



AG TALK NEWSLETTER

CLUBROOT INFORMATION EDITON



Starland County ASB Members

Chariman: Murray Marshall
Council Member: John Rew
Council Member: Jackie Watts
Council Member: Bob Sargent
Council Member: Steven Wannstrom
Farm Member: Brian Heck

Farm Member: Kerry Sharpe
Agricultural Fieldman: Alan Hampton
Assistant Ag Fieldman: Dara Kudras
Recording Secretary: Shirley Bremer
Key Contact: Neil Whatley

STARLAND COUNTY CLUBROOT ALERT

On January 11th it was reported that Clubroot of Canola had been positively identified in a field in Kneehill County. This followed up announcements from Rockyview and Northern Sunrise Counties in the fall of 2018. In the past few years Clubroot has been positively identified in several counties in our area including Stettler, Mountainview, Red Deer, Paintearth, Lacombe, Flagstaff and Newell. The map on the front page outlines the counties it has been found in to the end of 2018 with the yellow, blue and red signifying number of fields with infection. You will note that Kneehill is currently showing green but it will be yellow on the next map.

Clubroot is a serious soil-borne disease of canola, mustard and cole crops, and is a declared pest under Alberta's Agricultural Pests Act. It is not a new disease in Canada or Alberta, however, since its discovery in the first canola field near Edmonton in 2003, it has spread to over half of the counties in Alberta.

Why are we concerned? As you can see from the map, Starland is bordering both Stettler and Kneehill counties. Because of our proximity we are likely to get or perhaps already have it and just haven't found it. A meeting I attended in January suggested that the northern border of Starland is already testing positive for the clubroot pathogen, but it

is currently at levels which are unlikely to cause infection. If we combine this information and add cross border farming, wind, wildlife and various other soil movement mechanisms, we would be naïve to think we aren't at risk.

The good news is that I believe we have an opportunity to manage this pest before it starts managing us. The first thing we need to do is accept that we are now farming with clubroot. Let's be proactive and not reactive. If we do a few simple things such as extend our canola rotations (1 in 4 or more), actively scout our fields and take active measures when it is found, include clubroot resistant varieties (particularly if we have been growing canola frequently), knock soil off of our equipment prior to moving to new fields, minimize soil disturbance (pro-tilling), and most importantly educate ourselves on how to properly manage this disease, I believe we will win.

This issue of Ag Talk will focus on clubroot identification, management, & municipal policy and we ask that you review this information closely. We have a huge advantage since we are attacking this pest with the experience of the rest of the Province who have been dealing with, and unfortunately making the mistakes. Let's not repeat their mistakes because once clubroot does become established it is pretty tough if not impossible to eradicate.

For further information please contact Alan Hampton Ag Fieldman or Dara Kudras Assistant Agricultural Fieldman

CLUBROOT 101

What is Clubroot?

Clubroot is a serious soil-borne disease of crucifer crops in many parts of the world. The crucifer family includes vegetable crops like cabbage, broccoli, and cauliflower as well as field crops such as canola and mustard. In British Columbia, Quebec and Ontario, clubroot is a major concern for commercial vegetable producers. Clubroot is especially problematic because the pathogen persists in soil for many years and cannot be controlled with crop protection products currently registered in Canada. Clubroot has the potential to be a significant threat to canola production in parts of Alberta.

How much yield loss will clubroot cause?

Research with canola indicates infestations approaching 100% led to 50% yield losses, while 10 to 20% infestations led to 5-10% yield losses. As a rough estimate, the % yield loss from clubroot is about half the % of infected plants.

Does Alberta currently have a clubroot problem?

In 2003, the first case of clubroot in western Canadian canola was found in a field near St Albert. Surveys of neighboring fields suggested that the problem was not isolated to one field or one producer. Surveys conducted since 2003 have confirmed clubroot throughout much of central Alberta and two counties in southern Alberta. Survey results indicate that clubroot poses a serious threat to canola production in Alberta.

Where is clubroot likely to be a problem?

