Current Situation ofClubroot in Alberta: February 2012

Murray Hartman

Oilseed Specialist

Alberta Agriculture and Rural Development

Government of Alberta

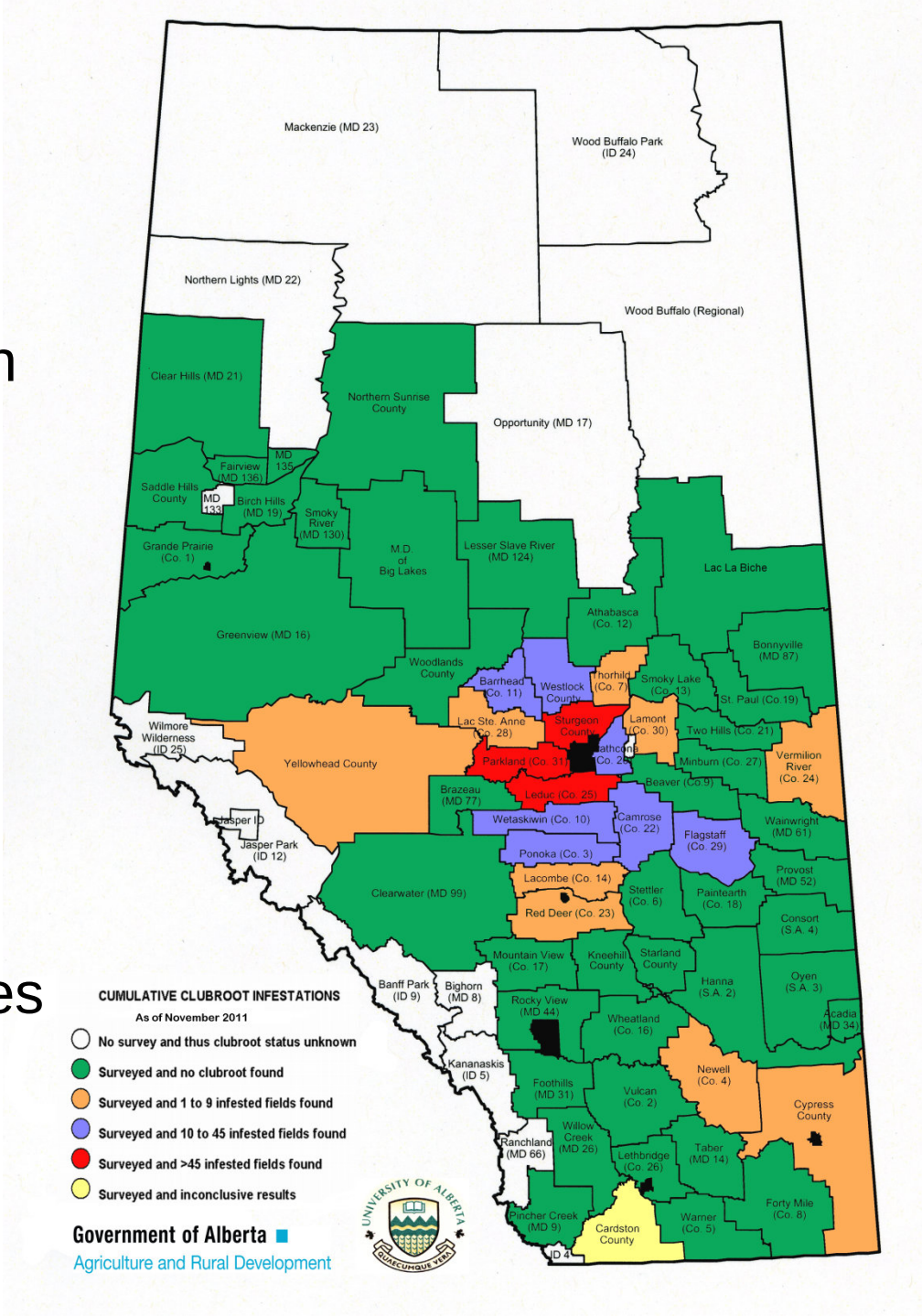
2011 survey results:

