



Grain, Grass & Growth June 2015

www.chinookappliedresearch.ca

CARA Welcomes New Conservation Technician



Olivia Sederberg is originally from Southern Alberta, growing up on her family farm just outside of Seven Persons. Her strong passion for the industry stems from her family farm that has been in operation since 1910. Having grown up around cattle & irrigated specialty crops Olivia knows the importance of conservation for future generations.

Olivia attended Medicine Hat College in the Environmental Science program and then transferred to Lakeland College and recently received her Agribusiness Crop Technology diploma. She is hoping to

bring fresh ideas to the team and learn some new things in the process. Olivia has recently moved to the special areas and is very excited to be joining the CARA team.

She will be taking lead on CARA's conservation programs including riparian health assessments, mulch and shelterbelt demonstrations, environmental efforts and biological control of Canada Thistle project, just to name a few.

You can visit Olivia at the CARA Center in Oyen or reach her via (403) 664-3777. or email cara-3@telus.net.

Meet Our Field Staff



L to R: Jerry Pratt, Karen Raynard, Danny Rude and Janelle Hawkins calibrating the plot seeder; Kale Scarff

In This Issue...

- Growing Forward 2 Update
- An Unseen Threat – Old, Unused Wells
- Pasture Management
- ATCO Farm Safety Tips
- Pest of the Month: Cutworms
- Saskatoon Juniper Rust
- Soil Carbon – What is it?
- Calendar of Events
- ...and much more!

Growing Forward 2

Program Spotlight

www.growingforward.alberta.ca

Food Safety Systems Producer

- Now accepting applications as of April 22, 2015
- Can qualify for 50% of eligible costs up to \$5,000

Eligible Activities:

- Livestock squeeze with neck extender
- Scales
- Milk guards
- Electronic animal thermometers
- Computer software for tracking animal health

Producer Qualifications:

- Must be a primary agriculture producer
- Must be enrolled in your specific On-

Farm Food Safety Program (OFFS). Some OFFS examples are:

* **Beef Producers:** Complete the online course, webinar, or in-person Verified Beef Production workshops to qualify. For more information visit: www.albertaqualitybeef.com

* **Sheep Producers:** Visit www.cansheep.ca and enroll online or complete an in-person Producer Training Session.

* **Dairy Producers:** Visit www.dairyfarmers.ca to register in the Canadian Quality Milk Program

* **Hog Producers:** Visit www.cqa-aqc.com and register in the Canadian Quality Assurance for Canadian Hog Producers Program

There are also OFFS programs for broiler hatching eggs, cervid, chicken, grains, horticulture and turkey. Visit www.growingforward.ab.ca for more information.

On Farm Energy Management Program

- Now accepting applications as of May 19, 2015
- Can qualify for up to 50% of eligible costs to a maximum of \$50,000. See funding list as on website as cost share changes per project type.

Eligible Activities:

- Building wall/ceiling insulation with R25 value or greater for new construction or addition to older facilities
- Energy efficient windows (U-factor of 0.3 or lower)
- Building under-slab or foundation insulation
- Lighting with minimum efficiency criteria (see funding list for details)
- Natural gas boilers/ furnaces/ radiant tube heaters for retrofit projects
- Variable drives for pumps, fans, compressors, conveyors and material handling equipment
- And much more! Visit www.growinforward.alberta.ca for more information.

An Unseen Threat – Old, Unused Wells

From Alberta Agriculture's Agri-News

Some rural Albertans may be living with a health hazard on their property and they don't even know it.

Surface contamination poses one of the biggest threats to the purity of groundwater supplies and old unused wells that are not properly decommissioned can serve as a conduit for bacteria and chemicals to seep into an aquifer. Once there, it is often very difficult and very costly to restore an aquifer and make well water safe for drinking.

