

PREVENTION AND CONTROL OF CLUBROOT DISEASE OF CRUCIFERS
BYLAW

RURAL MUNICIPALITY of BRITANNIA NO. 502

BYLAW NO. 13-2018

A BYLAW TO PREVENT AND CONTROL CLUBROOT

The Council of the Rural Municipality of Britannia No. 502 in the Province of Saskatchewan enacts as follows:

Short title

1. This Bylaw may be referenced as the “Clubroot Bylaw”

PART I
PURPOSE AND DEFINITION

Purpose and scope

2. The purpose of this Bylaw is to:
 - a) Establish the requirements for clubroot reporting and notification
 - b) Establish the requirements for clubroot management
3. *The Pest Control Act* authorizes municipalities and officers to act in relation to clubroot.
 - a) Section 4 of *The Pest Control Act* states that “every person shall take measures to destroy, control and prevent the spread of all pests on any land or other premises owned, occupied or controlled by him”

Definitions

4. In this Bylaw:
 - a) “Officer” means an officer within the meaning of *The Pest Control Act*;
 - b) “Owner” and “occupant” are as defined in *The Municipalities Act*
 - c) “Municipality” means the Rural Municipality of Britannia No. 502;

PART II
CLUBROOT REPORTING AND NOTIFICATION

5. Every owner(s) and/or occupant(s) of any land in the Municipality shall notify the Municipality in which the land is located of the presence of clubroot, within 30 business days of becoming aware of the same.

Notification of the presence of clubroot shall be in writing (email or postal mail) and submitted to the office of the Rural Municipality of Britannia No. 502.

6. Where the officer believes that a person has contravened any provision of this Bylaw, a Bylaw Violation Notice may be served either personally or by mailing or leaving same at the last known address.
7. The Bylaw Violation Notice shall be in Schedule “1”, attached to and forming part of this Bylaw.
8. The Bylaw Violation Notice shall be deemed to have been served:
 - a) on the expiration of 24 hours after it is posted, if the notice is mailed;
 - b) on the day of actual delivery, if the notice is served personally; or
 - c) on the business day following the transmission, if given by facsimile.

9. In lieu of prosecution, the person who has contravened the provisions of this Bylaw may pay a fine in the amount of \$200 which shall be indicated on the Bylaw Violation Notice.

**PART III
CLUBROOT MANAGEMENT**

10. Every owner(s) and/or occupant(s) of any land where clubroot has been identified through notification within the Municipality as per Part II or by any other means shall take measures to manage and prevent the spread of clubroot.
11. As required by the officer, the owner(s) and/or occupant(s) of any clubroot infested land shall develop a Clubroot Management Agreement with the assistance of an agrologist currently practicing with the Saskatchewan Institute of Agrologists in accordance with Policy No. 13-2018.
12. The owner(s) and/or occupant(s) of any clubroot infested land within the Municipality shall provide the officer with the Clubroot Management Agreement within 30 business days. The officer will ensure that the Clubroot Management Agreement meets the minimum requirements of *The Saskatchewan Clubroot Management Plan* and will execute the agreement with the owner(s) and/or occupant(s).
13. When a formal agreement between the owner(s) and/or occupant(s) and the officer cannot be reached, the officer shall write an order as per Section 19 of *The Pest Control Act*.
14. This Bylaw shall come into force and effect on the day of its adoption.

Reeve

SEAL

Administrator

SCHEDULE 1 TO BYLAW 13-2018

BYLAW VIOLATION NOTICE

Rural Municipality of Britannia No. 502

Bylaw Violation Notice

Name: _____

Address: _____

Section #: _____ **Offence:** _____

Voluntary Payment: \$200.00

Date and Time of Violation: _____

Location of Violation: _____

Details of Alleged Breach of Violation:

Penalty:

Take notice that you may remit a voluntary payment to the Municipality in the amount stipulated above to avoid prosecution for this offence. Payment may be made in person at the municipal office:

4824 47th Street
Lloydminster, Saskatchewan

Or by mail:

Box 661
Lloydminster, Saskatchewan
S9V 0Y7

If the voluntary payment indicated above is not received within one month of the date of this violation, a summons requiring your appearance in a provincial court will be issued.

RURAL MUNICIPALITY OF BRITANNIA NO. 502
BYLAW 13-2018 POLICY REGARDING THE
PREVENTION AND CONTROL OF CLUBROOT

POLICY NO. 13-2018

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 Britannia No. 502.
 - 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 Britannia No. 502;

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 Municipality's Clubroot Bylaw No. 13-2018 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 No. 13-2018, 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 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.
13. 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.
14. The owner(s) and/or occupant(s) shall take all actions as ordered by the officer.
15. **Adoption**

Reeve

Adopted this ____ day of _____, 2018

Administrator

Important Information:

For More Information on Clubroot

For more information on clubroot please visit www.clubroot.ca or www.agr.gov.sk.ca or contact the Saskatchewan Agriculture Knowledge Centre at 1-866-457-2377.

