RURAL MUNICIPALITY OF COLONSAY NO. 342

POLICY REGARDING THE PREVENTION AND CONTROL OF CLUBROOT

POLICY NO. 01/20
PART I
DEFINITIONS

1. In this Policy:

a) Clubroot confirmation means that clubroot disease symptoms were observed in a susceptible crop. Detection of the clubroot pathogen's DNA in a plant or soil sample, obtained by laboratory testing, may be conducted as needed to confirm clubroot diagnosis.

i. Detection of the clubroot pathogen's DNA in a plant or soil sample in the absence of visible symptoms is not sufficient for clubroot confirmation. When this occurs the landowner(s) and/or occupant(s) will be encouraged to implement proactive management strategies to prevent the spread of the clubroot pathogen and to keep pathogen low. Fields may be monitored in subsequent years for the development of clubroot symptoms to enable clubroot confirmation.

b) Council" means the Council of the Rural Municipality of Colonsay No. 342.

c) "officer" means an officer within the meaning of The Pest Control Act;

d) Owner and occupant are as defined in *The Municipalities Act*

e) "Municipality" means the Rural Municipality of Colonsay No. 342;

PART II
POLICY STATEMENTS

2. The Municipality recognizes that clubroot is a serious problem of cruciferous plants such as canola, mustard, camelina, oilseed radish, taramira and cruciferous vegetables such as arugula, broccoli, Brussels sprouts, cabbage, cauliflower, Chinese cabbage, kale, kohlrabi, radish, rutabaga, turnip and cruciferous weeds (e.g. stinkweed, shepherd's purse, wild mustard, volunteer canola).

3. The Municipality recognizes that the clubroot pathogen is soil-borne and therefore can be spread by soil movement on equipment, vehicles, tires, shoes, earth tag on seed and tubers grown in clubroot infested soil or any other activity or event that results in the movement of soil.

4. The Municipality supports the principle to control the spread of clubroot, which has been declared a pest under *The Pest Control Act*.

5. *The Pest Control Act* authorizes municipalities and officers to act in relation to clubroot.

PART III
CLUBROOT NOTIFICATION AND CONFIRMATION

6. By way of the Municipalities Clubroot Bylaw 03/2020 every owner and/or occupant of land shall notify the Municipality or officer of the Municipality in which the land is located in writing (email or posted mail), within 30 business days of confirmation of the presence of clubroot, and provide the exact location of the disease. Form A may be used as a template for notification and documentation of the location of the clubroot within the field.

7. Personal survey protocol and details of self-reporting clubroot findings is to be considered confidential and kept on file in the office of the Municipality and released only to authorized municipal or provincial government personnel and the person(s) owning, occupying or controlling the land. Disclosure is subject to agreement reached with the landowner(s) and/or occupant(s), in the best interests of the community in accordance with *The Saskatchewan Clubroot Management Plan*.

8. Clubroot field inspections shall be conducted by officer(s) to monitor for clubroot and/or enforce *The Pest Control Act* within the municipality.

9. Clubroot survey procedures and the reporting form will follow standard protocols as recommended by the Saskatchewan Clubroot Initiative and the Saskatchewan Ministry of Agriculture (see Schedule A).

PART IV
CLUBROOT MANAGEMENT

10. By way of the Municipality's Clubroot Bylaw (Bylaw number) the owner(s) and/or occupants of land where clubroot has been confirmed shall develop a Clubroot Management Agreement (using form B) with the assistance of an agrologist currently practicing with the Saskatchewan Institute of Agrologists.

11. *The Saskatchewan Clubroot Management Plan* shall be referred to and used as a guide for any control/prevention measures. An updated copy of this document can be obtained by calling the Saskatchewan Agriculture Knowledge Center at 1-866-457-2377

12. The Clubroot Management Agreement (Form B) agreed upon

13. between the owner(s) and/or occupant(s) and the officer shall:

a) Meet the minimum standards as identified within *The Saskatchewan Clubroot Management Plan*.
b) Include actions to manage and prevent the spread of clubroot
c) Require the owner(s) and/or occupant(s) to disclose that clubroot has been confirmed if the land is sold or rented to another owner(s) and/or occupant(s)
d) Require notification of occupants and easement holders who have access to the land to enable biosecurity actions to prevent the spread of clubroot.
e) Be returned to the officer within 30 business days.
f) Shall be signed by the landowner(s) and/or occupant(s) of the land and the officer.