Computer simulations based on disease and environmental factors suggested that the Edmonton region was the only part of Alberta likely to have significant clubroot problems. Field surveys since then, however, have found clubroot fanning out in all directions from the Edmonton region, and also two counties in southern Alberta.

What do symptoms look like in cano-



la?

The causal agent, *Plasmodiophora brassicae* Woronin, infects roots causing irregular club-like galls that restrict the flow of water and nutrients to leaves, stems and pods. Visible symptoms on the plant include wilting, stunted growth, yellowing, premature ripening, and shriveled seed. Plants infected early in the growing season may appear heat or drought stressed. Crops that have finished flowering may have symptoms that from a distance resemble sclerotinia stem rot or possibly fusarium wilt. In most cases however, clubroot can be diagnosed with close examination of the root system.

What is being done about the problem?

The threat of clubroot to Alberta canola growers is being addressed through regulations and research. Clubroot was added as a declared pest to the Agricultural Pests Act in April 2007. Alberta Agriculture and Forestry is responsible for this Act, however, enforcement is the responsibility of the local municipality. Agricultural Fieldmen (or appointed pest inspectors) have the power to enter land at a reasonable hour, without permission to inspect for pests and collect samples. The owner or occupant of land has the responsibility of taking measures to prevent the establishment of any pest on land, property and livestock and to control or destroy all pests in the land or property.

Control measures for clubroot are specified in the Alberta Clubroot Management Plan. [https://www1.agric.gov.ab.ca/\\$Department/deptdocs.nsf/all/agdex11519](https://www1.agric.gov.ab.ca/$Department/deptdocs.nsf/all/agdex11519)

It is important to understand that these control measures represent an acceptable minimum standard that is to be applied in all municipalities across the province. Municipalities, however, can adopt more stringent standards within their own jurisdictions.

Are there canola varieties that are resistant to Clubroot?

Clubroot resistant canola varieties are available. Although clubroot resistance is a great tool available to canola growers, producers should maintain realistic long-term expectations for how this tool fits into their overall pest management program. Disease resistance tends to break down with time as pathogens adapt to modified hosts, and this occurs with clubroot resistance as well. Clubroot resistant canola planted on land that is heavily infested with clubroot loses its resistance very quickly. A one in four-year rotation of clubroot resistant canola in conjunction with good equipment sanitation practices should keep the pathogen at manageable levels. This will ensure that genetic resistance is maintained as long as possible

and that canola will remain a viable part of the production system. It must be understood that every time a resistant variety is grown is one less time that the same genetics can be used successfully in the future.

What strategies can be used to manage clubroot?

Since there is no real cure for clubroot, prevention is the best management strategy - an ounce of prevention is worth a pound of cure.

- A long rotation between canola crops (1 in 4 years) is the single most important preventative strategy. Fields that have clubroot problems have a history of short (often 1 in 2 years) canola rotations. Lengthening out the canola rotation may reduce profitability in the short-term but the long-term gains will be substantial if the longer rotation prevents clubroot.

- Equipment sanitation. Clean dirt from equipment, including tires, when moving between fields.

- Avoid hay or straw purchases from regions where clubroot is known to occur or if infestation is suspected. Straw and hay could be carrying soil and the pathogen. Once land is infected with clubroot, management strategies are more difficult and/or expensive.

- Canola should not be seeded on infected land for 5-7 years. Research indicates that the pathogen can survive in soil for up to 17 years so a 5-7 year break from canola will not eliminate the problem, but keep the problem manageable.

- The extended rotation away from canola must also include diligent control of plant species susceptible to clubroot including volunteer canola, weeds in the mustard family, dock, hoary cress, orchard grass, red clover, red-top, and perennial ryegrass.

- Minimize soil erosion with zero or minimal tillage. Since clubroot is a soil borne disease, the pathogen will move with wind or water-eroded soil.

