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		Adopted: November 12, 2014	
			#512/14
Subject:		Control Code:	
	CLUBROOT OF CANOLA		11.34

Purpose:

To prevent the establishment and spread of Clubroot (*plasmodiophora brassicae*) in Camrose County; to provide control measures for infected lands; to increase landowner or occupant awareness of Clubroot (*plasmodiophora brassicae*).

Authority:

Under the *Agricultural Pest Act* it is a responsibility of a local authority to prevent the establishment of, or to control or destroy pests in the municipality. Under the *Pest and Nuisance Control Regulation* the inspector shall issue a Notice to Control Pests towards infested lands.

Statement:

The Camrose County Agricultural Service Board recognizes that Clubroot of Canola (*plasmodiophora brassicae*) is a serious pest problem and supports the principle to control Clubroot which is considered a pest under Alberta's *Agricultural Pest Act*.

Camrose County Agricultural Service Board recognizes the importance of canola as an economic crop for grain and oilseed producers and is aware of the implications that Clubroot has on Camrose County landowners and occupants.

Definitions:

- "Council" the Council of Camrose County.
- "Landowner" any person registered under the Land Titles Act as the owner, or a person who is in lawful possession of the property or who has the right to exercise control over the property.
- "Occupant" any person occupying or exercising control or having the right to occupy or exercise control over the land.
- "Appeal Committee" means the Camrose County Appeal Board.
- "Inspector" means a person appointed as an inspector by Camrose County under section 9(1) of the *Agricultural Pest Act*.
- "Infested" means having a condition that shows signs of the presence of a pest.
- "Low incidence" is defined as a field with a Clubroot field index less than 10.
- "Moderate incidence" is defined as a field with a Clubroot field index equal to or greater than 10 and less than 30.

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- “High incidence” is defined as a field with a Clubroot field index equal to or greater than 30.
- “Field” is defined as a continuous area on a property where a crucifer crop is growing or has been grown.

Policy Statements:

1. The Camrose County Agricultural Service Board will undertake a random inspection program for the presence of Clubroot (*plasmodiophora brassicae*) in canola crops.
2. Inspections will be conducted by the Agricultural Fieldmen or by inspector(s) appointed by Council.
3. Inspectors will follow procedures set of by the Agricultural Service Board in Clubroot of Canola Procedure #11.34P.
4. Positive identification of Clubroot (*plasmodiophora brassicae*) shall be confirmed by certified laboratory testing. When Clubroot is confirmed in a field, a NOTICE TO CONTROL PESTS will be issued for that field. **Schedule “D”**
5. The NOTICE TO CONTROL PESTS will include but not limited to the following measures;
 - a. Low Incidence:
 - i. A Clubroot Management Plan focusing on education, drafted and agreed upon by both the landowner or occupant and the Agricultural Fieldman,
 - ii. The landowner or occupant disturbing the soil shall be encouraged to following best management practices set out by Alberta Agriculture and Rural Development to reduce the spread of disease through the movement of soil and equipment.
 - b. Moderate and High Incidence:

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- i. The Notice to Control Pests will prohibit growth of canola, mustard, or crops susceptible to Clubroot infection for a period of three (3) years (1 in 4 crop rotation),
 - ii. Areas that have been prohibited from growth of canola may be seeded with a recommended Clubroot resistant variety after the periods outlined and subject to the approval of the producer's Clubroot Management Plan. Varieties with different sources of resistance should be used on a rotational basis.
 - iii. The landowner or occupant disturbing the soil shall be responsible for following best management practices set out by Alberta Agriculture and Rural Development to reduce the spread of disease through the movement of soil and equipment.
 - c. High Incidence:
 - i. Areas with a high incidence of Clubroot will be target inspected monitoring for signs of breakdown in resistance.
6. When a NOTICE TO CONTROL PESTS is issued to the landowner, and the appeal period completed, a written notification of the location of the infested field will be mailed to all adjacent landowners of the affected property.

Schedule "E"
7. All Camrose County Departments having employees, equipment, or vehicles which may enter onto agricultural land will develop and implement good sanitation practices to restrict the movement of possibly contaminated soil or crop residues.
8. Camrose County Public Works will advise Agricultural Services of future road construction projects as soon as they are confirmed.
 - a. The Agricultural Fieldman or Assistant will inspect the proposed construction area for presence of Clubroot (*plasmodiophora brassicae*).
 - b. If a presence of Clubroot (*plasmodiophora brassicae*) is found the road construction contractor will be notified of condition and advised to follow the sanitation best management practices.

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9. Prohibited crops grown in contravention with the NOTICE TO CONTROL PESTS will be destroyed using any appropriate means. Landowner or occupant will not be compensated for loss of crop.
10. The landowner or occupant will be invoiced for laboratory analysis expenses associated with this policy.
11. A landowner or occupant who feels personally aggrieved by the notice issued by an inspector under Section 12 of the *Agricultural Pests Act*, may appeal in writing to the local authority. The appeal against the notice must be served on the Municipal Secretary, accompanied by a deposit of \$100.00, before the expiry of the time limit stated or a period of ten days from service of the notice, whichever expiry date occurs first, and otherwise made in accordance with the *Agricultural Pests Act*.

PROCEDURE

Purpose:

To define the procedures for completing field inspections used in the monitoring of Clubroot (*plasmodiophora brassicae*) established under Policy 11.34 Clubroot of Canola.

