

# Clubroot in Saskatchewan

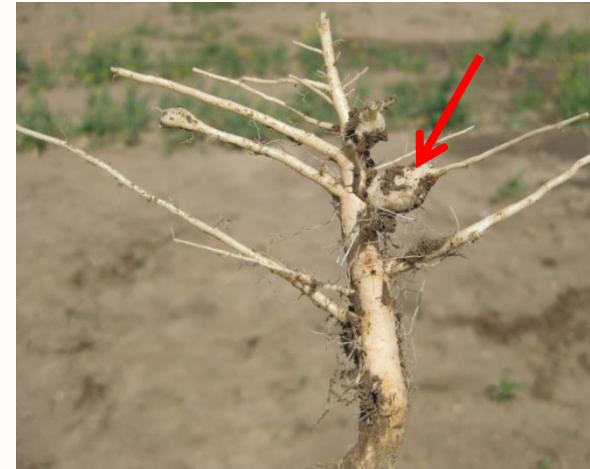
Barb Ziesman  
Provincial Specialist, Plant Disease  
SARM Annual Convention  
March 14, 2019

*saskatchewan.ca*



# What is clubroot?

- Clubroot is a soil-borne disease caused by *Plasmodiophora brassicae*
- Reduces yield by restricting the plant's ability to obtain water and nutrients from the soil



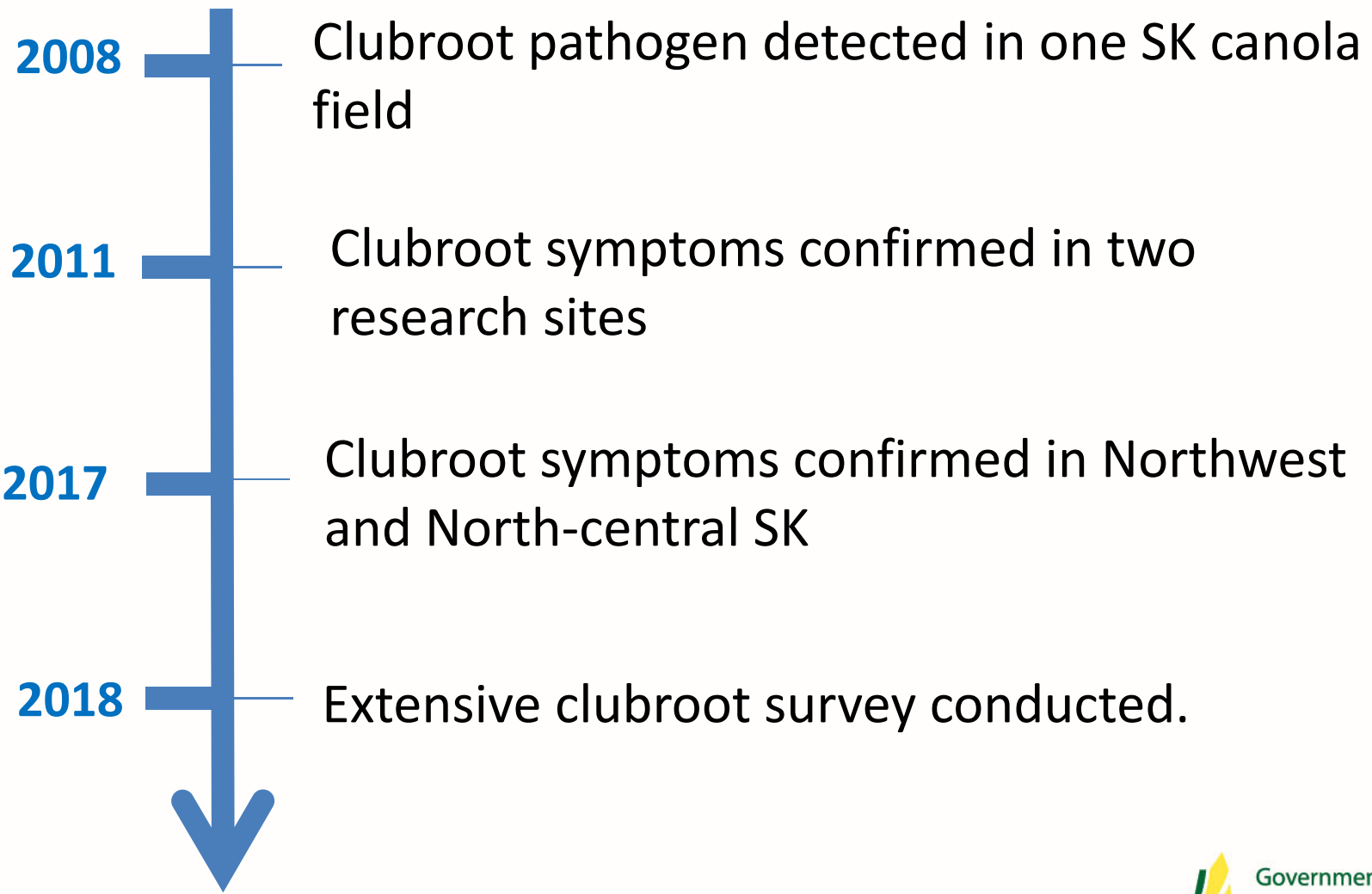
# Why are we concerned?