STARLAND COUNTY CLUBROOT POLICY OVERVIEW

The Ag Pest Act is legislation which provides authority for the Minister to declare as a pest or nuisance any animal, bird, insect, plant or disease which is destroying or harming or is likely to destroy or harm any land, livestock or property in all or part of Alberta. The legislation enables inspectors and local authorities to deal with pests and nuisances which affect agricultural production. Once a Pest has been declared it is the responsibility of the landowner or occupant to prevent the establishment, to control or destroy any declared pest should it be found on their land.

The municipality is responsible for enforcement of the Act and this is the job of the Agricultural Fieldman who by virtue of their position is the designated inspector. The duty of the inspector is to ensure active measures are employed to prevent the establishment of, or control or destroy the declared pest in their jurisdiction. If you would like to read the Alberta Ag Pest Act and regulations the link is: [http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/acts6008](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/acts6008)

As Clubroot was designated a pest under the Alberta Ag Pest Act in April of 2007, Starland County was bound by the Act to prevent establishment. Our first move was to create a policy to outline what we would do in the event we found it. This policy is reviewed annually by our ASB and council and has been updated over the years to reflect advances in science and technology and meet the requirements of the Ab Clubroot Management Plan.

Starland has actively surveyed for clubroot on a random basis per the provincial requirements since 2007. To date we have not detected this pathogen in our survey's. It must be pointed out however that our survey is not a field inspection and most of the clubroot found in S. AB has been found by the producer's anywhere but the field entrance. Given this information we would conclude that it is very possi-

ble that we have missed it.

If clubroot is found a legal notice will be written on the infected property and issued to the landowner and occupant in accordance with the Ag Pest Act. Our policy states no susceptible varieties of canola or other host crops shall be grown on the infected land for 4 years per the provincial clubroot management plan recommendations. Remember a notice is only written on the infected property and not on the whole farm.

Further to the notice we have created a clubroot management agreement to be completed by the landowner with the assistance of the Ag Fieldman. This agreement is intended to assist the producer with a control strategy to ensure that spore loads remain low on this property and is intended to limit future economic loss.

Technically if we are practicing a 1 in 4 rotation using clubroot resistant varieties a notice on a piece of land would not impact our farming operations. However, if we planted canola in year number 3 of the notice, sell the land, or rent it out, the land is subject to the conditions that were imposed, and non-compliance would mean enforcing the notice.

If a notice is issued on a piece of land our inspectors will follow up to ensure the notice is being complied with. With all notices there is an appeal process available should you wish to contest the conditions, and this is outlined in the Ag Pest Act. Also, if science comes up with a new proven strategy or can get truly resistant material in place a notice would be removed.

Our hope is that we never have to issue a notice and if we do it is purely a reminder that clubroot is present. If we practice a rotation and use the available technology wisely, we have little to worry about. If we throw caution to the wind it puts everyone at risk and that is where the Act comes in.

The policies below outline our procedures for dealing with clubroot. If you have any questions in regard to our policies, the Act, clubroot or any other ag question please contact either Al or Dara and we will be glad to discuss it with you

Starland County Municipal Policy Handbook	Title: Control of Clubroot Disease in Canola
Approved: Pages: 1	Amended: February 27, 2016
Legal Reference:	Reviewed by Council: November 6, 2018

PURPOSE

Starland County Agricultural Service Board recognizes that Clubroot of Canola is a serious problem and supports the principle to control the spread of Clubroot which is a pest under the Agricultural Pests Act. As well it is the duty of a local authority to prevent the establishment of, or to control or destroy pests in the municipality.

