

BYLAW NO. 1 -2018

RURAL MUNICIPALITY OF SASMAN NO. 336

M-11 (a)
M-11 (a)

PREVENTION AND CONTROL OF CLUBROOT DISEASE OF CRUCIFERS BYLAW

A BYLAW TO PREVENT AND CONTROL CLUBROOT

The Council of the Rural Municipality of Sasman No. 336 in the Province of Saskatchewan enacts as follows:

1. This Bylaw may be referenced as the "Clubroot Bylaw".
2. In this Bylaw:
 - a. "officer" means an officer within the meaning of *The Pest Control Act*;
 - b. "Municipality" means the Rural Municipality of Sasman No. 336.
3. Unless otherwise specified, the owner(s) and/or occupant(s) of land situated in the Municipality shall be responsible for carrying out the provisions of this Bylaw.
4. 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 club root, within 30 days of becoming aware of the same and provide the exact location of the disease using the attached form A. Completed form A should be returned to the office of the Rural Municipality of Sasman No. 336.
5. Notification of the presence of clubroot shall be in writing in Form "A", attached to and forming part of this bylaw.
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 twenty- four 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 shall pay a fine in the amount of \$ 1,000.00, which shall be indicated on the Bylaw Violation Notice.

10. This Bylaw shall come into force and take effect upon the final passing thereof.
Rural Municipality of Sasman No. 336



CERTIFIED A TRUE COPY

Shirley Allegant

Shirley Allegant
Reeve
Shirley Allegant
Administrator

*Read a third time and
adopted March 13, 2018,
Shirley Allegant*

CLUBROOT SURVEY PROTOCOL

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).

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. 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 five per cent bleach for soaking/cleaning tools	Five per cent bleach solution in misting bottle
per 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 (five per cent bleach) upon leaving the field.
 - Dispose of the disposable footwear in a sterile fashion. Sealing in a garbage bag and burning 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 each of five 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/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).

D.W.
D.W.

M-11 (a)
M-11 (a)

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 (five per cent bleach) upon leaving the field.
 - Dispose of the disposable footwear in a sterile fashion. Sealing in a garbage bag and burning 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.

D.N
J.W

CLUBROOT AGREEMENT

Agreement No. _____
Date of Agreement _____, 20____

Owner, Occupant or Operator _____
-and- Pest Control Officer _____
Agreement between _____

(Name)

(Address)

(Municipality) No. _____

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: _____

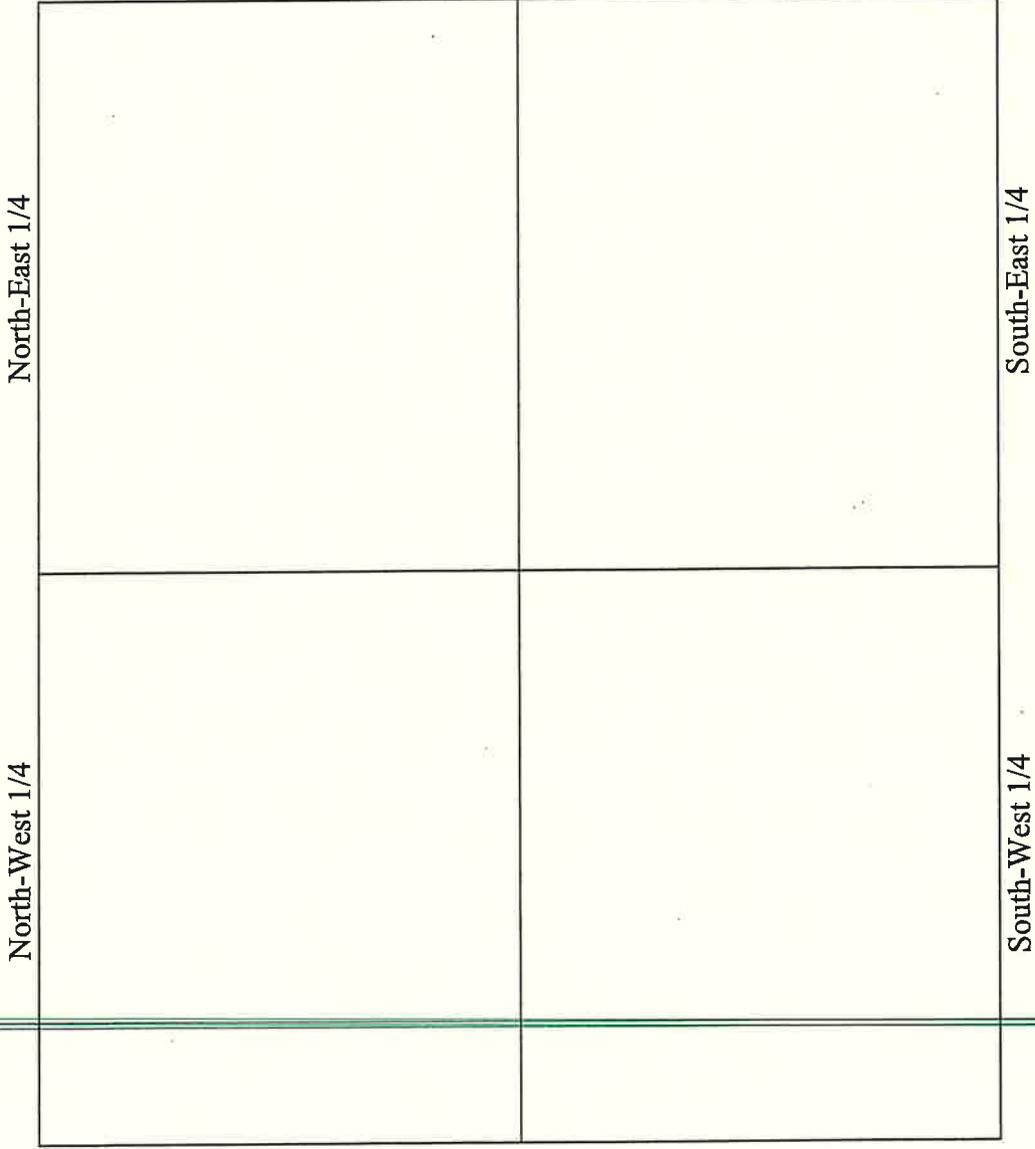
AND hereby agree to do the following work (specify work to be done):

