplies and demand has been down – 2017 had the lowest amount of harvest acres and was basically sold off the combine. 2018 will see 60 – 80,000 acres in production, an improvement but not huge. Turf grasses are all up about 20% but freight costs to New York are expected to increase substantially.

Heather Kerschbamer – Golden Meadow Seeds

- She gave updates on forage and legumes;
 - Brome is coming off high prices because of a shortage, at one point it was over \$3 per lb. However, there was a good crop last year and prices are now about \$1.25 per lb.
 - Meadow Brome is flat at \$1.40 per lb.
 - Wheat Grass has stabilized at \$1.60 - \$1.70
 - Slender Used is up to \$1.25
 - Orchard Grass now contracts at \$2.00 per lb.
 - Timothy Grass is currently low at \$.25 per lb. but is coming around

Calvin Yoder – Forage Seed Agrologist

- Alsike has shown good overall yields whereas Red Clover yields are up and down
- Establishment of crops should begin with clean fields. His trials have proved that wheat is the best companion crop, next best is peas. Wheat should be seeded and the clover broadcasted; 1-3 lbs. for Alsike; 2 – 5 lbs. for Red Clover. Apply herbicides pre-seeding such as Heat or Conquer.
 - Ensure when purchasing seed that there are no weed seeds mixed in
 - Watch chemicals closely with Sweet Clover
 - Basagren and Viper can be used
 - Put bees out in mid-June with 1 -2 hives per acre
 - Dessicate clover with Reglone 10N

Keith Carroll – Pedigree Seed Inspector

- He spoke about isolation in forage seed crops – like a buffer to avoid spraying and particularly combining mix-ups. He suggested a 50 meter isolation barrier.

Dr. Nitya Khonal – Research Scientist – Beaverlodge, Alberta

- Spoke a great deal on soil and plant nutrition and claims you need not go to higher than 65 kg/acre with fertilizer. Crops need to be seeded at the right time, right source and have the right crop rotations
- The best results have come from broadcasting seed into a no till and using lime. He also like using manure as it is rich in phosphorous. He says they still have more questions than answers. An integrated cropping system management approach seems to hold new promise

Bill Biligatu – Plant Breeder, University of Saskatchewan

- Bill began in a forage breeding program that has been running since 1950
 - In 2014 the Crop Development Centre involved 300 people including 8 crop breeder and 2 pathologists. Their breeding research:
 - Hybrid Brome
 - Meadow Brome
 - Crested Wheat
 - Dual Purpose Hybrid Brome – AC Knowles and AC Success

- They were involved in testing Biomass yields and seed yields as well as NDF – previously TDN for nutrient digestibility and leaf diseases in Crested Wheat Grasses as Parkway, AcGoliath and Kirk
- The testing at Beaverlodge is on Orchard Grass and looks at winter survival rates and carbohydrates
- Sainfoin forages do well with no bloat issues and less methane is given off by cows. The seeds are larger than alfalfa seeds by 6 times. Pollinators for Sainfoin are honey bees, bumble bees – leaf cutters are used mainly in Alfalfa

General Elections for the PRFSA were then held with election of one new officer and financial statements were reviewed. 2017 saw 48.5 million lbs. of seed sold.

Alfalfa Seed Production

March 15, 2018

Rycroft, Alberta

Garry Candy

This seminar covered alfalfa seed production from establishing to protecting stands as well as control of weeds and placing leaf cutter bees.

Calvin Yoder again started off the meeting and performed the introductions.

Nancy Johns – Agronomist from Eastern Saskatchewan

- With her family she farms 5500 acres near Watrous. She believes in watching her weather station so as to determine when bugs will appear.
- She maintains weed control starts with a clean field and listed chemicals that can hurt young growth:
 - Authority, Barricade and Command
- Chemicals she recommends to use for control of grassy weeds:
 - Assure II, Clethodim and Post Ultra
- Registered products for established stands include:
 - Besegren B, Broxynil B, Odyssey B, Poast and Quizel
- Products for weed control in spring include:
 - Viper – used early in crop growth and one case along with UAN will cover 40 acres; the crop will yellow off slightly
- Control in dormant alfalfa in the fall include:

- Volterra (1 case per 160 acres for broadleaf weeds using non-ionic surfactant), Velper (\$35 - \$40 per acre will cause some yellowing and has some residual), Authority (do not use supreme), Bromoxynil with Perdnor (spray in flower on a hot day with a regular water rate will eliminate cleavers and thistle)
- Diseases to watch for:
 - For leaf spot and stem rot use early fungicides such as Priaxor, Headline, Quadresma Quilt and Fortelis
 - Root rot – watch for side growth – to check, cut stem in half
 - Sclerotinia – little mushrooms can tell you if you will have sclerotinia – white mould
 - Botrytis – from July 20 to August 14 you may see white flecks on the flowers under the canopy. This can be devastating but hot dry weather with wind will kill it.

Jennifer Qtani – Beaverlodge Entomologist

- Some pests to watch for:
 - Arthropods – weevils in pea leaf, clover leaf, clover root and alfalfa
 - Cutworms – army, pale western and dugy
 - Aphids – pea-spotted aphid and two spotted spider mite
 - Plant bugs – lygus, grasshoppers, leaf hoppers and spittle bugs
- Economic thresholds for alfalfa
 - Control methods for seed – cultural (burning), cultivator, biological (fungi) and pre-bloom chemical
 - Pollinator awareness – honey bees, leaf cutter bees, bumble bees and solitary bees
 - Considerations regarding chemical control – residual, registered or not, covering shelters for bees, evening applications when bees are inside shelters
- Timing:
 - Early - Pea leaf weevil larvae feed on the nodules of all legumes
 - End of June – pea or spotted aphids (look like little water bags) and lygus bugs (look like aphids) – keep an eye on them in July
 - Grasshoppers (Migrating or Bruner) spray when young in age

- Jennifer is a wealth of information and can be reached at Research Beaverlodge

Brad Alexander – Research Extension Manager – Alberta Alfalfa Seed Commission

- He spoke about care of leaf cutters as to insects.
 - Alfalfa Weevils – spray on warm days (20 degree and above) with Malathion or Matador
- He showed burning an alfalfa crop or better scorching it with a large pull behind propane burning outfit. It looked like it was done in southern alberta because they were driving in rows. The machine is called the Red Dragon. The fire scares the weevils out and the smoke from the smoldering kills them.
- Regarding Bees
 - Canadian cocoon testing – parasites lay eggs in the bee larvae and the babies eat the bee – Vapona strips are the only control method
 - Require an availability to water – with no water when born, 50% of females will die within 24 hours and 50% of males will die within 72 hours
 - Feeding – in the 1st 7 – 10 days, feed Agar-Agar and Bee Fudge – bees will grow larger, reproduce better and have a stronger immune system
 - Chalk-brood disease – shows up as a white powdery look and mould in the cells. The bees themselves do some housekeeping in locating and removing mummies – normally drop them on the hive floor or just outside but then the spores can be take back in. the disease can start because of high and low temperatures with bees bringing it in. all mummies need to be removed and burned. Cinimon stops its growth and proper disposal of cocoons is most important.