1. Clubroot can cause significant yield losses when pathogen levels are high.
2. Clubroot is not currently widespread in Saskatchewan
3. Clubroot is a declared pest under *The Pest Control Act*

# ***The Pest Control Act***

- **Rural Municipalities (RM) have the power to:**
  - Appoint Pest Control Officers (PCOs)
  - Pass bylaws
  - Require individuals to take action to control clubroot on the land they own, occupy or control
- SARM Plant Health Officers can offer support to RMs for all regulated pests and weeds.

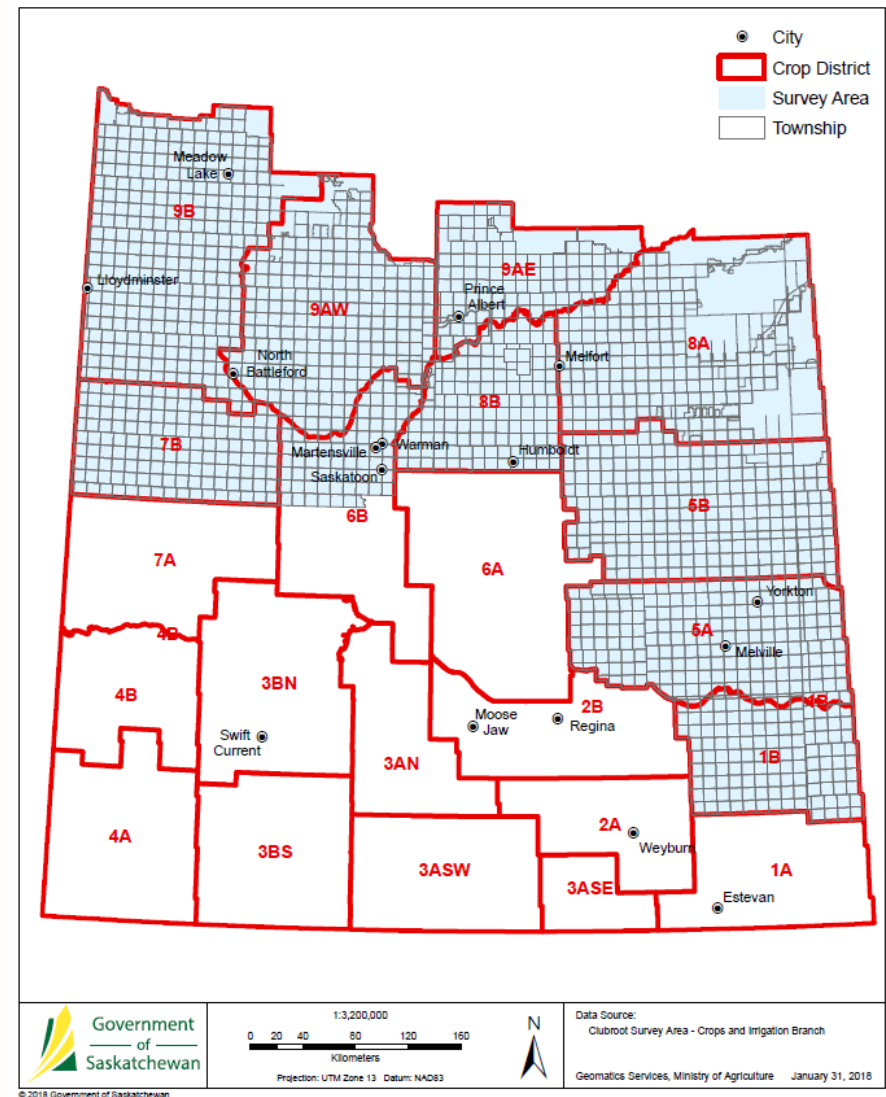
# Clubroot in Saskatchewan



# 2018 clubroot survey

2018 Clubroot Survey Plan

- Focused on the highest clubroot risk areas
- Approximately 1500 fields were surveyed
- Examined plant roots for clubroot symptoms and collected soil for DNA-based detection of the clubroot pathogen