(Signed) _____
(Owner and Occupant)

(Signed) _____
(Pest Control Officer)

*D.N.
AW*

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



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

*D.W.
K.W.*

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:

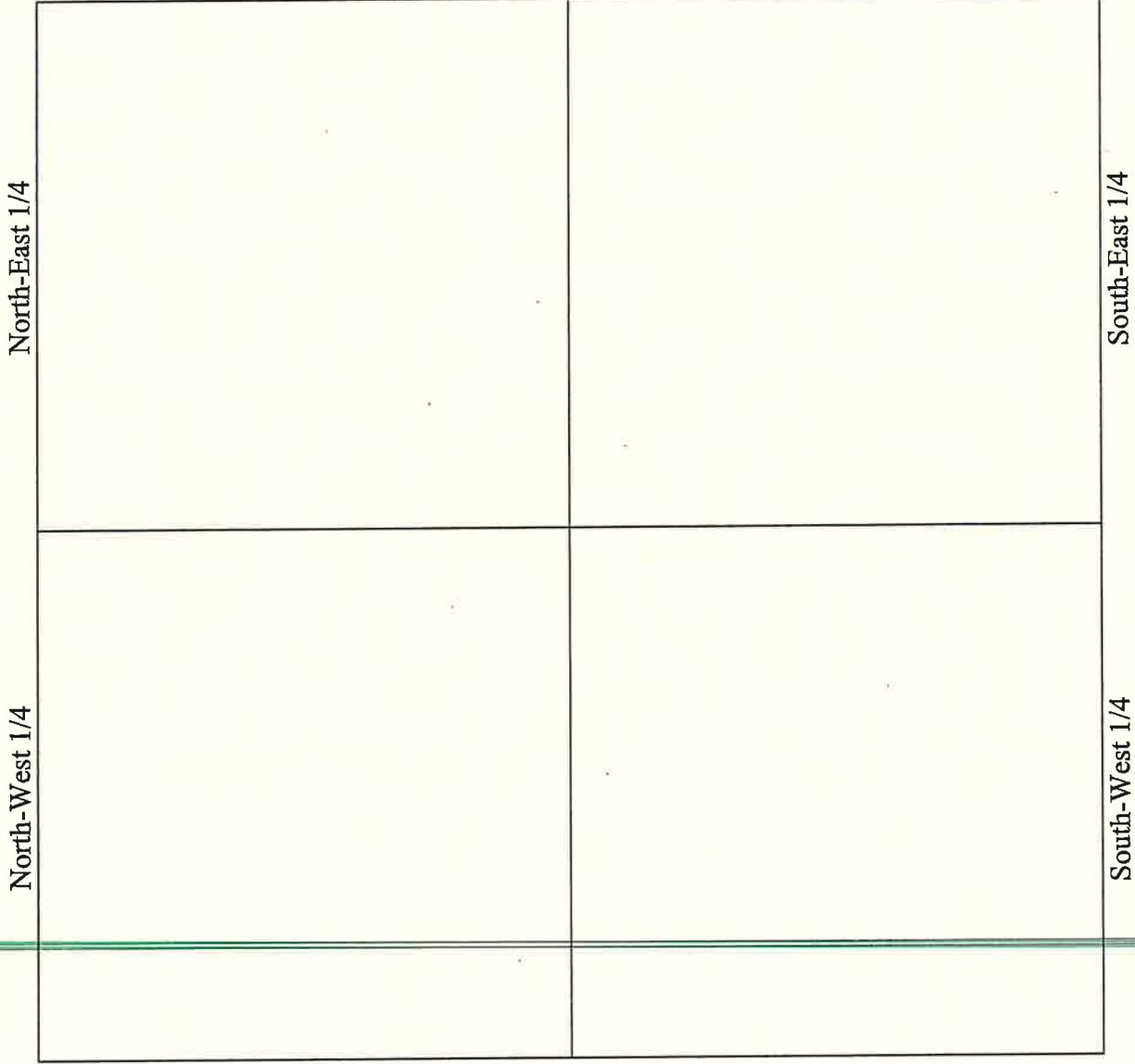
(Detail instructions including methods to be used to destroy clubroot or clean machine and setting out any prohibitions or other measures the Pest Control Officer considers necessary or appropriate)

(Pest Control Officer)

Municipality of _____ No. _____

*D.N.
K.W.*

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



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

*D.W.
A.W.*