14. When a formal agreement cannot be reached or the landowner(s) and/or occupant(s) fail to carry out the measures outlined in the Clubroot Management Agreement entered into under 11, the officer may write an order as per Section 19 of *The Pest Control Act using form C.*

15. The owner(s) and/or occupant(s) shall take all actions as ordered by the officer.

16. In order to maintain confidentiality of both the location and presence of clubroot, the Council should take all discussions regarding instances of clubroot into an in-camera discussion at their council meeting.

17. To preserve confidentiality, motions made by Council should not make reference to the type of pest being controlled or the location/landowner involved.

18. A Municipality may create a file number for the case in lieu of using names or locations. The Municipality may create a file on the case and reference the file number in the motions by Council for record-keeping purposes.

19. Adoption

_____
Reeve

_____
Administrator

Adopted this____day of_____.

_____
Administrator

CLUBROOT SURVEY FORM – FORM A

_____1/4S _____ T ____ R _____ West of the __ Meridian

and/or GPS Coordinates N __ and W ____

as shown on the diagram attached,

-or- Number, Street: _____ Town/City: _____

Pest Control Officer: _____

Surveyor Name (if different than above): _____

Address:_____

Phone:_____E-mail:_____

Landowner Name: _____

Farmer Name: _____

Date surveyed: _____

Is this survey part of an agreement with the landowner or an order? _____

Tillage Information (if applicable/known):

Fall 20___: No tillage_____Cultivation (# of times)_____Discing (# of times)_____

Other:{(Please Specify) # of times}_____

Spring 20 : No tillage Cultivation (# of times) Discing (# of times)_____

Other:{(Please Specify) and # of times}_____

Seeding information (if applicable/known):

Crop**:**_____Variety:_____Source: Certified_____Common _____

Seeding date: (if available)_____Seeding rate: (lbs./ac. or kg/ha) _____

Total rainfall (if available)**:** June_____July_____Irrigated: Yes No ____

Rotation Information (if applicable/known):

(please list canola variety used in previous years if known)**:**_____

20___ : Wheat_____Barley_____Canola_____Field pea, lentil, dry bean_____

Oats_____Rye_____Potato_Forage grasses Forage legumes_____ Other (please specify)_____

20___ : Wheat_____Barley_____Canola_____Field pea, lentil, dry bean_____

Oats_____Rye_____Potato_Forage grasses Forage legumes_____ Other (please specify)_____

History of crucifer vegetables or crucifer (brassica) crops other than canola grown on the field: _____

~~include indication of a previous home garden)~~ (could

Field Traffic: Is there occasional traffic on to the field, i.e. oil pumping rigs, power installations, research plots, recreational vehicles (ATVs), etc.?_____

_____

Comments (*please attach additional sheets if required)*: _____

_____

_____

TYPE OF SAMPLE(S) COLLECTED (circle one or both):

SOIL		**PLANTS**	
Number of samples:		**Number of samples:**	

DIAGRAM SHOWING LOCATION OF FIELD ENTRANCE and/or SAMPLES:
(may be supplemented with map printed from GIS software) North-West

North-West1/4	North-East 1/4
South-West 1/4	South-East 1/4

CLUBROOT SURVEY PROTOCOL- SCHEDULE A

Introduction: Clubroot is a soil-borne disease caused by a microbe, *Plasmodiophora brassicae*. Clubroot affects the roots of cruciferous field crops such as canola, mustard, camelina, oilseed radish and taramira. It also affects cruciferous vegetables such as arugula, broccoli, Brussels sprouts, cabbage, cauliflower, Chinese cabbage, kale, kohlrabi, radish, rutabaga and turnip, as well as cruciferous weeds (e.g. stinkweed, shepherd's purse, wild mustard, volunteer canola).