Management and Control Methods

If the Municipality or municipal appointed officer requires assistance devising an effective management plan or requires guidance on sampling techniques or control methods please contact your Division Plant Health Officer or the Saskatchewan Ministry of Agriculture's Provincial Specialist, Plant Disease) at 306-529-4403 or Barbara.ziesman@gov.sk.ca.

CLUBROOT SURVEY FORM – FORM A

_____ 1/4Section _____ Twp. _____ Range _____ W3 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:

(could include indication of a previous home garden)

All survey information is considered **confidential** and is to be kept on file in the office of the municipality and released only to authorized municipal or provincial government personnel and the person owning, occupying or controlling the land surveyed. Disclosure is subject to the agreement reached or orders issued in the event of a positive clubroot finding, as outlined in the clubroot policy of the municipality.

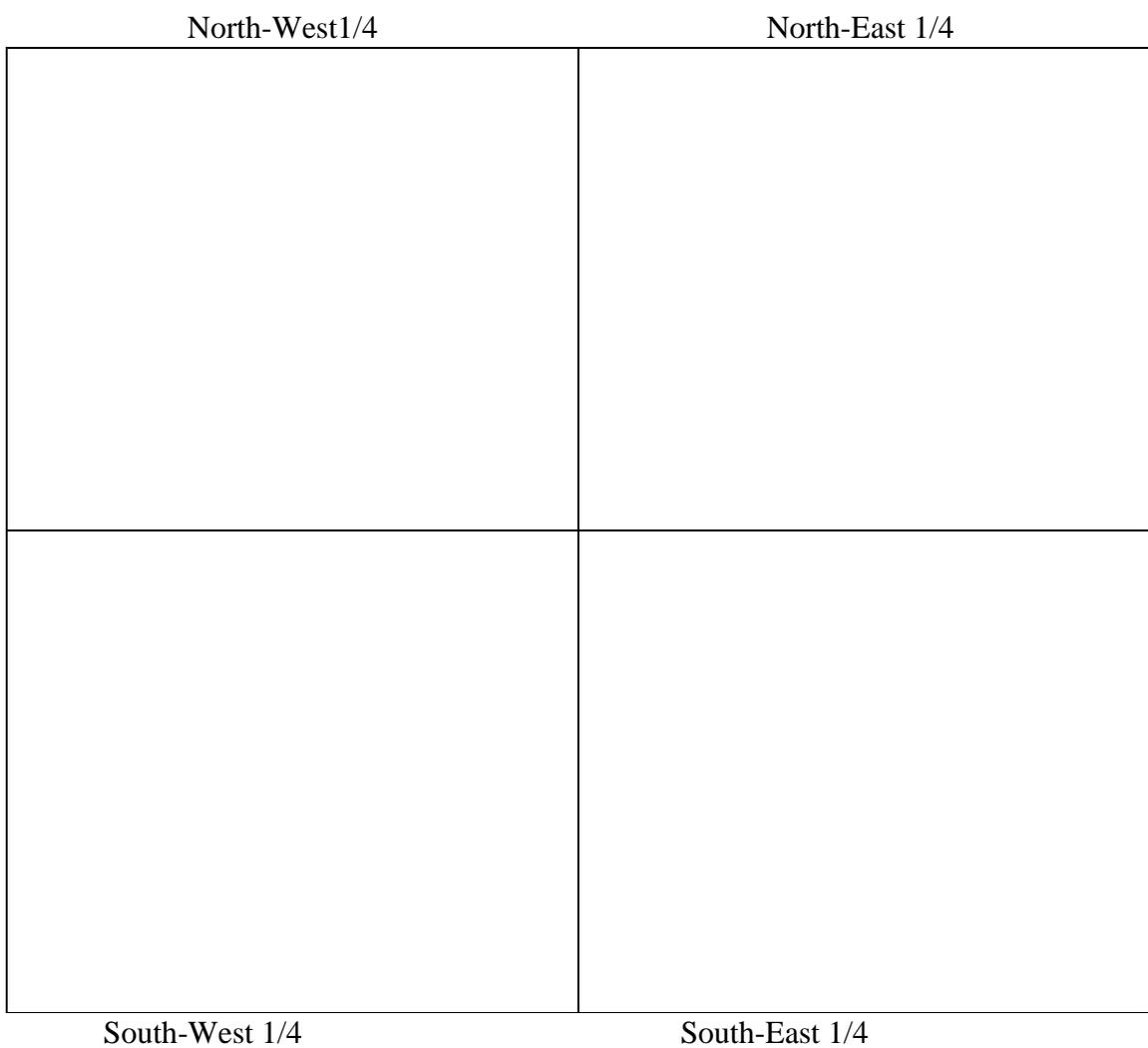
Field Traffic: Is there occasional traffic onto the field, i.e. oil pumping rigs, power installations, research plots, recreational vehicles (ATVs), etc.? _____