Perhaps the best known incident of this type of water contamination occurred in 2000 in Walkerton, Ontario, when surface runoff made its way into an adjacent well that had been known for years to be vulnerable to contamination. About half the population of the small rural community became ill and several people died when the groundwater became contaminated with deadly E. coli 0157:H7 bacteria. The entire incident might have been prevented if steps had been taken to

avoid contamination in the first place.

"Having an old unused well on your property is a little like having an open wound on your arm," says Chris Gerritsen president of the Alberta Water Well Drilling Association and an advocate for the Working Well Program. "Old open wells are a place where contaminants can gather and get into the aquifer. Sometimes an old well can contaminate a new one, so it's the first question I ask when someone is having trouble with the water quality of a well."

There are regulations in place that require landowners to plug old unused wells, but there are still many properties around Alberta with abandoned wells on them that pose a physical safety threat and provide an avenue for groundwater contamination. "It costs money to properly plug a well and people don't always understand why it's necessary to do it," says Jennifer Macpherson with Alberta Environment and Sustainable Resource Development and the Working Well Program. "It's in the regulations and it's in the landowner's interest to plug an old well. Properly plugging an old unused

well prevents it from contaminating groundwater and potentially affecting any new wells. The time to plug an old well is when you are drilling a new well."

Properly plugging an old well is best done by a licensed driller or at least supervised or advised by an industry expert. Putting a cap over the top of an old well may eliminate the physical risk it poses, but it doesn't prevent entry of contaminants, and an unused well creates the perfect breeding ground for bacteria to grow and infect the aquifer below. Private well owners are responsible to make sure the groundwater is protected from contamination and remains clean and pure for their own use and for generations to come.

Online resources and free community-based workshops offered by the Working Well program provide well owners with the information and tools they need to properly care for their wells. For more information, contact one of Alberta Agriculture and Rural Development's agricultural water specialists at 310-FARM.

Join Us for a Day of
Stockmanship with Curt Pate
Big Stone Rodeo Grounds
Friday, June 19

9:30 - 3:30 pm



For more than a decade, Curt Pate has been conducting demonstrations and clinics on stockmanship, starting colts, horsemanship and safety. His abilities conducting both horsemanship and stockmanship demonstrations along with his ability as an effective communicator have made him a sought after clinician both on the national and international scene. *For more information on Curt Pate please visit www.curpatestockmanship.com*

Agenda

9:30 am Registration
 Growing Forward 2 Update
 Curt Pate Classroom Lessons:
*Animal Behavior, Sustainability
 and Consumer Satisfaction*
 1:00 pm
 Curt Pate Live Cattle Handling



\$30 (\$25 for CARA members)
Includes Lunch
 Pre-registration is appreciated
 Please call (403) 664-3777
www.chinookappliedresearch.ca

 **Leader Tours by** **North Dakota Soil Health Tour**
 Featuring Brown's Ranch & Menoken Farm
 August 16 - 20, 2015



Join us in the International Year of Soils for a private tour of Gabe Brown's unique operation and the Menoken Farm!

Tour topics will include soil health, multi-species cover crops, carbon sequestration, creating a healthy ecosystem, and eliminating the use of synthetic fertilizers, pesticides, and fungicides

Price (Land Only)
\$815 CAD/person (twin rate)
\$1002 CAD/person (single rate)

Price includes tours, coach bus, hotels, and most meals

Tour departs from Regina, SK. Attendees are responsible for their own travel to and from Regina

Deposit of \$250.00 per person required by June 29
Remainder of final payment due July 13

For more details and full itinerary, please contact: Lawrence Rowley or Sawyer Asmundson at (403) 270-7044 or sawyer@leadertours.ca Cassie Kirkpatrick at (403) 652-4900 or cassie@foothillsforage.com



ATCO Electric Farm Safety Tips

Today's farm equipment is bigger than ever which can mean big problems when you're working around power lines. Contact with a power line can result in damaged equipment, severe injuries or even death, but is 100 per cent preventable. Stay safe with these tips:

1. Check the height of your equipment. If you're buying it new, confirm the height, update your GPS with any changes and consider your route to ensure you can cross safely under power lines. Exercise caution if equipment is higher than 4.1 metres.