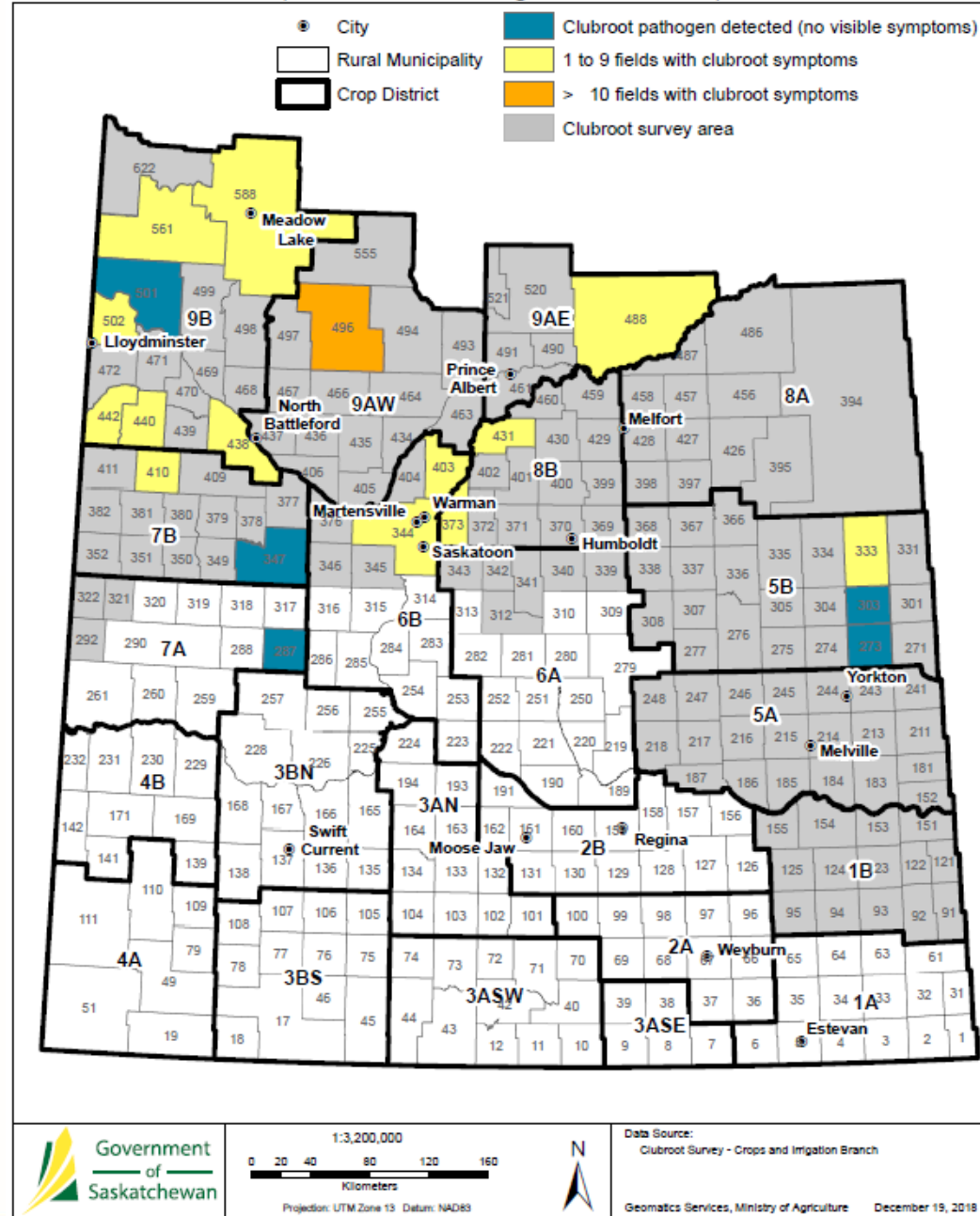
# What we know now

- Visible symptoms of clubroot have been confirmed in 43 commercial canola fields (2017 and 2018).
- The clubroot pathogen has been detected at low