Calvin Yoder – Spirit River Research

- They are currently doing a lot of work with turfgrasses (world`s largest market), forage grass seeds and legume seeds
- Main cover crops are wheat and canola
- Firm the clean seed beds and seed:
 - Red Fescue – 1 to 5 lbs. per acre
 - Timothy – 1 to 2 lbs. per acre
 - Brome – 2 to 4 lbs. lbs. per acre
 - Perennial Rye Grass – 4 to 5 lbs. lbs. per acre

Jennifer Otani

- Research in Grande Prairie (Beaverlodge) is coming up with a calendar date book for when to look for insects
 - Pea leaf Weevil – attracts all legumes, eats the nodules. Look early for bites out of nodules and also report them – you will receive help in deciding what you have to do. Presents concerns for bees in Red Clover – first year is no problem but later years will produce more bugs
 - Scout for cutworms end of April into May – early mornings or late evenings. They will be relatively shallow – she says lots of producers dig holes a foot or more deep and bring all that soil to be tested by this is not needed.
 - Other bugs to watch for are Hymenopteren, Silver Top, European Skipper and Midge
 - Matador is being reviewed by Health Canada presently
 - She has put in a request for 2017 peas stubble in the Fairview area to check for bugs
- Check out the website – www.prairiepestmonitoring.ca

Soil Health Part 2 Workshop
March 29, 2018
St. Isadore, Alberta

Garry Candy

Darryl Chubb – Integrity Soils

- Filling us in on his background, he talked about travelling extensively in the world studying farming practices and soil compositions.
- Spoke about the Nuffield group that provides scholarships for people with an agricultural background, 25 – 45 years old to go for 10 weeks to study then return and share their experiences speaking at various agricultural venues. They are advertising for applicants on the radio right now.
- Darryl grew up on a farm in Saskatchewan and has worked at and managed farms in Alberta. Presently he lives east of Airdrie on the edge of a gravel deposit and has worked with Nicole Masters and Gabe Brown at various times
- He stressed there is no silver bullet in getting healthy soils – you have to consider new ideas and try them out on a small scale first.
- Good soil health has the capacity to sustain biological productivity and maintain plant growth. We must have goals; to meet these goals there must be management and equipment as well as testing and measurement while recognizing the limiting factors and variables.
- For soil to be healthy, physical, chemical and biological properties are all intertwined. Sugars are needed to feed the plant; oxygen is needed for the plant microbes to breathe. Swath grazing is excellent for SOM – soil organic matter, and provides plant and animal residue – humus and carbon.
- We need
 - Soil bacteria involving the oldest most nutritious organisms
 - Actinomycetes - bacteria that grows hyphae like fungi that decomposes
 - Arbuscular Mycorrhiza Fungi (AMF)
 - Glomalia – high in carbon
- Plants that cause Mycorrhizal colonization are oats, flax and corn – all legumes. Brassicas, mustard and stinkweed will have nematodes (round worms). Protozoa are the smallest single cell animals.

- Overtillage results in high rates of nitrogen and tight soils – low diversity can add to soil degradation.
- There is a major requirement to feed the people – 7.6 billion in the world at present, predicted to be 9.8 billion by 2050.

Gabe Brown – Bismarck, North Dakota

- Spoke a great deal about profit first, not yields and pounds. Profit starts with the soil. He is one of four producers with the same type of land and climate and has been watching the management of each.
 - First uses high tillage and high diversity cover crops
 - Second – minimum till but no diversity
 - Third – no till for 20 years planting corn, sunflower and beans using high rates of synthetic fertilizer
- These three have no livestock nor do they rent livestock. The fourth parcel is Gabe's – he uses no synthetic fertilizers and integrates lots of livestock. Water extractable organic carbon is the good that microbes live in.
- Soil tests on the four locations were for the highest plant useable amounts of nitrogen, potassium and phosphorous.
- His focus is on microbial involvement to wake up the nutrients in the soil
 - Carbon into top soil
 - Regenerative grazing
 - Soil should be able to absorb 2 inches of water in 25 seconds – plants use the water leaving the carbon and oxygen
- He claims the deserts were manmade through agricultural practices. Carbon is the key driver for soil moisture retention. Carbon levels cycle as to plants growing stages
 - Correct fungal and bacterial ratios are critical for plants and seedling. A 1 – 1 ratio of F/B is ideal – even one application of compost helps moves to the fungal side of the ratio.
 - Healthy soil itself will add nitrogen naturally with the Glomelin (sticky stuff) and Hyphae. Keep living plant matter on the soil as long as possible, not bare ground. His drill follows the combine – nitrogen helps the release of carbon. The more seeding of plant varieties, the better. This improves the biomass, optimizes solar energy collection. Plants will leak up to 30% carbon into the soil. Ratio should be 24 parts carbon and 1 part nitrogen. Livestock is the answer for soil health – he has built his topsoil to a depth of 18". He has done this by turning a

large number of animals into small paddocks when the second crop is tall for a short period of time allowing them to eat the tops off, trample the remaining into the ground and distribute manure.

Jim Garish and David Brandt from Ohio will be in Manning for 3 days in August for SARDA.

Sarah Hayward

From: Beverley Candy <gbcandy@outlook.com>
Sent: April-10-18 10:40 AM
To: Audrey Bjorklund; Sarah Hayward
Subject: Report
Attachments: Soil Health 2.doc

Hi

Here is my report from St. Isadore. Also at a previous meeting on Sainfoil, I had asked Dr. Acharya what the TDN of Sainfoil was. He said he did not know at that time but has since sent me the following email:

Sorry Garry for the delay in replying to you.

Sainfoin TDN is very similar to alfalfa. At prime cut it varies between 61 to 65 whereas alfalfa is around 61.

It was nice meeting you.

Best regards.

-Surya-

Dr. Surya N. Acharya, Ph.D., FICN

Research Scientist (Plant Breeder), Chercheur (Phytogénétique)

Agriculture and Agri-Food Canada/Agriculture et Agroalimentaire Canada

Telephone/Téléphone: 403-317-2277

Facsimile/Télécopieur: 403-382-3156

Teletypewriter/Téléimprimeur 613-773-2600

5403 - 1st Avenue South

Lethbridge, Alberta

T1J 4B1

Thanks

Garry

Sent from [Outlook](#)

Cereals Innovation Symposium

By: MacKay Ross

Cam Dahl, Jason Lenz and Kevin Auch, from the Cereals, Barley and Wheat Comissions

Russia/Ukraine wheat exports have increased 10x in 10 years. Export Barley to Japan has been taken over by Australia, and they are targeting China imports as well.

Canada sends full value chain representatives, so all questions, from farm to boat can be answered.

Winter 2013-14 freight issues are still costing Canada in international trade.

Italy used to import 25% of Canadian durum. Actively blocking trade due to glyphosate and using COOL.

China likes the looks of 12% protein and awnless barley varieties.