PROCEDURES

1. Random Field inspections will be conducted by the Agricultural Fieldman and /or other Inspectors appointed by Starland County.
2. Inspectors will follow procedures that are established by the Agricultural Service Board on proper sampling techniques and protocol for entering upon land.
3. Positive identification of Clubroot shall be obtained by a laboratory test.
4. When land is verified positive for Clubroot the landowner & occupant will be notified in writing with a legal notice in accordance with the Province of Alberta Agricultural Pests Act.
5. The notice will prohibit the growth of susceptible varieties of canola, mustard or any other susceptible crop to Clubroot for a period of four years on land that has tested positive for Clubroot.
6. A person who has an interest in land as an owner or occupant and feels personally aggrieved by a notice issued by an inspector under Section 12 of the Agricultural Pests Act may appeal to the local authority of Starland County within ten days of the Notice.
7. If a host crop comes back with a verified positive for the presence of Clubroot, this crop will be allowed to be harvested and the notice under the Ag Pests Act will take effect once the field has been harvested.
8. If a host crop is sown on the land that has Clubroot and a current notice has been issued on this property restricting the growth of host crops, the host crop shall be destroyed at the expense of the owner or occupant.
9. Survey results and legal locations of infested fields will be made available to all adjacent landowners, renters and other parties with a genuine commercial interest to the affected property, under the provisions of the Alberta Agricultural Pests Act and the Pest and Nuisance Control Regulation (section 10).
10. This policy shall be reviewed by the ASB on an annual basis.

Additional information on clubroot and its management can be found at [http://www1.agric.gov.ab.ca/\\$Department/deptdocs.nsf/all/agdex11519](http://www1.agric.gov.ab.ca/$Department/deptdocs.nsf/all/agdex11519)

Starland County Municipal Policy Handbook	Title: Clubroot Management Agreement
Approved: Pages: 2	Amended:
Legal Reference:	Reviewed by Council: November 6, 2018

This Clubroot Management Agreement is to be used when developing a clubroot management plan for clubroot-infested fields. A proactive management plan will

help to reduce or keep pathogen levels low and minimize yield losses due to clubroot.

For each section below, please check the box for all management strategies that will be used. The management strategies identified as **Req** are **minimum requirements** that need to be included. Additional management strategies are listed and should be considered whenever possible.

Additional information on clubroot and its management can be found at [http://www1.agric.gov.ab.ca/\\$Department/deptdocs.nsf/all/agdex11519](http://www1.agric.gov.ab.ca/$Department/deptdocs.nsf/all/agdex11519)

Field Location and Information:

Date:				
Landowner's name:				
Renter's name (if different from above):				
Pest Inspectors name:				
Legal land location of clubroot infested fields that will be managed according to this plan:	Symptoms visible?		DNA-based soil test confirmed pathogen?	
	Yes	No	Yes	No

Part 1: Crop Rotation

Crop rotation will reduce pathogen (spore) levels and selection pressure on the clubroot pathogen population to overcome resistance in the canola variety. Longer rotations are encouraged in fields with high disease severity.

Indicate which crop rotation interval will be followed from the list below.

- Three year rotation (two year break)
- Four year rotation (three year break)
- R longer than a four year rotation
- Perennial forage crop for more than two years
- Other (please indicate): _____

Part 2: Variety Selection, Weed Control and Small Patch Management

Please select all strategies that will be used:

- Use of only clubroot-resistant varieties in fields with clubroot symptoms or where the clubroot pathogen has been detected – **Req**
- Use of clubroot-resistant varieties in all canola fields.
- Control of volunteer crops including: canola, camelina, mustard or other clubroot hosts – **Req**
- Control of cruciferous weeds throughout the rotations – **Req**
- Weed species to be controlled include but are not limited to: stinkweed, shepherd's purse, wild mustard, ball mustard, dog mustard, flixweed tansy mustard, wild radish, peppergrass, yellow whitlow grass
- Uprooting, removing and safe disposal of all clubroot infected plants (small patch)
- Liming of soil in clubroot-infested area to increase pH to 7.5 (small patch)
- Use of DNA-based soil testing to monitor spore levels prior to seeding a susceptible host crop

Part 3: Reducing Soil Movement

Please indicate how you will minimize the spread of clubroot and movement of clubroot-infested soil (**Req**). Select the strategies that will be used from the following list:

- Grass the field entry to reduce spore levels or as an area for cleaning equipment
- Create a separate field exit away from existing field entrance and/or known clubroot-infested areas
- Equipment cleaning and sanitation practices (select from the following list):
- Remove large clumps of soil before leaving the field
- Remove as much soil as possible using a brush or compressed air before leaving the field Visit clubroot-infested fields last and fully clean equipment afterward

- Wash and sanitize equipment with bleach when possible

- Require others working on the clubroot-infested land to implement a biosecurity protocol (protocols can include vehicle cleaning, use of disposable boot covers etc.)