2. Stay seven metres away from power lines. Keep this in mind when operating grain augers or air seeders, or when lifting truck boxes or back hoes.

3. Stack and store wisely. Whether it's a grain bin or bale storage, stack and store it seven metres away from power lines.

4. Plan before moving tall equipment. Map your route and locate any overhead power lines. If you don't know whether it's safe to cross under or work near a power line, call ATCO Electric for help: 1-855-277-1670.



Air seeder contacting a power line

For more information on working near power lines safely, visit atcoelectric.com or follow them on Twitter at [@Atcoelectric](https://twitter.com/Atcoelectric).

Trickle Irrigation Systems for Shelterbelts

Olivia Sederberg, CARA

There are numerous types of irrigation systems available to producers. Watering shelterbelts for establishing and maintaining trees and shrubs can be a tricky thing to do when you live in a location that does not receive the required amount of annual rainfall. Flood irrigation or sprinkler irrigation options may not be as efficient as the trickle system.

Some shelterbelt tree varieties have the capability of growing up to 80 ft. tall. These types of trees are ideal to have as windbreaks in the prairies, but their rapid growth can result in the need for large quantities of water (some <400 mm/year). In an area that has an annual precipitation of 315 mm/year, and most of this precipitation coming from snow fall, there is a need to fill the trees' water requirement. By using trickle irrigation (Drip Tape system) you are able to disperse the water in an efficient and long term economically friendly way.

There are numerous advantages of using trickle irrigation such as, lower volume of water usage, energy savings, reduced weed growth, reduced disease, optimum plant growth, and also having no significant runoff resulting in less soil erosion. Even though the start-up costs may be higher, over time the trickle irrigation will be economical and beneficial.

There are many supplies you may need to purchase before starting your trickle irrigation. Start by calculating the proper pipe size, pumping engine capacity and emitter size. By using a UV resistant black hose, (PVC or polyethylene tubing,) you will prevent sunlight from entering, reducing the growth of algae within the hose, subsequently reducing hose clogging. Use of an extremely fine mesh filter is required to prevent clogging of dirt and particles in the emitters. A regulator to control the pressure is necessary to prevent the drip tape from bursting. Supplies such as these are necessities when considering putting in a trickle irrigation system for your shelterbelt.

By using the trickle irrigation method you are able to apply liquid or water soluble fertilizer accurately to the plants. The fertilizer solution is injected into the trickle system with an injector pump, preferably before the filter so as not to clog the

system. Keeping a filter within the system will reduce the risk of fertilizer clogged emitters which will cut down on maintenance time.

If you have any questions on what type of calculations you may require or just knowledge on shelterbelts contact conservation technician Olivia Sederberg at the Oyen CARA office or by email at cara-3@telus.net

12TH ANNUAL SOUTHERN ALBERTA GRAZING SCHOOL FOR WOMEN

DINOSAUR PROVINCIAL PARK
JULY 22ND & 23RD, 2015










TOPICS INCLUDE:

- Grazing Practices
- Range Health
- Plant & Weed ID
- U of A Research Ranch
- Riparian Health
- Riparian Grazing
- Ranching Women
- Aquatic Invasives
- Integrated Pest Management
- Animal Welfare: Jennifer Woods

REGISTRATION DEADLINE: JULY 10TH
REGISTRATION FEE: \$100.00 Meals Included
(Accommodation Not Included)

ACCOMMODATION OPTIONS:
 Camping Dinosaur Provincial Park, \$38/night
 Cabin Rentals, double occupancy \$30/night
 Call Holly White at (403) 633 0352 to book
 accommodation at Dinosaur Provincial Park
 Brooks – 30 Minute Drive