How to Produce Marketable Malt Barley. w/Kevin Sich

Distance is a significant factor, not much sense growing Malt in the peace.

Domestic malt market is flat, exports are there, but lower price.

Copeland variety is dominant, but could be replaced by AC Connect due to fusarium resistance, Synergy is growing for seed sales.

High protein (which is common in the peace) is not wanted. 10.5-11% protein is the target.

New varieties will Chit/germinate very easily.

Fusarium in beer results in gushing bottles when opened, same result as shaking the bottle.

Breeding CPSW cultivars for western Canada w/Dr Harpinder Singh Randhawa

Yield, protein, lodging resistance, fusarium resistance, semi-dwarf to medium height (straw) are targeted attributes.

Fusarium Head Blight losses of \$59-300 million per year. Approximately \$60 million in loss from wheat midge.

Genomics cost coming down so it's used now.

Breeders use New Zealand test plots to halve the time to propagate generations.

Plant 215 seeds per m² in tests, 300 or more per m² recommended for farmers.

Advanced agronomic practices in Malt Barley w/Dr. Breanne Tidemann

Looking for varieties that produce less protein with normal nitrogen use.

Below 50 lbs per acre will decrease the chance of too high protein, and helps with plump seeds.

Plant Growth Regulator's (PGR) didn't significantly affect stand height, lodging resistance, plum or yield and same or longer maturity.

Consistently risky to use PGR. Glyphosate as desiccant resulted in yield increases of 15%. Minimum

Residual Limit almost always low enough, but Industry doesn't want any glyphosate residue on malt barley.

Best Management Practices to Support Ultra Early Wheat Seeding w/Graham Collier

0°C-10°C on 2°C increments, no significant yield difference in 2-6°C soil temp, 8°C might be a pivotal temp, do not seed warmer than 8°C if possible.

Seeding depth 1-2" no difference in yield until 8-10°C soil temp.

Alberta has already seen a 7-10 day increase in frost free days, in the future 7-12 days earlier seeding may be the norm. Information based on 1981-2010 climate change data in Alberta.

Early seeding carries a risk of double seeding. But moisture, growing degree days, early canopy, longer vegetative growth period, longer grain filling, avoidance of pests, distribution of seeding/labour time, are all benefits. Seeds must have seed treatment.

Next experiment will be, make a whole farm plan around the ultra early seeding system.

Wheat breeding w/Dr. Curtis Pozniak

Yield, yield stability under pests, environmental stress and marketable wheat are the targets.

Genetic yield potential is about 125 bushels/acres currently. Agronomy adds to that (how?).

0.6 bushels per acre yield increase per year for the last 40 years.

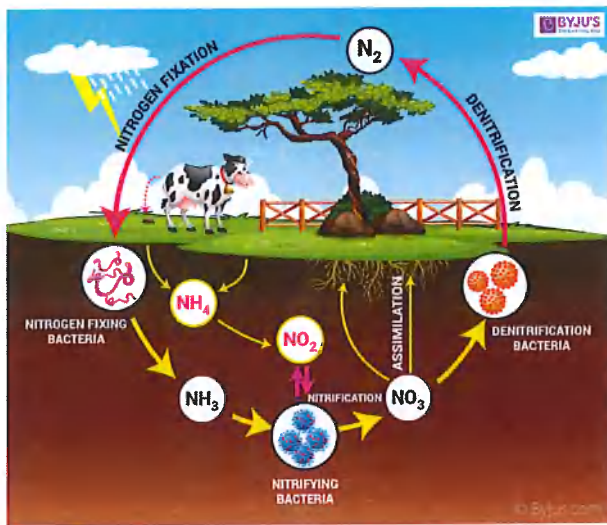
80,000 test plots under his research institute.

Genomics has become fully usable.

Most traits are a genetically complex, they don't want an experience like the GMO back lash. As always, will customers purchase it.

Hybrid wheat is less than 1% of planted, only 6% heterosis, 9% expressed yield increase. Still have Ergot issues. Physical traits help with FHB resistance but FHB can easily/quickly adapt to those changes, stacked genomic traits will be harder to adapt to.

Nitrogen Fixation in Triticale w/Dr. Alicja Ziemienowicz



Canadian farmers are using 3x the Nitrogen as they did in the 1980's.

Claims 50-60% of applied N is actually used by crop. This is the highest usage I have heard of outside of a sales rep's pitch.

Researchers are taking genes from bacteria which use the nitrogenase enzyme to convert airborne N to plant available, and splicing it into the plant. However by tying the gene in to mitochondria, the bacteria DNA expresses itself and the plant cannot self repair properly. Used triticale do to its reception of 10x the spores as wheat. If it works, it will be "simple" cross breeding to transfer ability to wheat.

Innovation in Breeding a 10,000 Year Old Crop. W/Dr. Yadeta Kabeta

Barley is one of the oldest domesticated cereals, it is diverse and resilient.

Breeding objectives; yield, quality, resistance, agronomic (lodging), sustainable production (water efficiency etc).

Malt variety "Lowe" is new and should be tested in the Peace to access malt market.

6 row varieties are achieving plump and resist lodging, putting them back in the malt market.

Closing w/Tom Steve

Thank you's.

Agronomy Update 2018 Red Deer Jan 9-10

Step back from the trees to see the Forest w/Emile deMilliano

Risk and risk takers, farmers will "seed" \$200/acre and consider it "business as usual" but won't invest 5% as much in the stock market. Risk means different things to different people.

Always consult Ropin the web for probability of response before applying anything to your soil (phosphorus, boron, etc).

We don't spend enough time understanding the soil under our feet. The 2 most used tools on a farm should be the soil probe and spade.

Understand the impact of weather (I think most farmers do) over half of yield variability is due to weather variability.

Blend science with practical experience, research information needs practical integration.

Decades of direct seeding has made nitrogen response curve info obsolete.

2018 will see the rise of the robots (DOT, drones, Google earth imagery, etc).

Optimizing management and inputs for top Yields w/ Dr. Ross McKenzie

Climate records Alberta is a great resource for climate history, climate averages have all increased (frost free days, corn heat units, etc)

How carefully do you look at your soil? Alberta soil database will give you insight into your soil. Set goals on the soil you have, know the variation in your fields.

Stored soil water + precipitation = the major crop yield indicator. The higher the SOM the more precipitation the soil can hold, the higher the yield.

Good rotations increase yields and improve soils, 4 year minimum.

Stand establishment is one of the best yield management tools. Seed at the early optimum, (more on this later in the conference) losses of more than 1% per day in yield, can result due to late seeding.

Lack of soil microbes decreases nitrogen plant availability.

Band in Nitrogen in the fall, less than 7°C soil temp, broadcast is maximum 40% efficient with urea inhibitor, again, band it in.

Foliar Nitrogen application is less than 5% efficient. Band ESN in wet soil, for late deficiency.

Recommended the "Modified Kelowna" soil test for Phosphorus in Alberta. Seed place as much Phosphorus as is safe.

About 20% of Alberta is K (potassium) deficient.