levels in five canola fields that did not have visible clubroot symptoms (2008 to 2018)





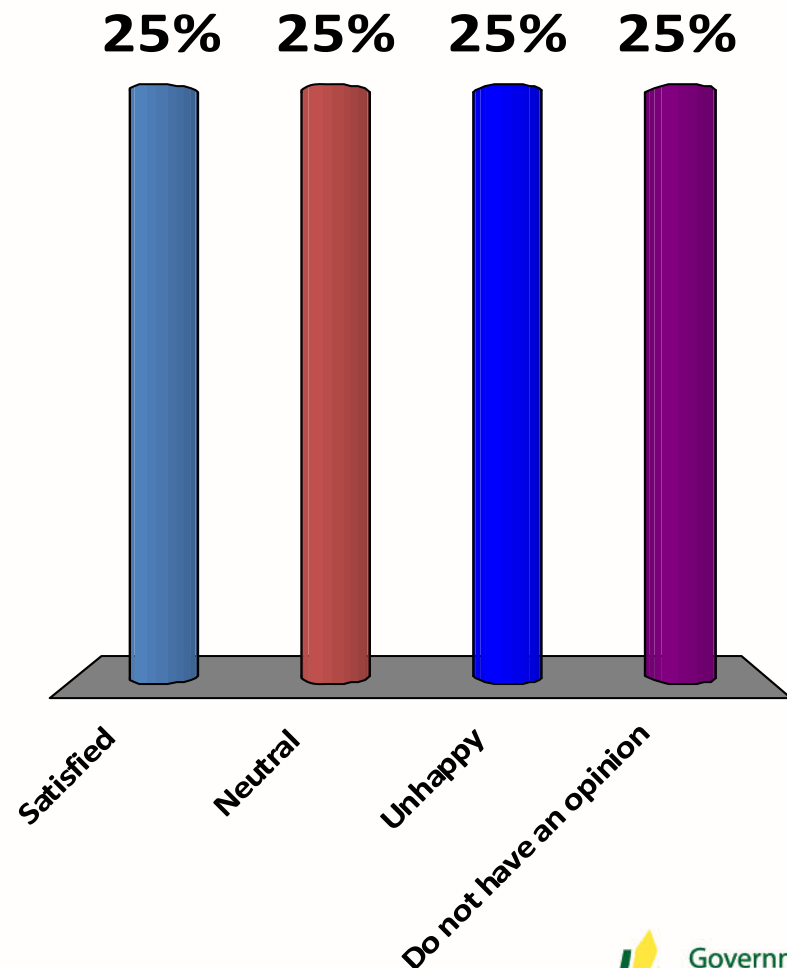
# Clubroot Distribution in Saskatchewan (cumulative testing 2008 to 2018)