For more information or to register contact
 Amanda Halawell: ahalawell@cowandfish.org
 Phone (403) 451-1182 Fax (403) 274-0007
www.southernalbertagsw.blogspot.ca

Find us on Facebook!
 "Grazing School for Women"

Use the Hashtags
 #RanchingWomen #SAGSW2015



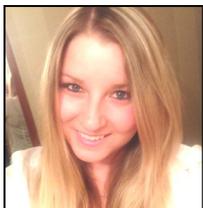









Pest of the Month: Cutworms



*Dara Calon,
Starland County
Assistant Ag
Fieldman*



Overview

Cutworms can be a devastating pest, and there are five species on the prairies which are of economic importance to this area. In recent years there have been higher outbreak levels, and were a serious concern in canola. In canola crops, the pale western and red backed cutworm are the most common species. The small larvae of the cutworm are the greatest threat for damage as they feed and grow.

Did You Know?

Beneficial organisms such as parasitic insects, viral diseases and bacterial infections will enter the population after two to three years and begin to bring the cutworm numbers down. When disturbed cutworms curl up into a “C” making them easy to identify.

Crop Scouting

Minimizing damage is dependent on early detection and field scouting every three to four days during the first few weeks of crop development. Look for bare areas, holes/notches in foliage and plants that are leaning, knocked over or cut off at the base. Determining what type of species of cutworm you have is important, since larval stages vary between species and some are more likely to sever stems and feed than others.

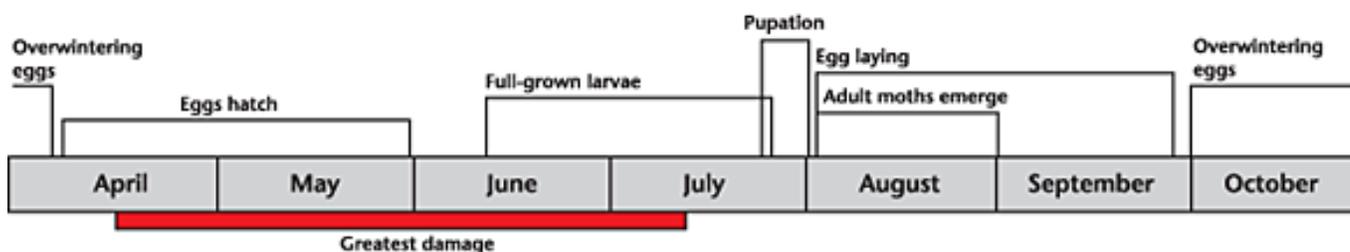
The economic thresholds vary between 1 and 4 larvae per 12 inches of row and will depend on the species of cutworm present. It is also important to determine whether the infestation is patchy or evenly distributed throughout the field. Spot spraying can be an effective method if there are patches.

Life Cycle

One generation per year are produced by cutworm species in western Canada, and adults can lay up to 100 eggs in August and September. The eggs hatch in April/May, and will feed until they complete their larval stage in late June. They then burrow into the soil and pupate, emerging as a moth in August/September.

Control Options

Spot spraying is an option, but timing may be difficult because cutworms are nocturnal. Spraying in the evening also minimizes effects to beneficial insects. You can check if cutworms are feeding by cutting one open and looking for green material. If none present they may be in a molting phase, so spraying may be delayed.