Elemental sulphur 0-6" depth is usually low, apply a little even if 6-12" or deeper is sufficient, this will supply plants till the roots through the first 6".

Boron testing is unreliable, often over recommended.

Potassium, Sulphur and micro summary, educate yourself.

Walk your field to make decisions, once a week.

Identify and counts for insects (or weeds or fungal risk) to identify economic threshold, why spray if it is cheaper not to?

"Healthy crop has a higher risk of disease." I found this was a very strange thing for Dr. McKenzie to say, wouldn't a healthy crop have less risk?

Use unbiased info to make decisions, not salespeople's claims.

Long term management effects on crop yields and soil Nitrogen cycling w/ Miles Dyck

No-till for more than 6 years decreased the need for N by 40-50 lbs per acre. Long term experiments are needed to show management effects.

Breton plots, since 1930, have shown many long term management effects.

Recommended lime when pH of the soil drops below 6, to get it back to 6.5.

Manure best for Carbon and Nitrogen in treatment and rotation plus legume/long rotation. But not the best (average) in yield, a close 3rd and barely statistically significant, compared to 2nd. Manure has a lower NOS (Nitrous Oxide) to atmosphere compared to yield.

Balance of nutrients increases Nitrogen uptake.

Growing red lentil in Alberta, how are they different than pea. W/ Robyn's Bowness Davidson

Similar to pea but the differences are significant. Some areas will grow peas but not lentils, sandy or sandy loam, lentils don't compete well, and farmers can't spray lots of lentil specific weeds.

Seeding rate can vary .8-1.6 lbs/acre, 11-12 plants per square foot is the target. Land rolling is key.

Phosphorus is important. Inoculate! Can't beat the symbiotic N production from bacteria. Up to 15lbs N (seed placed) to start helped most times.

White mold, spray fungicide before canopy closure, more likely in wet, higher clay, high OM (organic matter) soil.

Harvest; short but doesn't lodge, lifters help, store at 14%, but harvest at 16-18% to save on handling damage. Lower pods ready first, desiccate with Reglone as lentils need the speed, glyphosate is too slow.

Bug Roundup w/Scott Meers

403-376-2970 text insect questions. Think about beneficial insects, before you spray.

Diamond back moth 3rd generation in one year is the problem, results in shatter not true yield loss.

Their cycle has decreased from 51-21 days. So far they are south of TransCanada (Hiway 1).

Cutworms have lots of natural enemies, do not spray if you don't have to.

Flea beetles, early seeding decreases treatment efficiency, resulting in thin stands.

Bertha army worm is at an all-time low.

New canola midge (flower midge) parasitism is keeping populations down, it might transfer and attack sweet midge.

Wheat midge forecast for peace is low for 2018, dry spring will result in the midge staying in the soil.

Wheat stem sawfly, dry August increases population.

Cereal leaf beetles, controlled by Government of Canada released parasitoids.

Bruner's grasshopper is the key species in the Peace country, looks like 2018 will be low.

Cabbage seed weevil so low in southern Alberta in 2018 lots of producers didn't spray

Pea leaf weevil update w/ Dr. Meghan Vankosky

Pea leaf weevil, low but has a 2 year fluctuation. Add legume smell to pheromone traps in the fall. Terminal leaf damage indicated pea leaf weevil when scouting sites, but won't touch lentils. Nodule damage (untreatable) by larva, results in as high as 27% yield loss. Rotate, plant in no-till, inoculate. Some small beetles eat eggs in lab settings, large beetles in the field eat adults (beneficial watch pesticide use).

Pesticide Re-evaluation in Canada w/Andrea Sawatski

Re-evaluation to ensure efficacy and side/adverse effects, which currently is a 15 year cycle. Ingredient not product (glyphosate not Roundup).

Enhanced efficiency nitrogen fertilizer: what when where. w/Tia McClellan Maaz

Combines right source, time and place. Polymer releases over time, Urease combats hydrolysis, Nitrification limits leaching, combinations thereof have the potential to minimize loss in a farm specific situation. Manure has lower GHG (greenhouse gas) emissions. Polymer can be placed in seed row, mixed with uncoated fertilizer, has even more benefits.

Crop Availability of Sulphur from Elemental Sulphur Sources w/Dr. Kent Martin,

Sulphur deficient plants show yellow leaves, check fresh growth, if green the deficiency has been solved. Sulphur doesn't come with rain (acid rain) from industry anymore. Elemental doesn't leech and is slower to correct deficiencies, so don't over apply and apply small amounts in following years. Small particles size is important. Water, air and microbes are needed to make ES (elemental sulphur) plant available. Urea-ES product has great potential.

Alleviating Subsoil Compaction w/Dr. Tom Jensen

Pore space is key, microbes need a sub aquatic (air and water) environment. Granular (aggregated) soil has best infiltration of water and air. Dry soil tilled will break large aggregates, wet tillage compacts, damp soil tillage can break lumps to increase aggregate. But that perfect timing is a challenge. Most compaction happens in harvest due to limited time to get the work done. Deep root plants, controlled traffic, tracks/fat tires, subsoiling are the tools to correct compaction. Spring subsoiling appears to be the best timing. Prairies are lucky as the freeze thaw breaks up compaction. Is that true in the peace country, does that depend on soil type?

Reducing N and P load in water bodies. W/Trevor Deering

Manure management, cost of hauling and incorporation. Manage the risk of Leeching.

Apply manure based in phosphorus content not Nitrogen content.

Map property to establish where and when to spread manure, and some grazing planning to avoid freshly applied manure.

Industry update:

Bayer w/Sheldon Toews (Taves)

Bayer label changes. Olympus pre emergent wheat herbicide tank mix with glyphosate. Retails in 2019; Prosaro XTR available 2018, leaf and head disease suppression, leading to higher yield (2.2% gain, is that statically relevant?).

FMC w/Sonia Matuchuk

FMC bought some dropped products after Dupont's merger.

Nufarm w/Greg Collier

Label updates. Fierce herbicide launch and available 2018. NipsIt SUITE seed treat, fungicide and insecticide.

Dow/DuPont w/Shawna Hogg

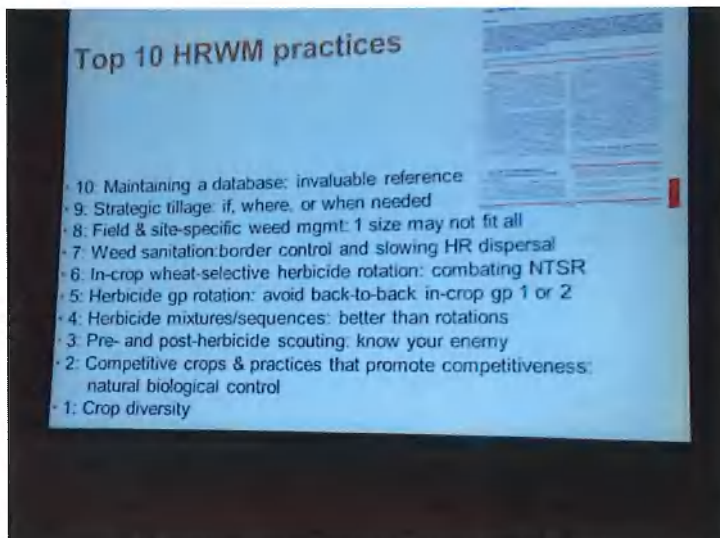
Label updates; added control or suppression of specific weeds and new tank mixes.