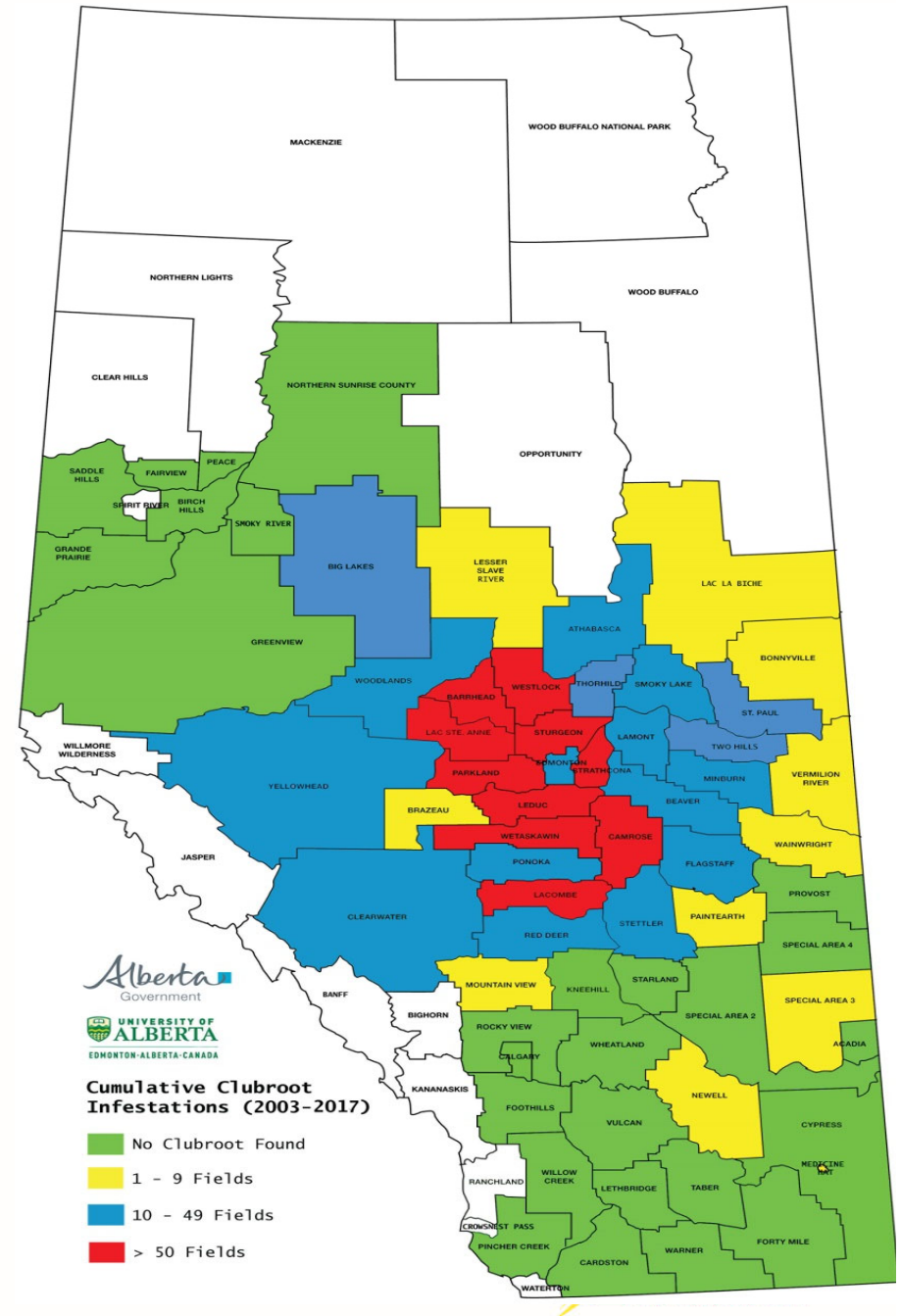
# How satisfied are you with the Ministry's response to the 2017 clubroot findings?