**Stay
Connected!**



@AAAFieldmen



**AAAF Association of
Agricultural Fieldmen**

www.aaaf.ab.ca

Saskatoon Juniper Rust on the Rise

Grain, Grass & Growth
June 2015

From Alberta Agriculture's Hort Snacks

Causal Organism: *Gymnosporangium nelsonii*

Crops Affected: Saskatoon berry, juniper species (alternate host); also causes rust on pears and some other rosaceous species

Disease Cycle:

- 2 hosts required to complete entire sexual cycle
 - cycles between species
 - may increase as specific spore types on each host
- Galls on junipers produce jelly-like orange-brown "horns" in wet springs, releasing spores
 - Typically in May-June
 - Spores can travel several kilometres to infect Saskatoon berry plants
- Leaves and fruit may be infected, causing characteristic swellings and growths
- Infection and spread favoured by temperatures between 10-24°C with wet plant surfaces
- Moist or rainy conditions can increase spore production and spread of infection
- Spores produced on Saskatoon berries will infect junipers, completing life cycle

Symptoms:

Junipers

- Globular woody galls which produce jelly-like spore bodies (horns) after rain

Saskatoon berries

- Early symptoms include yellowish spots and swellings on leaves and fruit
- Swellings grow to become firm spiky outgrowths from leaves and fruit
- Twigs and branches may swell and be distorted
- Orange rusty powder evident on and around outgrowths

Management:

- Avoid planting near native stands of Juniper
- Remove junipers or prune out galls from infected junipers within approximately 1-2 km of orchards – fairly impractical in areas where rust is prevalent
- Apply registered protective controls during late May – mid June

Adhere to prescribed rates and pre-harvest intervals .



Top Photo: Rust infected berries, rust infected spur on saskatoons, Bottom Photo: rust infected Saskatoon leaf

Soil Carbon Challenge with Peter Donovan

Tuesday, June 30
Chinook, Alberta
(6 km S, 3 km W)
10:30 am-3:30 pm

of the | Soil
Carbon
Coalition

Learn how carbon sequestration can help not only mitigate our carbon footprint, but also increase the soil organic matter for healthier, more fertile and productive soils.

Information on Peter Donovan and the Soil Carbon Coalition, please visit www.soilcarboncoalition.org

Cost \$25
\$20/CARA-Member

Pre-registration by June 23
Call 403-664-3777
Email: cara-1@telus.net



Soil Carbon – What is it?

By Peter Donovan, adapted from www.soilcarboncoalition.org

Living organisms contain a fair proportion of the element carbon. So do the remains of living organisms. Some of these remains end up in the soil, processed and decomposed in various ways by fungi, microorganisms, insects, and worms. This **soil organic matter** can be 50 to 58% carbon by dry weight, and some of it can remain stable in the soil for generations or centuries. The vast majority of carbon in the top layers of soil is in soil organic matter. Darwin called it vegetable mould (though he recognized the important role of animals such as earthworms in its formation), and it is also called humus.

Some soil carbon is inorganic, such as calcium carbonate or caliche. Carbonates are typically more prevalent in arid environments, where soil pH is above 7.5. They do not have the water-holding properties of organic soil carbon, but are a significant sink for atmospheric carbon.

Microorganisms can combine the carbon in soil organic matter with oxygen,

creating carbon dioxide. In the soil, oxygen is often limited, especially deep down. When soil is plowed or turned over and exposed to air, these microbes can turn much of the carbon into atmospheric carbon dioxide.

William Albrecht, who was a soils professor at the University of Missouri during the 1920s and 1930s, wrote in the 1938 Yearbook of Agriculture:

"But with the removal of water through furrows, ditches, and tiles, and the aeration of the soil by cultivation, what the pioneers did in effect was to fan the former simmering fires of acidification and preservation into a blaze of bacterial oxidation and more complete combustion. The combustion of the accumulated organic matter began to take place at a rate far greater than its annual accumulation. Along with the increased rate of destruction of the supply accumulated from the past, the removal of crops lessened the chance for annual additions. The age-old process was reversed and the supply of organic matter in the soil began to decrease instead of accumulating."



2015

International
Year of Soils

For atmospheric carbon dioxide to become soil carbon, it first needs to be captured by green plants in photosynthesis. Much of this carbon is released right back into the air by respiration or decay of plant material, or fire. But some of it can become soil organic matter. Perennial grasses, for example, periodically shed their roots into the soil. These dead roots feed complex soil foodwebs, and soil organic matter and humus can be the stable result. Also, these grasses exude carbohydrates into the rooting zone, typically at night, which feed complex foodwebs.