BASF w/Malorie Aube

Inoculate launch, 4 new fungicides, label updates.

Wild oat Herbicide Resistance: few active groups left. W/Dr. Hugh Beckie

76 HR weeds in Canada, according to his map, at least 1 case in Clear Hills County.



46% of Alberta farmers grow canola every other year rotation.



Tools for Weed Resistance Management w/Eric Johnson

One shot weed control in pulses unlikely concept in the future.

Talked about possible future herbicides that are currently in submission for registration. Most are "old formulations" that just haven't been registered in western Canada.

Injury to cash crop is going to be common in weed control, but yields will be largely unaffected.

"Focus" on cleavers is effective if <6% OM (organic matter) is present in the soil.

Quote "We need to stop looking to herbicides to fix a problem caused by herbicides." By a Professor in Wyoming. Dicamba resistant soybean is here, however Dicamba does nothing to RR volunteer canola.

Dicamba in soybeans w/Dr Tom Wolf

Releasing soon in Canada due to HR. 1/30000 of label rating will show symptoms on soybeans but may not result in yield loss. Extreme application rules. 100% spray overlap.

Can vapour drift wet or dry 3+ days after application. Restricted applicator status in the US.

Inversion serious issues. 80% chance every night.

Glyphosate Resistant Weeds in Western Canada w/Dr. Charles Geddes

Low cost since 2000 has depressed new herbicide invention. 5 GR weeds in Canada, 1 in Alberta, which is kochia. Multiple use per year especially post emergent application.

40 GR worldwide. Increase diversity in all aspects (rotation, usage, etc) to delay GR.

Up and coming problem weeds in agronomic crops w/Nicole Kimmel

Lambs quarters seed is viable for up to 1700 years!

1.25" long by 3/8" dia Canada thistle root will regrow for up to 100 days.

New; Marsh Willowherb, field violet, marsh cudweed, yellow cress, tumble mustard, nodding thistle, garden Orach.

Loss of sensitivity to fungicides in field crops. W/ Dr. Bruce Gossen

Disease management should be mostly finished before planting. Rotation, genetics, scout.

Fungicide use has tripled since 2006-2016. Viticulture resistance first, extensive field resistance last.

5 years of fungicide use, results 90+% fungicide resistance.

Need to develop low cost local lab usable pathogen tests.

Effective long term if used minimally.

Overview of cereal disease. w/Dr. Kelly Turkington

Barley; scald, net blotch, spot net blotch, spot blotch(same fungus responsible for root rot), fusarium head blight. Wheat; spot blotch, tan spot, stripe rust, fusarium. 2 year crop rotation is not enough time. 2018 could have diseases like 2016 or even worse if the same crop is planted. Stripe rust usually blows in from Washington but can overwinter. Field scouting important.

Canola Disease Update w/Keith Gabert

Sclerotinia, clubroot, blackleg, unfortunately crop rotation doesn't affect sclerotinia.

Think of clubroot as a soil disease not a canola disease.

As little as 2 crops of GMO canola and it can be susceptible to clubroot.

If we are serious about clubroot we will cut canola acres.

Every "little hammer" must be used to slow/reverse clubroot.

Pulse disease update w/Dr. Syama Chatterton

Root rot is most common, fusarium, bacteria blight (plants will grow out of it), Mycosphaerella blight.

Lentils, the diseases are coming.

Alberta's fusarium infection risk assessment tools w/ Ralph Wright

Rotation, stagger planting dates, can spread to adjacent fields. Used weather stations from around the province and a formula (borrowed from Sask and MB) to computerize hourly risk assessment.

Weatherdata.ca

On a trial basis, it is a decision support tool, not decision making tool.

Aerobiological surveillance of wheat pathogens w/Dr Andre Laroche

Adhesive microscope slide in field for a week then magnified to check for spores, not a great measurement tool. Burkard cyclone collects and tube is collected and examined weekly, is far more accurate. 6 wheat pathogens tested for, must correlate to economic threshold for each. Significant link to environmental conditions.

Craft Beer Update w/Bob Sutton

Craft brewers buy 23% of malt in n America. 10x the GOP usage. 50% market share by 2025

Farm Tech 2018

Domore.ag foundation for mental health in farmers.

Future of Consumers w/Darrell Bricker

We don't know our consumers in our own country, let alone the world.

Fertility/aging are key, it takes 2.1 births per family unit to maintain a population.

Population looks to peak at 9-10 billion and then decline to 7

Kids today are projected to live to 100 on average, currently it is 81.

More people over 65 than under 15 for the first time ever in Canada, also we have 7900 people over the age of 100.

4 workers per retired dependant right now, 2036 will be close to 2.

The group with high net worth is the 55-65 year olds.

Urbanization, 2014 was the first time the world's population was urban positive, rural is losing population everywhere.

We are west focused and pacific oriented country instead of eastern Canada and Atlantic focused.

Half of the population in Toronto was born in another country.

Transition to a new mindset, more women living on their own, young and old, and loneliness is increasing.

Increasing generation divide; intolerant, opinionated, demanding, difficult, describes both.

Hockey needs to find a way to attract young fans, basketball has them.

Current generation is being loaded with crushing debt and broken dreams; university education with little value, get rich quick is not a new phenomenon but is highly visible due to social media, consume consume consume, we are increasingly credit card indebted.

7 management BMP w/ Heather Watson

Continual learning.

Decisions based on accurate financial data.

Seek help.

Have written business plan, follow it, review it annually.

Know and monitor cost of production, and what it means for net profit.

Assess risks and have a plan to manage and mitigate risks.

Use a budget and financial plan to monitor financial position and options.

Pledgetoplan.ca

CTEAM program under agrifoodtraining.com provides management lessons for producers and ranchers.

Communication is key in HR (human resources).

Collaborative management is increasing.

People are the asset to any business, not the equipment!

Know your numbers and keep them accurate and up to date

Face to face monthly meetings, not just to discuss production etc.

TURNING UP THE VOLUME; rebuilding consumer trust in food and farming w/Cherilyn Nagel

How to engage with consumers in a meaningful way.

Farming is now a privilege, it used to be a right.

Recommended "The Dust Bowl (2008)" documentary.

Direct seeding reversed the carbon output of agriculture, but we didn't tell anyone.

Recommended therealdirtonfarming.ca an online magazine, also farmfoodcaresk.org.

Consumers want; healthy, affordable, safe food that is sustainable and promotes animal welfare.

Agriculture is so technologically ahead of the perceived view by consumers, that they have no concept of what we are doing.

Shared values increase trust 3-5x more effective than facts.