- A. Satisfied
- B. Neutral
- C. Unhappy
- D. Do not have an opinion



# Clubroot in Alberta

- First identified in canola in 2003
- Has now been confirmed in 3044 fields.
- Resistance breakdown have been confirmed in over 170 fields



# Clubroot in Alberta: Challenges

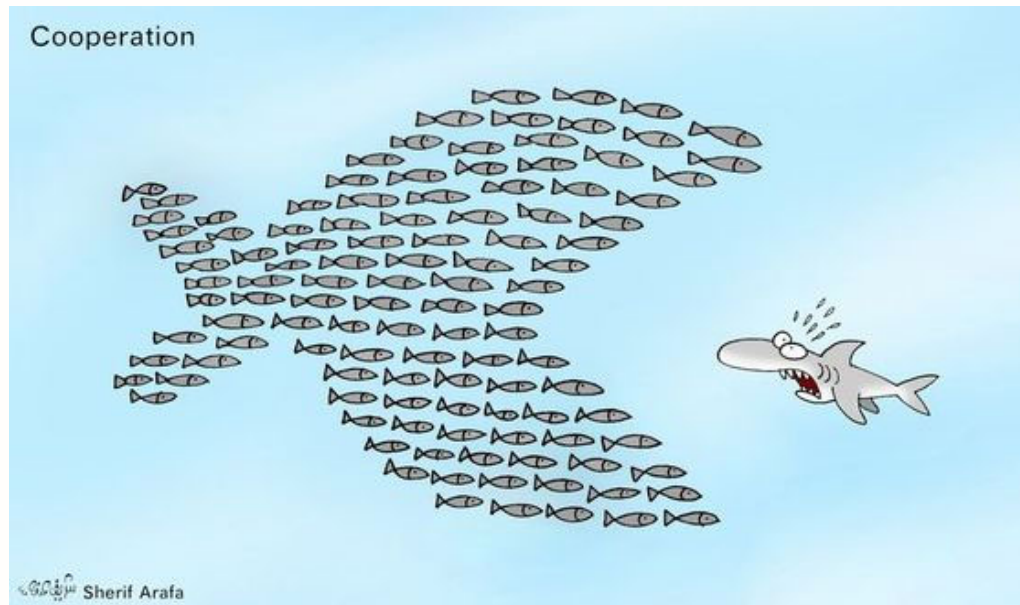
- Clubroot regulation is not consistent across the province
- Proactive management strategies to keep pathogen levels low have not been used consistently
- Clubroot surveys focus only on visible symptoms and may not enable early detection



# What can we do in Saskatchewan?

## Common goal

To minimize the **distribution** and **severity** of clubroot in Saskatchewan.

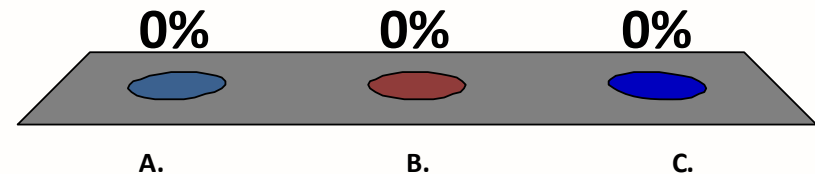


# We all have a role to play

Ministry of Agriculture	Rural Municipalities (RMs)	Farmers
<ul style="list-style-type: none"><li>• Monitoring and surveillance</li><li>• Education and awareness</li><li>• Supporting research to ensure that management tools are available to producers</li><li>• Supporting RMs</li></ul>	<ul style="list-style-type: none"><li>• Pass science-based bylaws and policies</li><li>• Work with land owners and producers to ensure that clubroot is managed in a consistent and science-based manner</li><li>• Minimize the spread of clubroot through RM activities</li></ul>	<ul style="list-style-type: none"><li>• Need to actively manage and prevent the spread of clubroot</li><li>• Need to scout their canola fields for early detection of clubroot on their farm</li><li>• Be willing to ask for help</li></ul>

Are you willing to work with us to  
minimizing the distribution and severity of  
clubroot in Saskatchewan?