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



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
Rural Municipality of Britannia No. 502

(Name)

(Name)

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):

___ 1/4Section _____ Township_____ Range_____ W3 Meridian and/or
GPS Coordinates N _____ and W_____ as shown on the diagram attached,

OR Number, Street: _____ Town/City: _____

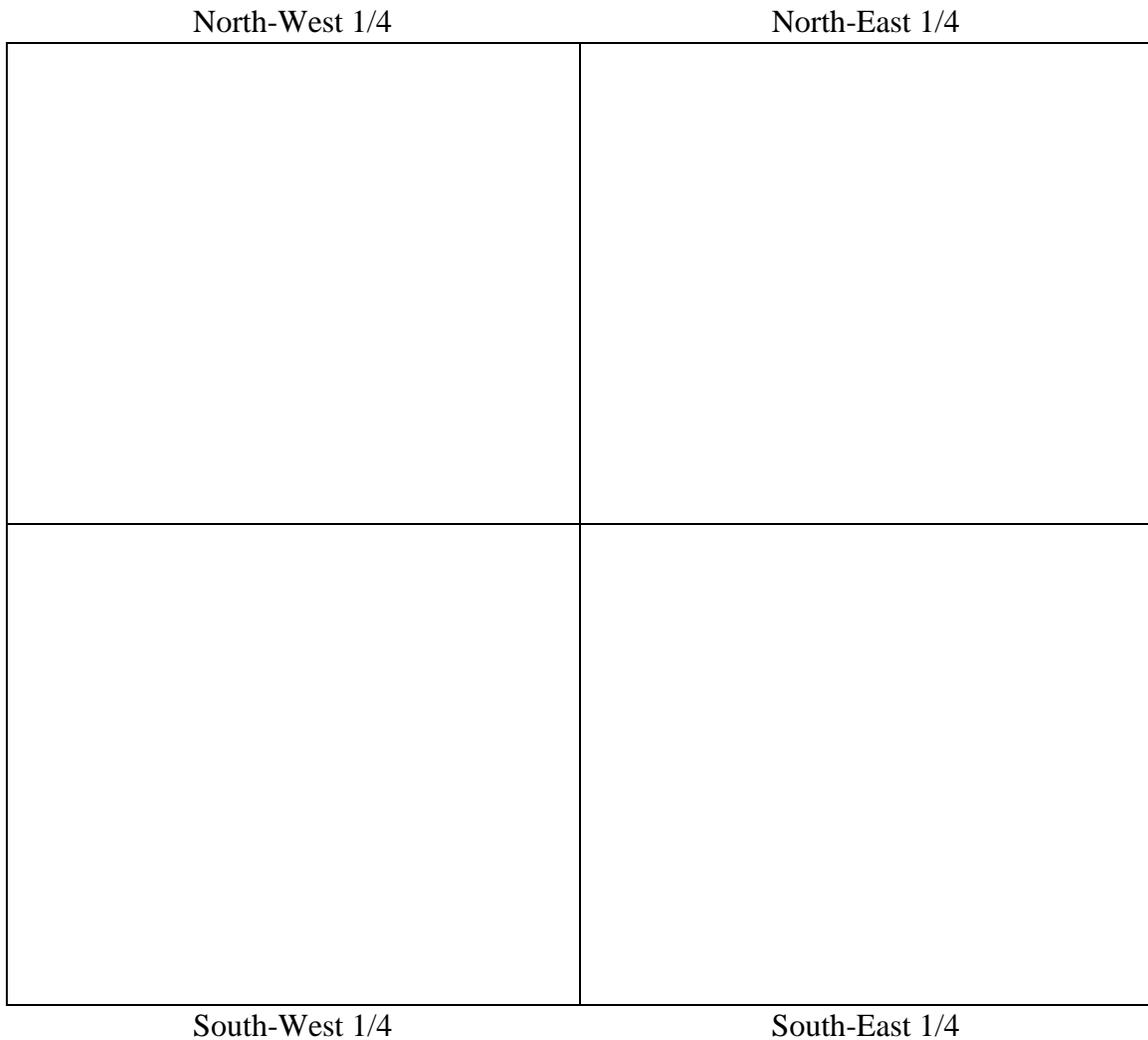
AND hereby agree to do the following work (specify details of the Clubroot Management Agreement including actions to be taken to control and prevent the spread of clubroot):

(Signed) _____
(Owner and Occupant)

(Signed) _____
(Pest Control Officer)

Rural Municipality of Britannia No. 502

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



Section _____ Township _____ Range _____ W3 Meridian and/or

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

Rural Municipality of Britannia No. 502

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):