"They don't care how much you know until they know how much you care." Theodore Roosevelt

Listen, don't try to change their mind.

Make it a conversation not a food fight.

Have fun.

DIY Agriculture Technology

Open source precision agriculture does not exist, it is corporate led technology not producer led.

Agricultural open source gps may be available.

You can code whatever you want and build almost anything for reasonable capital cost.

Ardino micro controller is the inexpensive key to operating a unit.

Pixhawk is an independent, open hardware, flight controller.

Swift navigation, is a low cost RTK GPS over the counter system.

One of the presenter's pictures had the GPS antenna mounted as far rearward from hitch as possible.

ROS Agriculture, rosagriculture.org, is a site to research robot operated systems used in agriculture.

Work Life Balance w/Dr. Duxbury

There is no work life balance in agriculture. Unless agriculture is your life which leaves no time for family, friends etc.

Four types; role overload, work interferes with family, family interferes with work and care giver strain.

Farms need studies to show the true impact of lack of work life balance in agriculture.

Current rural studies show rural areas have a far too high of stress levels in all areas.

Farmstrong survey of 2015 in New Zealand showed a need for producer supports and continues to improve to provide those supports at farmstrong.co.nz. Article "change or die" discusses the choices people make when confronted with a decision (usually their health) to significantly change their life of continue down a short set path. Possible fixes; do what only you can do, delegate the rest, don't micromanage, schedule 10 minutes every 2 hours for breaks.

"To do" priorities first, list gets thrown out at the end of day, be realistic.

Remember that every hour you cut out of a night sleep, is one shot of alcohol equivalent impairment.

Don't confuse busy with productive.

Young farmers 35 and under strive for completion of work not perfection, acknowledge their method.

Farm tax update, focus on new income splitting tools. W/ Allan Sawiak CPA

Corporate rate is going down slowly but the personal dividend rate is going up.

TOSI (tax on split income).

Under 25 inheritance of private land don't have TOSI

Issues if more than 10% of assets are not farm related, especially on a death of a partner.

Anyone receiving shares must be working 20 hours a week during period of production, for the current year, or any time in the last 5 years or factual rule involved, management or other part of the farm business. Document as it applies for life.

Issues when active dad leaves to inactive mom then leaves to child, child does not inherit dad's active status but mom's inactive status.

To get out of TOSI; Both spouses work more than 20 hours more than 5 years, contribute capital, incur risk, active spouse must be under 65.

Other businesses, even if a farm is subject to TOSI. So farm loans "hold corp" then pays dividends to owners.

The 4 factors apply back to beginning of the business.

Planting green and soil health principles w/ Jay Fuhrer

Winter results in less mineralization meaning more OM generally.

Simplifying of rotation to soybeans which has low C:N (carbon: nitrogen) ratio.

Residue for armour and cover crop to absorb some of the CO₂ that is being released by the residue.

Soil Armour, minimize disturbance, plant diversity, livestock integration, continual live root/plant.

1/3 of Carbon is in seed, 1/3 in leaves etc, 1/3 in root mass. Even with roots, 2/3 of the carbon oxidizes to the air after plant death.

Grazing increases soil life 1.6x ungrazed cover crop.

Grow out the water in wet areas, don't evaporate it out.

Plant small grain family, with fibrous root to grow aggregates.

www.menokenfarm.com

Wild and Wacky weather w/ Drew Lerner

www.worldweather.cc

2017 cold pool of water in the gulf of Alaska same as 1988 and 1961. Looks like 2018 will be similar.

Jet stream has an 18 year cycle, we are back at 1999-2000 storm direction.

Spring near to above temp but potentially below normal precipitation Early summer warmth, June/July, instead of August/September but higher moisture than normal. If India gets 1/2" in February in the south where the peas are grown they will have a good crop year.

Scott Meers recipient of Farm Tech Award 2018 "It's easier/faster to just do something than it is to ask permission."

John MacLean from Australia, "How far can you go?"

Para athlete, para Olympian, Iron man (Hawaii, the big one!)

Be present in the moment. Let go of the past.

Can you win with the cards you are dealt.

Don't give up on yourself, challenge yourself.

TABB; "Think" let go, "Act" play at the part, "Believe" in yourself, "Become" the part.

Targeting Global Goals w/Robynne Anderson

World hunger has reversed and been on the rise since 2015.

UN sustainable development goals, are they actually sustainable?

At least half of the worlds farms are not affected by soil degradation.

No ground water level loss over 5 year average.

Nitrogen concentrations in water are below 50mg/L.

"Shannon evenness" index above 0.3.

Nitrogen usage has increased 9x since the 60's in the last 10 years, our Nitrogen leaching into water has increased to "moderate" levels.

We are in "moderate zone" in the biodiversity ranking.

www.emergingag.com

What farmers need to do to maximize returns on crops w/ Marlene Boersch

More bans due to pesticides, protectionism and Russian grain production. Exports 9x in the 15 years.

New Silk Road from Europe through Central Asia to central China one rail line.

Russia/China focus on lower cost freight, Canada focuses on profit for each part of the freight train.

Biodiesel production has plateaued, if it is banned in new production vehicles in the EU, it will halve.

US protectionism fosters other countries to do the same, hurting Canada.

World carry over of wheat is 133% of 3 years ago.

Market is getting bigger but Russian lower cost grain is more than filling it. If TPP is passed \$65/mt tariff will drop but Australia as well.

Yellow Mustard shows a shockingly high return of 2-3x input costs.

Barley supplies are low yet demand is slowly climbing.

Soybean production and demand have slowly increased at the same time.

Flaxseed production keeps dropping, but prices are stable with carryover low.

Russia gets product to market, EU/Asia before we harvest.

A 25% drop in pea acres would ensure decent prices for remaining production.

Stephen Harper

Big trends in global trade, unstable in western countries, far right and nationalism. The forces that destroyed the USSR is still at work and eroding power in the western world. Trump, Brexit etc, have been condemned by the experts yet happen anyway. 2008 bailouts have poison people against established political power. Businesses will have to increase relationships not concentrate on contracts only.

From Sweden with Clubroot w/Dr. Ann-Charlotte Wallenhammar

Sweden found clubroot in 1980's, they have a long history of growing brassica, their studies show club root survives for 17 years in soil, half-life of 3.6 years (so 4 complete years of no brassica in rotation minimum).

In the 1870's was the first description of club root, in Russia

Oilseed rape was brought into Sweden after WWII and by 1970's encouraged to grow at a 1 year in 4 rotation. Rutabaga (a Brassica) was commonly grown for centuries before.

A Soil Ph>7.0, moist, and a temp of 20-22°C is optimum for club root growth.

Yield loss before harvest can't be seen.

Even 1 in 5 year rotation is unable to stop club root expansion, doesn't decrease spore count.

Research into resistance started in the 1960's, used resistant varieties in the 1990's and 2013, then saw new outbreaks.

Resistant cultivars still produce galls and spores just less yield loss, total resistance loss in 2-3 years.