- A. Yes
- B. No
- C. I am not sure



# 1. Minimizing the distribution

- Clubroot prevention is focused on minimizing the movement of clubroot infested soil.
  - Educate producers on clubroot prevention
  - Encourage open and transparent communication around biosecurity
  - Encourage all groups working on agricultural land to develop biosecurity protocols



## 2. Minimizing the severity

The key to clubroot management is to keep pathogen levels low to allow continued canola production in the infested field with minimum impact on yield.



# Clubroot management

- It is important to have a consistent, science-based and farmer-driven approach to clubroot management
  - Minimum of a three-year crop rotation
  - Use of clubroot resistant varieties
  - Use of clubroot prevention and soil conservation strategies
  - Notification occupants, easement holder and new owners or renters

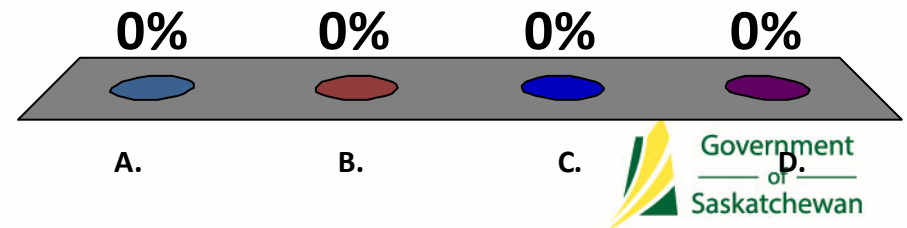


# How do we ensure consistency?

- Implementation of a clubroot bylaw and policy
- Offers three main benefits:
  - Makes reporting of clubroot mandatory
  - Ensures a consistent and science-based approach to clubroot management
  - Protects the producer by clearly indicating how clubroot findings will be managed by the RM

# Does your RM currently have a clubroot specific bylaw enacted?

- A. Yes
- B. No
- C. Not right now, but we are planning on enacting one soon
- D. I don't know



# What if clubroot is found?

- Keep the location of the field **confidential**
- Contact your Pest Control Officer or your Division Plant Health Officer





# Clubroot resources

## The Saskatchewan Clubroot Management Plan

### Clubroot Management Plan

Developed by the Saskatchewan Clubroot Initiative  
Revised July 2018

#### Clubroot Overview

##### What is clubroot?

Clubroot is a soil-borne disease caused by a microbe, *Plasmodiophora brassicae* (*P. brassicae*). Clubroot affects the roots of host plants, which include cruciferous field crops such as canola, mustard, camelina, oilseed radish and taramira, and cruciferous vegetables such as arugula, broccoli, Brussels sprouts, cabbage, cauliflower, Chinese cabbage, kale, kohlrabi, radish, rutabaga and turnip. Cruciferous weeds (e.g. stinkweed, shepherd's purse, wild mustard) can also serve as hosts for the clubroot pathogen.



## Clubroot management agreement template

### Clubroot Management Agreement: Non-irrigated land

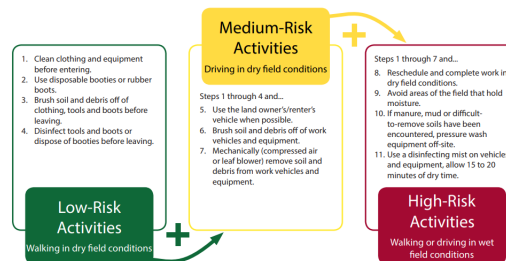
This Clubroot Management Agreement template can be used when developing a clubroot management plan for clubroot-infested fields. A proactive management plan will help to reduce or keep pathogen levels low and minimize yield losses due to clubroot.

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.

For more information on clubroot control strategies, please refer to [The Saskatchewan Clubroot Management Plan](#) on the Saskatchewan Ministry of Agriculture's website at [saskatchewan.ca](http://saskatchewan.ca).

## Biosecurity information

### Crop Disease and Invasive Species Biosecurity Protocol



saskatchewan.ca

saskatchewan.ca/crops



# Summary

- We have an opportunity to minimize the impact of clubroot on the Saskatchewan canola industry
- To do this we need to work together to:
  - Raise awareness of clubroot
  - Ensure a farmer-driven, science based and consistent approach to clubroot management.





# Contact information

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## Plant Health Officers

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