Symptoms: Invasion of host roots leads to the formation of clubroot galls. These deformed roots have a reduced ability to absorb water and nutrients leading to stunting, wilting, yellowing, premature ripening and shrivelling of seeds. The cause of these above-ground symptoms can be confirmed by digging up suspect plants to check roots for gall formation. Clubroot affects canola yield and quality to a similar degree as other diseases affecting water and nutrient uptake, and its impact depends on soil conditions and the growth stage of the crop when infection occurs and the level of the pathogen in the soil. Early infection of seedlings can result in significant yield losses. Spore germination of *Plasmodiophora*, infection and disease development are favoured by warm soils, high soil moisture and low soil pH.

Equipment and Materials Needed:

Clubroot survey sheets (Form A)	Hand trowel	Disposable booties and gloves
Clipboard and pen	Pocket knife	Garbage bags
GPS unit or maps	Pail of two per cent bleach for soaking/cleaning tools	two per cent bleach solution in misting bottle
Paper bags or boxes		

Plant Sample Survey Procedure:

1. As clubroot may take six to eight weeks to develop, symptoms are most detectable later in the growing season (late July or August).
2. Records must be kept for all fields visited using *Form A* clubroot survey sheets.
3. Do not drive into field or access, but park on the road whenever possible. Surveyors can walk into infested fields but must follow human sanitation procedures.
4. If survey personnel enter a field in any potentially infested regions, whether it is known to have clubroot or not, they are to follow these procedures:
    - Wear disposable footwear that can be removed immediately after leaving the field. Another option is to use rubber boots or other footwear that can be sterilized (misted) with a disinfectant solution (two per cent bleach) upon leaving the field.
    - Dispose of the disposable footwear in a sterile fashion. Sealing in a garbage bag and incinerating is preferred. Do not reuse disposable footwear.
    - Clean and disinfect any tools that may have been in contact with soil in the field.
5. Observe 20 plants at the field entrance and at each of five additional sites in the field, for a total of 100 plants. Keep each of these five sites at least 20 metres from each other and at least 20 metres from the field edge.
6. If patches of premature ripening are observed, particularly in field entrance or corners of field, dig or pull up plants, shake off excess soil and inspect roots for the presence of galls. If clubroot is suspected, cut off stems and collect root samples.
7. Air-dry root samples in paper envelopes/boxes/bags and send them to the Ministry of Agriculture's Crop Protection Laboratory at 346 McDonald Street, Regina SK, S4N 6P6, telephone (306) 787-8130. You may mail, courier or drop off samples in person. There is a $20 fee for visual inspection.
8. If the visual diagnosis is positive, root samples will be forwarded to a laboratory on behalf of the municipality for DNA testing. Cost of the DNA testing will depend on the current fee set by the credited laboratory (approximately $100).

Soil Sample Survey Procedure:

1. Soil samples can be collected at any time but soil should be dried after collection.
2. Records must be kept for all fields visited using *Form A* clubroot survey sheets.
3. Do not drive into field or access, but park on the road whenever possible. Surveyors can walk into infested fields but must follow human sanitation procedures.
4. If survey personnel enter a field in any potentially infested regions, whether it is known to have clubroot or not, they are to follow these procedures:
    - Wear disposable footwear that can be removed immediately after leaving the field. Another option is to use rubber boots or other footwear that can be sterilized (misted) with a disinfectant solution (two per cent bleach) upon leaving the field.
    - Dispose of the disposable footwear in a sterile fashion. Sealing in a garbage bag and incinerating is preferred. Do not reuse disposable footwear.
    - Clean and disinfect any tools that may have been in contact with soil in the field.
5. Soil samples should be comprised of a mixture of small scoops (approximately one cup each) of soil taken at each of 5 sites visited in one field. Because clubroot is most likely to arrive on soil attached to vehicles and field equipment, IF the entrance to the field is evident, these 5 sites should be located in the vicinity of this approach. Clear away residue from the soil surface, and scoop approximately 1 cup of the top 5-10 cm of soil at each site (total 1 litre from all 5 sites combined). Keep each of these five sites at least 20 metres from each other and at least 20 metres from the field edge.
6. Air-dry soil samples in paper boxes and send them to a laboratory for DNA testing. Cost of the DNA testing will depend on the current fee set by the credited laboratory (approximately $100).
    - For a list of laboratories providing clubroot testing, please visit: www.clubroot.ca (click on Identify Clubroot) or contact the Crop Protection Laboratory in Regina.