- Use of soil conservation practices to reduce soil spread – **Req**

- Zero tillage

- Other (please describe):

Example: reduced tillage – spring tillage only when needed for specific crop

Part 4: Disclosure of Clubroot Infestation and Biosecurity Management

- Notification of all occupants, renters and easement holders who have access to the land— **Req**
- Notification and disclosure to contracted and/or other parties who have access to the land that the clubroot is presented—**Req**
 - Ex. Custom sprayers, utility companies, agronomist, etc.
- Disclosure that clubroot is present when the land is sold or rented to other parties—**Req**

Part 5: Clubroot Scouting and Monitoring

- Continued scouting and soil testing in fields where clubroot or the clubroot pathogen has been detected to monitor pathogen (spore) levels and visible symptoms on plants
- Continued scouting in adjacent fields and other fields rented or owned

Renters/Landowner's Signature: _____

Date: _____

Pest Inspector's Signature: _____

Date: _____



FREE Farmer's Information Day **Friday March 1st, Morrin Arena/Sportsplex**

10 am-12 pm	Imagery, Historical Mapping and Yield Projections Curt Walker Climate Field View—Curt McNaughton
12pm-1pm	Lunch
1 pm - 2:15 pm	Recon Wireless Blockage and Flow Sensor Intelligent Ag, Total Control Security, On Farm Security - Kyle Suntjens

*Hosted by the Morrin Ag Society RSVP to Gary Chambers by Feb 26th
Txt (403) 820-2121 email: gary@2121.ca*

NUTRIEN AG SOLUTIONS DELIA
**CLUBROOT AWARENESS &
PREVENTION WORKSHOP**

Thursday March 7, 2019 | 10 a.m. - 2 p.m.

Delia Community Centre

Coffee and registration at 9:30 a.m.

Speakers from:

Nutrien Ag Solutions | *Manager of Agronomic Services*

Canola Council | *Agronomy Specialist, Central Alberta South*

Starland County | *Agricultural Fieldman*

BASF | *Canola seed reps*

Lunch will be provided courtesy of Starland County



Free to attend! Call or text Micayla Code at (403) 321-0124
by March 1 to register or for more information.

Nutrien
Ag Solutions™

STARLAND COUNTY HOSTS

3RD ANNUAL GARDENING WORKSHOP & TRADESHOW

**SATURDAY MAY 11TH
8AM-3PM
CANALTA HOTEL
DRUMHELLER**

Topics

Vermi-Composting
Soil Health & Your Garden
Companion Planting

Hands-On Activities

Build Your Own Worm Bin
Build Your Own Worm Tower
Perennial Plant Exchange
(Bring a plant take a plant!)



\$40/PERSON, LUNCH & DOOR PRIZES INCLUDED

**LINK TO REGISTER WWW.STARLANDGARDEN.EVENTBRITE.CA
FOR QUESTIONS CALL DARA KUDRAS (403) 772-3793**

BEFORE THE PLATE

**FREE
MOVIE
SCREENING
EVENT**

**DRUMHELLER
NAPIER THEATRE
SUNDAY
MARCH 10TH
2PM**

**STETTLER
JEWEL THEATRE
MARCH 11TH
2 PM & 7 PM**

**CONCESSIONS
WILL BE OPEN**



FILM SYNOPSIS
Before the Plate showcases 10 ingredients from planting to cooking and everything in between, to help better connect the modern consumer with their food. This film challenges modern myths about farming and reveals the obstacles the industry faces as it moves forward.

HOSTED BY



REGISTRATION

**BEFORETHEPLATESTARLAND.
EVENTBRITE.CA**

**BEFORETHEPLATESTETTLER.
EVENTBRITE.CA**

**FOR MORE INFO CONTACT
DARA KUDRAS
(403) 772-3793 OR
RYAN HALLETT
(403) 742-4441**

JOB POSTING