Tips; Seed at lower soil temperatures, Manage volunteers, Avoid soil dispersal, Lime only works pre infection.

Permaculture Conference

Rob Avis w/ Verge permaculture "Why your farm exhausts you, and isn't making money."

"Rule of thirds" in business the gross profit is made up of; sale, reputation and work.

Sale; finding a customer that is a "fit" for you and your product, consumers want convenience and a polished sales procedure but not an ingenious sales person, show differentiation from other similar products, price the product to the highest point based on Reputation and Work, "Products at most small farms are sold at 50-66% of possible sticker price."

Reputation; Farmers are highly respected so that is a good start, having coffee with customers even once a year goes a long way, take risk away and show skin in the game (buy back guarantee).

Work; farmers have this in spades, however efficiency is important, near equal time should be split between work and sales/reputation, statically 20% of the effort produces 80% of the results, so focus on what actually makes money.

Farmers don't realize how rare they are, "What is real is rare, what is rare is valuable."

Green house info w/Wendy Smith of "Rural Roots" magazine.

Tomatoe seeds in peat pods, in 500ml size pots, leave the pod at the bottom and cover stem of tomatoe with dirt as they grow. The melon and parsley seeded pods need to be lifted when filled with dirt.

Dig an inch down, pinch the soil and squeeze tight if moisture is evident don't water.

Powdery mildew solution; a spray bottle 1/4-1/3 skim milk, fill the rest with water, spray plant and soil too.

Peerless Farming w/Rob Avis

Permaculture saying, "100 hours of thought 1 hour of work" not the other way around.

Lean manufacturing is an example of "permaculture".

Plan primary interests; water, access and structures last.

Do a sector analysis; wind, sun, (all seasons), dust, etc.

Negative feedback, shows poor management or poor planning, creates waste/pollution.

1 extra work is a failure in design.

2 when the needs of the system are not met we pay in energy and pollution.

3 pollution is an unused resource.

4 all elements should serve multiple functions.

5 all critical functions should be met by many others.

An example is; Stinky compost, a sign of poor management, run it properly and have it close by.

Remember principle is key, the technique is secondary.

Optimize edge, surface area (leaf area of multiple species of plants in the same square meter).

Beavers optimize by expanding the edge of the waterbody, aquatic zones are 28x more productive than terrestrial zones.

Find the intersection of land (native potential), personal skills, work, bioregion/market

Mantra; we will be profitable and not subsidize the farm, we are indifferent to the sale/we will not pitch, we are selective about our clients, (the clients must be a fit, their ability to pay the price can be taken into account, if you are profitable you can afford to be generous), our client process is smooth.

Growing the North

Chris Fields "5 Ways to create the exceptional."

Only 25% of eligible voters, voted in the last municipal election. We have become to assume that someone else will do everything.

Thanks to the internet, we are more connected to someone across the world than a next door neighbour whose name we don't know.

Learn to compromise to the aspirations of the visionaries, do not compromise to the naysayer.

Step up in the building of community.

Sadly, the average Canadian has an 8 second attention span.

What makes a community is the 5-10% "fun" but we focus on the basics.

60-70% of happiness is choice which requires 20% engagement and 20% meaning.

\$70,000 is the plateau of money centric happiness.

We all have an obligation to serve for future generations.

If we all did small things, everything would get done.

Find the portion of the future that fits you and embrace that change.

It is easier to be the same, also it is boring.

Focus on the important, drop worry, concentrate on death bed important things. Listen to the optimists.

95% of choices are emotional, make important decisions, use emotion to elicit adoption.

People have a 576 mega pixel eyeball, that's why great photos are so important.

Don't use numbers, (18 holes of golf vs the feel of a good shot on the 7th hole) use feelings, smells, etc.

Community building is all about the people, then the place and lastly a stable economy.



Broad band internet has become a utility not just a service.

People want quality of experience.

Embrace diversity, it attracts energetic people.

Mission, purpose, direction, do not lose focus due to distraction.

Create an elevator pitch.

Adrenalize your brand.

Put personality to the product.

The high 5 rule; how do we excite the silent majority to get more work done?

Garth Braun Business model to encourage innovation.

Innovation, creative thinking, and differentiation.

Innovation must be driven from the top in a corporation, recognize opportunity, interact with society and resource, interact with current technology.

Currently only 6-8% of hydrocarbons are being extracted from shale.

Condensate has nearly 3x the value of oil.

Government should encourage any industry that will eliminate imported products, keep the money and work here.

Get together with other "competition" to insure this region maintains the advantage over other areas.

Measure the social value.

Focus on the secondary and tertiary benefits to a transaction.

Realize the opportunity.

Glen Nevokshonoff; Seven Generation

Number 1, serving the needs of our shareholders.

2:1 debt to asset ratio, maximum.

Consider distance, sometimes doubling the distance will have a premium to cover costs and increase net profit.

Data analytics shortened completion drilling by 85%

Len Morissette CIA media company

Over come the fear to pursue what you want to do.

Education can support innovation.

Unity and equality is the goal to create strength.

Alberta trade minister.

62 million in tax cuts to companies has resulted in 1.2 billion in investment and 3000 jobs.

Emily Salybury-Deveaux

Love to learn how to do things.

Execute and get measurements.

Retail apocalypse, huge vacancies, but growth is there, just not in bricks and mortar.

Automation is taking over.

Fear of losing market share causes bad decisions.

Fear costs money.

Too much trend following garbage that isn't selling, stock what consumers are actually buying.

Human density drives retail, not urban vision.

Companies simply follow each other, if the town has a Subway, then A&W will take a look, then McDonalds, then Timmies, then Home sense, and on it goes.

"This open space" is the "Airbnb" of commercial space.

Considers Gluten Free a trend that is dying.

West Edmonton Mall has started renting out short term pre-built space for retail start-ups which elevates initial capital and risk. Even hosts RAAS university to give retail hopefuls training in setting up and operating a business.

Co-retail, where two businesses occupy the same physical space, is becoming more common.

FCC (Farm Credit Corp) w/Marty Seymour

We can't sell to other countries, the products we would buy off the shelf, we must grow and sell the products they want. Food storage is the largest problem in most of the world.

Experience is no longer an advantage it only makes you an expert in the past.

Virtual shopping is the next step in online shopping.

We eat every day, so big companies are picking up food companies (Amazon/Whole Foods).

You don't have to have the latest tech but your competitor will have it.

Smart farming, data and tech manages agriculture.

Robot fruit pickers, automation is going to change agriculture.

Google wants driverless cars so people can surf the internet more.

The toy industry commercializing products (drones as toys) has decreased cost to make it available for agriculture.

Decentralized data, increases sharing, and provides redundancy.

Coding will be key, the tool for automation.

Compared CRISPR-9 (gene editing) to plant breeding only nearly instantaneous.

Artificial Intelligence will process the big data that farmers will be collecting on our farms and making connections we wouldn't dream of.

Cam Battley w/Aurora Cannabis

Purchasing companies all over the world and setting up medicinal Cannabis grow ops in other countries.