For more information on soil carbon and what you as a producer can do to improve the organic matter of your soils, please visit CARA on June 30th where Peter Donovan will present his Soil Carbon Challenge!

Can't wait? Visit www.soilcarboncoalition.org for more details!

Building Soil - Creating Land (Part 2!)

A Field Day with Dr. Christine Jones

Dr. Jones is returning to Alberta in July for a continuation of her very successful visit to Alberta last fall!

Each event will include a classroom presentation by Dr. Jones on the basics of soil health and the processes that build and maintain healthy topsoil. Followed by a field walk to further explore the communication between plants and soil microbes; assess rooting depth and the effect of land management on plant root growth and function.



Olds	July 23	FFGA
Oyen	July 24	CARA
Rycroft	July 28	PCBFA
Manning	July 29	NPARA
TBA	July 31	GRO
Bonnyville	August 4	LARA
Castor	August 5	BRRG

Cost: \$25/Member &
\$30 /Non-Member

Contact your local ARECA group for more Information and to Register for a Field Day Near You!

For more information on Dr. Christine Jones, visit amazingcarbon.org

For more information about the Agricultural Research & Extension Council of Alberta and its member groups, visit areca.ab.ca





CARA Calendar of Events

Date	Event Details
June 13 Crossroads Center, Oyen	Hanna District 4-H Beef Show & Sale Show starts at 10:00am with sale to follow at 7:00pm
June 19 Big Stone Rodeo Grounds	Curt Pate Stockmanship Clinic Registration is appreciated by June 8th by calling CARA at (403) 664-3777
June 25 & 26 Olds College	AFAC: Technical Large Animal Emergency Rescue For more information visit www.afac.ab.ca
June 30 Chinook	Peter Donovan of Soil Carbon Coalition visits CARA Register by calling CARA at (403) 664-3777
July 14 CARA Center, Oyen	Crop Field Day Register by calling CARA at (403) 664-3777
July 21 Hanna Area	CARA Crop Walk For more information call CARA at (403) 644-3777
July 21 & 22, Lethbridge	Sanfoin Training Workshops For more information call CARA at (403) 664-3777
July 22 & 23 Dinosaur Provincial Park	Southern Alberta Grazing School for Women Register by calling (403) 541-1182 or email ahalawell@cowsandfish.org
July 24 CARA Center, Oyen	Soil Scientist Dr. Christine Jones of Australia visits CARA Register by calling CARA at (403) 664-3777
July 28 Consort Area	CARA Crop Walk Register by calling CARA at (403) 664-3777
August 16-20 North Dakota	FFGA Grazing & Soil Health Tour For more information visit www.foothillsforage.com
December 8-10 Edmonton, Radisson Hotel	Western Canada Conference on Soil Health Registration TBA

Save The Date!

WESTERN CANADA
Conference on Soil Health
December 8th, 9th & 10th, 2015

Radisson
HOTEL EDMONTON SOUTH

2015
International
Year of Soils

Alberta
CleanFARMS
OBSOLETE COLLECTION CAMPAIGN

Coming to
Southern Alberta
in the fall of 2015

Return your unwanted or obsolete pesticide
and livestock medications

Farmers: safely dispose of your unwanted agricultural pesticides
and livestock/equine medications in the fall of 2015, **at no charge.**

A full list of collection sites across Southern Alberta will be posted
on the CleanFARMS website in the summer of 2015.



CHINOOK APPLIED RESEARCH ASSOCIATION

Box 690 Oyen, AB T0J 2J0

Ph: 403-664-3777 Fax: 403-554-3007

Email: cara-1@telus.net Web: chinookappliedresearch.ca

@CARAresearch

Like us on Facebook!