CLUBROOT MANAGEMENT AGREEMENT- FORM B

Agreement No. _____

Date of Agreement _____ , 20 _

Agreement between

Owner, Occupant or Operator -and- Pest Control Officer

_____ _____

(*Name*) (*Name*)

_____ _____

_____ _____

_____ _____

(*Address*) (*Address*)

_____ No. ___

(*Municipality*)

I, the above-mentioned owner or occupant, having this day conferred with the above-mentioned pest control officer, hereby acknowledge the presence of clubroot, on the land located at (if different from above):

_____ 1/4S _____ T _____ R _____ West of the __ Meridian

and/or GPS Coordinates N __ and W ___

as shown on the diagram attached,

OR Number, Street: _____ Town/City: _____

AND hereby agree to do the following work (specify details of the Clubroot Management Agreement including actions to be taken to control and prevent the spread of clubroot):

_____

_____

_____

_____

_____

_____

(*Signed*) _____

(*Owner and Occupant*)

(*Signed*) _____

(*Pest Control Officer*)

DIAGRAM SHOWING LOCATION OF CLUBROOT
(may be supplemented with map printed from GIS software)

North-West 1/4	North-East 1/4
South-West 1/4	South-East 1/4

Section _____ Township ____ Range _____ West of ___ Meridian

GPS coordinates: N _____ W _____

(These locations are approximations only and do not necessarily indicate all clubroot present.)

Note: This agreement to be made in triplicate. The original copy is for the owner/occupant, and copies 2 and 3 are to be submitted to the municipality.

Copy 1: Owner/Occupant *Copy 2: Municipality* *Copy 3: Government of Saskatchewan*

CLUBROOT ORDER

Order No. _____

Date of Issue _____ , 20 _

To: _____ Address: _____

Telephone: _____ _____

It has come to my attention that clubroot, a declared pest under *The Pest Control Act*:
(please check one box)

☐ has been confirmed on your land described as (if different from above):

_ 1/4S ____ T ____ R ____ West of the ____ Meridian.

OR

Number, Street: _____ Town/City: _____

and/or GPS Coordinates N _____ and W _____

and as shown on the diagram attached.

-or-

☐ are present in soil adhering to your machine described as:

_____

(description of machine, including serial number and, if applicable, licence plate)

In accordance with the Clubroot Bylaw for the municipality, you are hereby notified:

(*Detail instructions including methods to be used to control clubroot or sanitize machine and setting out any prohibitions or other measures the Pest Control Officer considers necessary or appropriate*).

_____

_____

_____

_____

_____

Municipality of _____ (Pest Control Officer) _____ No. _

DIAGRAM SHOWING LOCATION OF CLUBROOT
(may be supplemented with map printed from GIS software)

North-West 1/4	North-East 1/4
South-West 1/4	South-East 1/4

Section _____ Township ____ Range _____ West of ___ Meridian

GPS coordinates: N _____ W ____

(These locations are approximations only and do not necessarily indicate all clubroot present.)

Note: This order is to be made in triplicate. The original copy is for the person to whom it is served, and copies 2 and 3 are to be submitted to the municipality.

Copy 1: Owner/Occupant/Person in charge of a machine Copy 2: Municipality Copy 3: Government of Saskatchewan