Cannabis is a symptom management aid, simply not in mass use as it can't be patented so big pharma won't spend the billion to get it approved.

Opioid causes more deaths in Canada than motor vehicle collisions.

Canada is leading the world in public policy and production, dropping prohibition of Cannabis.

Dr. John Gilliland One health, from Soil to Society

Over the last 40 years Northern Ireland has become wetter and milder climate.

Devenish nutrition (us.devenishnutrition.com) is a company dedicated to soil health, which grows plants high in nutrients, raises healthy livestock, to feed people nutrient dense food. "You are what you eat, Eats!!!"

The commodities market is a race to the bottom, the higher the yield the lower the value and profit.

Omega 3 absorb in the intestine, so pills do virtually nothing.

Plants indicate the nutrient balance in the soil.

[OBJ]

"Dwarf" gene was introduced in the 1950's which increased yield but decreased nutrients per acre.

Put our environmental footprint on display, show we are benefitting, not hurting the world.

Watch phosphate levels.

Improving the environment (micro, local, national, worldwide) is a net profit endeavour.

6m buffer at water edge is not strategic placement, find water runs and establish riparian buffers.

Devenish is using trees to increase CO2 sequestration and increasing grazing by 17 weeks per year due to soil water usage by those trees.

Don't settle for commodity agriculture, pursue the consumer that wants the environmental and health benefits of good food.

Carol Ann Hilton Indigenomics (Indigenous + economics)

Applying indigenous experience with new technology.

Lifting indigenous peoples out of poverty is beneficial to all Canadians.

Jonathan Banks Future Energy Systems; specifically geothermal.

3km deep to reach temperatures high enough to boil water or heat other fluids to turn turbine for electrical production.

Surface less than 50m depth is solar heated soil not geothermal.

Geothermal electrical plant in Hinton could produce 10% of Alberta's power and reduce CO2 emissions by 30 MTs per year.

At high temp locations could power Edmonton with electricity (600MW).

Low temp locations (60-80'C) if technology can produce electricity from it, would be 5MW.

Marg Mcquaid-Boyd MLA and Energy Minister

GPRC has been given a significant step towards becoming a university from the province.

Alberta has contributed 22 billion to Ottawa above what we get back.

Bruce Vincent

200 year management plan 6 trees planted for every one they cut down.

97% of logging companies are family owned.

We (any resource industry) operate under public trust, we must cultivate social licence.

Collision of visions. Urbanites want to save the rural areas but forget the rural people.

There is a fine line between environmental security and environmental insanity.

Environmental social movement has learned to seek fear not environmental safety.

Every day is earth day when you are a logger/farmer.

Visuals are 85% make sure the "truth/middle ground" is poured into social media devices.

Do not confuse the two, fighting is not leading.

3 truths about leading; Democracy works, but is not a spectators sport, When people lead, leaders follow and the world is run by those who show up.

Tips; Humanize, not agribusiness but people and family. Empathize understand the expressed concerns of the people. (Environmental issues in the industry/out green the posers) "I am listening, I understand, I respect your concerns, I own the environmental issues in my industry."

Activism, 1 hour a week, wherever possible.

Smart people with education are returning to apply the science with their hands to the farm/energy/forestry/mining resources.

J.P. Gervais, Global Economic Outlook

Lowest unemployment since 1976 within Canada, job production is still high.

Household debt is overblown, but is still growing too quickly.

The US pulling out of TPP has actually increased Canada's access to Asian markets.

If we lose NAFTA do we fall back to FTA? If so it is not much different, just no dispute resolution.

Canadian oil price differential (meaning we get paid 60% of what it is worth) is large but if trans-mountain pipeline goes ahead that will shrink.

Canadian dollar expected to stay in the 0.70-0.79 cent range.

Agriculture has been growing its gross income for the last decade but the future looks slow.

If companies want to survive, food retail is key.

Erin Bury, Thinking like a millennial.

Know your Millennials, they were born between 1981-1996.

5 things Millennials look for in workplace; digital/mobile used to having the first off everything, social/offline community (corporate culture, community connection in and out of the office), flexibility, feedback/education (career ownership, how to climb the ladder), meaningful work (social purpose of the company, ecofriendly).

5 things Millennial consumer want; mobile/digital ability to demand everything (not wanting to talk to a human, easy intuitive mobile, especially a website must be mobile friendly), "wealth easy" social/off line community, (journey to zero waste FB) Focus on experiences not things (they rent everything, want to travel), purpose over profit (50% buy from socially responsible companies).

Keys to selling to Millennials; 1 go beyond traditional benefits, 2 define purpose, 3 be where customers are (mobile), 4 don't try too hard (slang targets teens not M).

Darby Allen, Firefighter from Fort Mac

It's the little things that make the difference.

4 major benefits that prevented disaster during the fire; Safety culture (almost everyone is industry trained), Timely decisions (and a little luck), Twinning of highway (the year before allowed mass evacuation), Actions if regular people (everyone stepped up).

However; they totally underestimated the effect of Pets both transportation and those left behind.

Reiterate optimism, always, both verbally and with body language.

Agriculture finances

FCC

Young farmer (under 40) loan; lower interest rates, 20% down on land instead of 25%, waived fees, and option of deferment once every 5 years.

Transition loan, allows gradual disposition of sale/purchase to family or others for up to seven years.

Finance vs lease calculator, is available on their website.

ATB

Discussed required financial statements, sole proprietor must show tax return and a balance sheet.

Incorporated farms will need to show tax return, balance sheet and notice to reader, for less than 2 million. For more money, more paperwork which equals more accounting time and fees.

Business plans become important to persuade banks to loan money, but ratios (debt-asset etc) are key.

Will take 25% collateral instead of cash to acquire loans.

"Evergreen" is a pre-approved loan for the year, one time application.

Leasing options available for structures, grain bins are not linked to the home quarter so new bin yards can be set up anywhere.

RBC

Leasing available on structures and bins. Lease costs can be expensed on tax for 20 years, virtually no tax. Minimum 3 tax years (Dec of 2018-Jan of 2020 for example), decreases taxable income. All about Tax efficiency as opposed to simple depreciation.

Banks will optimize loans to suit your tax situation, dealers just want the sale, talk to your bank.

Banks can talk to your accountant to make it work with current depreciation pool/tax position.

Leases can be renewed at the 3 year mark to continue use if you choose.

Also works on (with pre approval) auction sale purchasers, let the bank purchase it from the auction company to leave loans in the auctioneers hands.

Buildings must be bolted to the concrete however pre cast are leasable.

Will also loan on private sales, but more due diligence is required.

Panel of the presenters

Because we do so much online, it's even more important to have a relationship with your lender.

Banks like accrual statements to take out fluctuations, minimum 3 years, agristability shows this if your tax isn't set up as accrual.

Business plan templates on ropintheweb.com, FCC, RBC also have links online.

Take home; plans never work out so keep your head up and let lenders know the below average return plan, more information to the lender the better to assure and excite (engage partners), keep lenders up to date (honest) to keep them from getting surprised.