1/4Section_____ Township_____ Range_____ W3 Meridian and/or

GPS coordinates: N _____ 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)

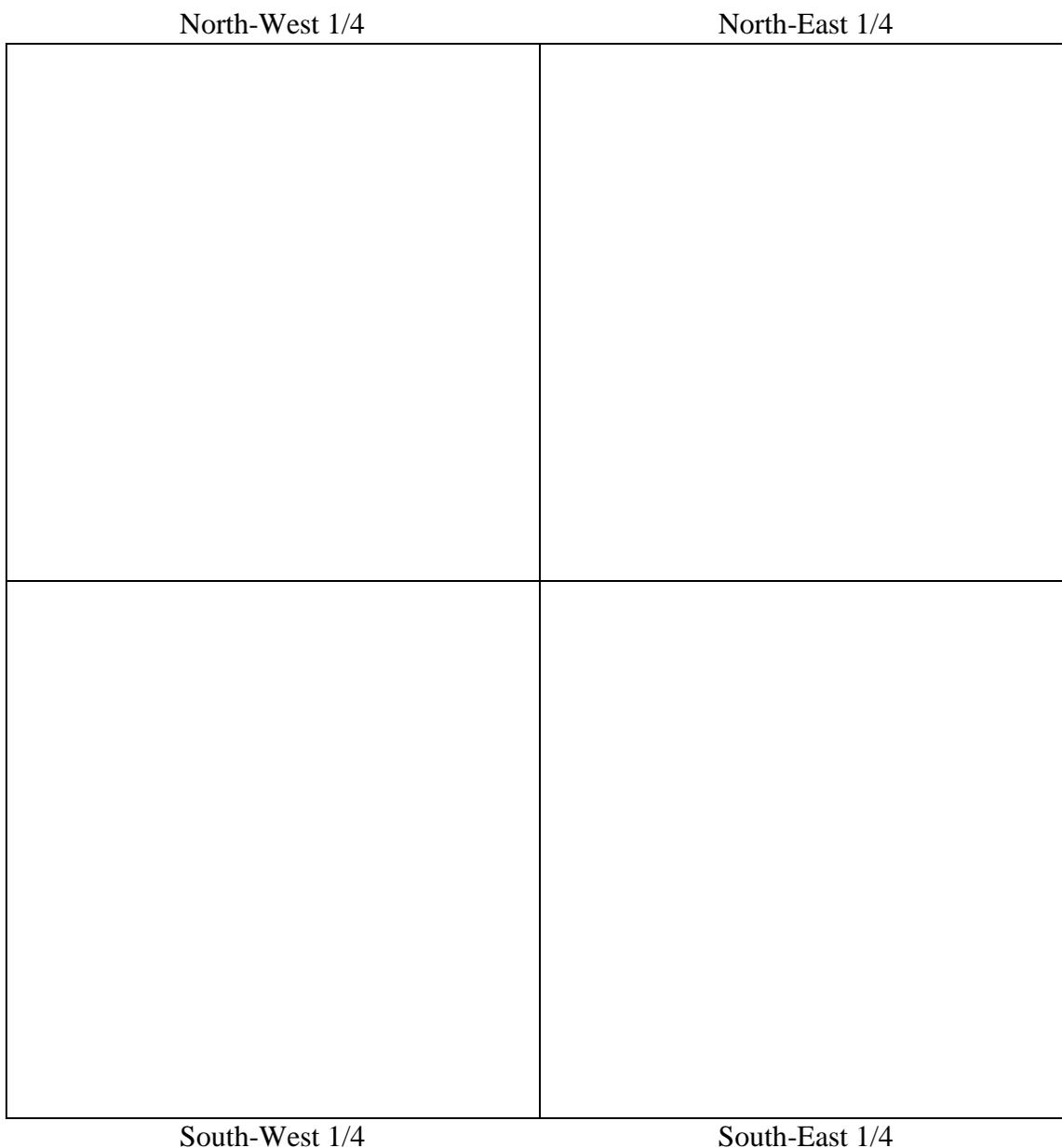
In accordance with the Clubroot Bylaw for the municipality, you are hereby notified:

(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).

(pest control officer)

Rural Municipality of Britannia No. 502

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



1/4Section _____ Township _____ Range _____ W3 Meridian and/or

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

Important Information:

For More Information on Clubroot

For more information on clubroot please visit www.clubroot.ca or www.agr.gov.sk.ca or contact the Saskatchewan Agriculture Knowledge Centre at 1-866-457-2377.

Management and Control Methods

If the Municipality or municipal appointed officer requires assistance devising an effective management plan or requires guidance on sampling techniques or control methods please contact your Division Plant Health Officer or the Saskatchewan Ministry of Agriculture's Provincial Specialist, Plant Disease at 306-529-4403 or Barbara.ziesman@gov.sk.ca.