Equipment and Materials Required:

Pest Inspector's badge, County map, Clipboard, Field record sheets, Disinfectant hand towels, Hand Trowel, Paper bags, 2% bleach solution, Plastic pail, Disposable boot covers, Garbage bags, and GPS unit.

Symptoms:

Plasmodiophora Brassicae pathogen infects the roots of susceptible hosts, causing the formation of club-shaped galls or swellings that restrict the uptake of water and nutrients by the plant. Above ground symptoms include yellowing, stunting, premature ripening and wilting of plants under moisture stress. As symptoms may take six to eight weeks to develop, they become most noticeable in the summer (late July – August). Clubroot disease can also affect weeds in the Crucifer family, such as shepard's-purse, stinkweed, and wild mustard. These common weeds can be assessed for visual

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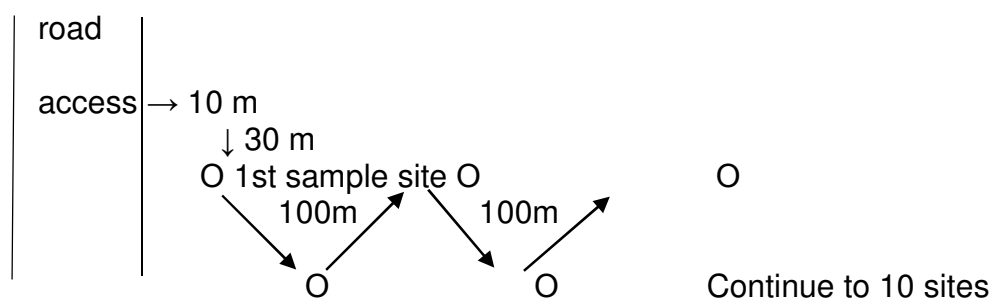
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Procedure Statements:

1. Clubroot field inspections will be conducted by the Agricultural Fieldmen or inspectors appointed by Council.
2. Upon selecting targeted fields of canola, pull over to the side of the road to park. Turn on the hazard warning lights. Do not drive into the field or field access.
3. Locate field on map, record location on map and on the field inspection report.
4. Put on disposable boot covers. This will stop the transfer of soil from one site to the next.
5. During the initial scouting (July – August) the inspector will focus in the primary field entrance, lease road, sloughs, water runs, and other areas identified as suspect.
6. During the confirmation survey (Post swathing) the inspector will survey the field in a “W” pattern, sampling several sites within the travel pattern.
 - a. Begin 30 m to the right of the field access. 10 m from field edge and allow 100 m between sampling points.



- b. At each site, record the GPS location and dig up the roots in a square meter.
- c. Shake excess soil off the roots and visually inspect for the presence of galls.
- d. Sort and grade the roots with respect to the level of galling into four groups;
 - i. No galling present on roots,
 - ii. Few small galls present less than 1/3 of roots,

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- iii. Small to medium sized galls present on 1/3 to 2/3 of roots,
 - iv. Medium to large galls present on more than 2/3 of roots,
 - e. Record number of roots within each score on the field inspection report.
- Schedule “A”** This data will be used to determine the clubroot field index by the Agricultural Fieldmen. **Schedule “B”**
7. When the suspected presence of clubroot is found upon a plant, the inspector shall take a tissue sample (cut off the stem, submit root) of the plant. This sample is to be placed into a sample bag, sealed, recorded, and marked with the field reference. Combine root samples (5 to 10 root specimens) from individual sample sites within the field for submission to lab.
 8. Prior to leaving field, discard disposable boots into a garbage bag. If rubber boots were used, remove clumps of soil, wash thoroughly, draining waste water in the field area.
 9. Wash sampling tools, place tools and or rubber boots in a 2% bleach solution for fifteen minutes to allow for disinfection.
 10. All samples collected during scouting will be forwarded to the accredited lab for positive identification on a daily basis.
 11. When land is verified positive for clubroot the landowner shall be notified in writing with a legal land notice under the *Agricultural Pests Act*. **Schedules “C” & “D”**
 - a. The notice will detail the control measures and best management practices identified in Clubroot of Canola Policy 11.34.
 - b. The landowner or occupant of the land who are disturbing the soil will have the responsibility to follow best management practices set out by Alberta Agriculture Rural Development to reduce the spread of disease with the movement of soil and equipment.
 12. Soil samples will be taken prior to initiation of road construction and maintenance projects.
 - a. A composite sample will be collected within the municipal right-of-way adjacent each quarter along the proposed project area and proposed location of borrow pit(s).
 - b. At each sampling point, all loose organic matter from the soil surface will be cleared and a composite soil sample will be collected from the top 5 – 10 cm of the A-horizon without taking any of the B-horizon. If the A-

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horizon is shallow, a sample from a depth of less than 5 cm will be obtained.

- c. Latex gloves will be worn for soil sampling, handling and will be changed between each field. Gloves will be disposed of in a garbage bag when changed and the garbage bag will be disposed of approximately upon completion of the sampling.
- d. Inspectors will follow the sanitation procedures outlined in sections; 4, 8, and 9.
- e. The 500 gram representative samples will be forwarded to an accredited laboratory for the standard Polymerase Chain Reaction analysis.
- f. A written notification will be sent to landowners adjacent from a location confirmed positive with Clubroot.

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