RURAL MUNICIPALITY OF ABC NO. 000 POLICY REGARDING THE PREVENTION AND CONTROL OF CLUBROOT

POLICY NO. X-2012

1. Definitions
In this Policy:
   a) “officer” means an officer within the meaning of The Pest Control Act;
   b) “Municipality” means the Rural Municipality of ABC No. 000;
   c) “Council” means the Council of the Rural Municipality of ABC No. 000.

2. Policy Statement
The Municipality of _________________________ 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).

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

3. Procedures
   a) The Saskatchewan Clubroot Management Plan will 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.

   b) Clubroot field inspections will be conducted by officer(s) appointed by the Municipality to monitor for clubroot and/or enforce The Pest Control Act within the municipality.

   c) Clubroot survey procedures and the reporting form will follow standard protocols as recommended by the Saskatchewan Clubroot Initiative and the Saskatchewan Canola Disease Survey (see Schedule A).

   d) Clubroot confirmation must be obtained through observation of disease symptoms in a susceptible crop (either in the field or through bioassay - plants grown in a soil sample and observed for clubroot symptoms after six weeks) and detection of the pathogen's DNA in a plant or soil sample, obtained by laboratory testing.
Municipality of _________________________ Clubroot Policy

e) By way of the Municipalities Clubroot Bylaw (Bylaw Number) every owner and/or occupant of land shall notify the Municipality or appointed officer of the Municipality in which the land is located of the presence of clubroot, within 30 days of confirmation (as described above) of the presence of clubroot, and provide the exact location of the disease.

f) Personal survey information 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.

g) When land is verified positive for clubroot, the landowner(s) and/or occupant(s) will be consulted by the appointed municipal officer regarding the methods of control to be applied with a view to the most satisfactory treatment from the standpoint of him/her/them, as well as the community, in accordance with the Saskatchewan Clubroot Management Plan, entering into a written agreement with the Municipality using Form B.

h) The landowner(s) and/or occupant(s) may be required to take actions as deemed appropriate by the appointed municipal officer by way of an order to destroy, control and prevent the spread of clubroot on any land owned, occupied or controlled by him/her/them, following the best practices for prevention and management and proper sanitations measures outlined in the Saskatchewan Clubroot Management Plan, using Form C.

i) Adjacent landowners and any individuals or other parties who may be accessing the land must be prohibited from accessing the land or notified by the landowner(s) and/or occupant that clubroot is present on the land so they may limit traffic and/or ensure proper sanitation.

4. Adoption

________________________
Reeve

________________________
Administrator

Adopted this ____ day of ___________.

________________________
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.

Bylaws
If the Municipality would like to implement a bylaw regarding clubroot please see the attached Sample Bylaw. If you require assistance with clubroot bylaws please contact SARM at 306-757-3577.

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 the Saskatchewan Agriculture Knowledge Center at 1-866-457-2377.

Notifying Ratepayers
SARM has drafted a sample letter that could be sent to ratepayers informing them of clubroot and the importance of prevention and management of the disease. Please see the attached Sample Letter to Ratepayers.
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:

<table>
<thead>
<tr>
<th>Clubroot survey sheets (Form A)</th>
<th>Hand trowel</th>
<th>Disposable booties and gloves</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clipboard and pen</td>
<td>Pocket knife</td>
<td>Garbage bags</td>
</tr>
<tr>
<td>GPS unit or maps</td>
<td>Pail of five per cent bleach for soaking/cleaning tools</td>
<td>Five per cent bleach solution in misting bottle</td>
</tr>
<tr>
<td>Paper bags or boxes</td>
<td></td>
<td></td>
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</tbody>
</table>

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/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 (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](http://www.clubroot.ca) (click on Identify Clubroot) or contact the Crop Protection Laboratory in Regina.
CLUBROOT AGREEMENT

Agreement No. ____________________________

Date of Agreement _____________, 20 ___

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

("Name")

("Address")

("Municipality")

No. ___

("Name")

("Address")

("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 work to be done):

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

(Signed) ____________________________________________

(Owner and Occupant)

(Signed) ____________________________________________

(Pest Control Officer)
Municipality of ____________________________ Clubroot Policy
Form B

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
Municipality of ____________________________ Clubroot Policy
Form C

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. _______
**Municipality of ____________________________Clubroot Policy**  
Form C

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

<table>
<thead>
<tr>
<th>North-West 1/4</th>
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</table>

<table>
<thead>
<tr>
<th>South-West 1/4</th>
<th>South-East 1/4</th>
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</table>

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