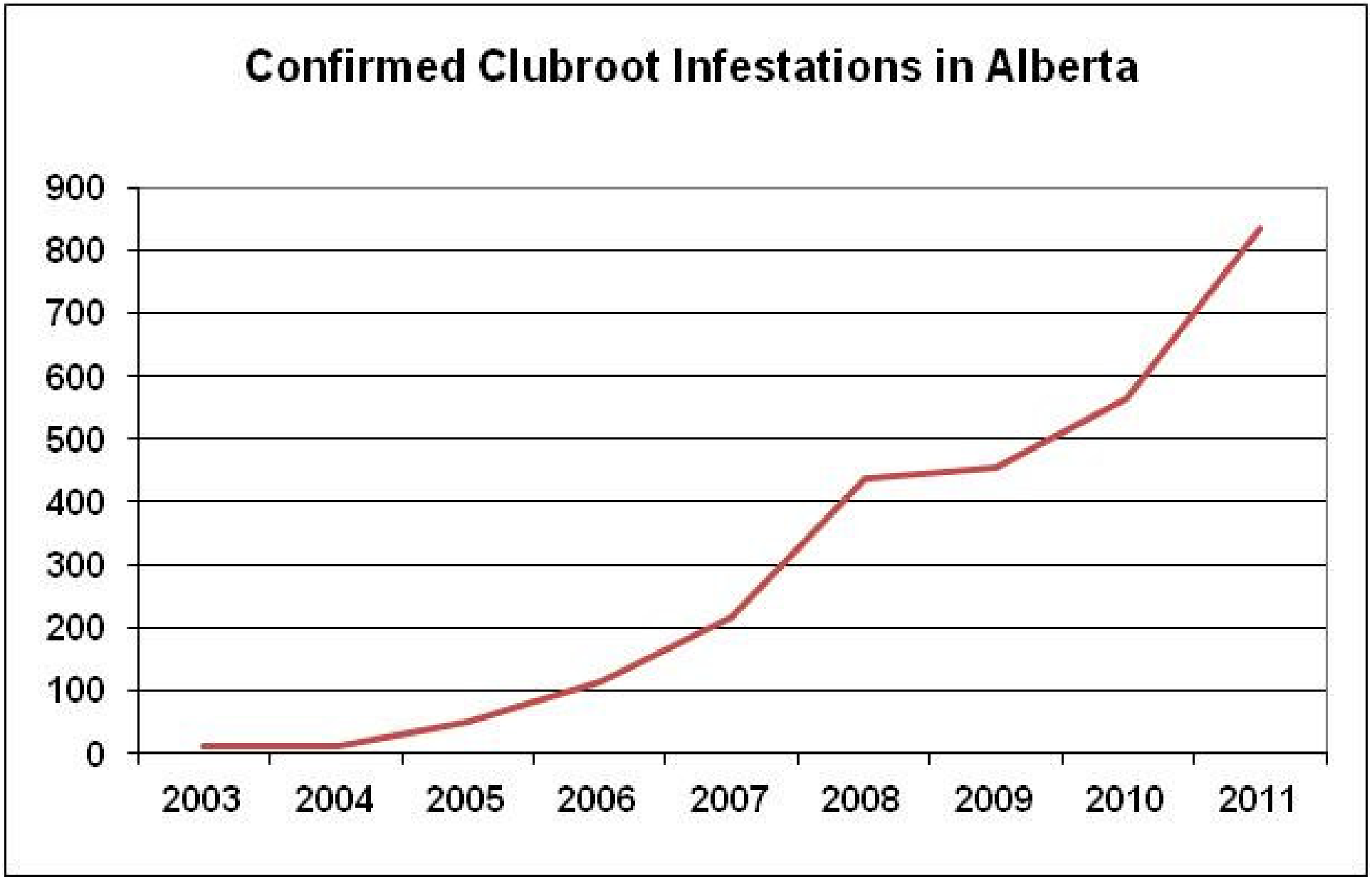
U of A: 447 fields surveyed in 21 counties

- •103 infested fields found
  - •2 new counties
- •1 county changed from suspect

To date over 800 fields

County led surveys in 2011 identified 162 additional cases




Confirmed Clubroot Infestations in Alberta
900
800
700
600
500
400
300
200
100
0
2003
2004
2005
2006
2007
2008
2009
2010
2011

Alberta Clubroot Management Plan

- Revised in 2010 to include use of resistant hybrids
- Best Management Practices:
  1. Use resistant hybrids
  2. Use long rotation – 1 in 4
  3. Control crucifer weeds
  4. Sanitation
  5. Use direct seeding/zero till
  6. Restrict traffic
  7. Create new field entrances
  8. Scout
  9. Avoid contaminated inputs

Municipal Clubroot Policies April 2011

MAUREEN VADNAIS, B.SC.AG.
ACTING SUPERVISOR, ASB PROGRAM
PHONE: 780.644.4432
EMAIL: MAUREEN.VADNAIS@GOV.AB.CA

Notification of Infestation

Notice

12(1) When an inspector is of the opinion that land, property or livestock contains or is likely to contain a pest or should be protected against a pest, the inspector *may* issue a notice in writing directed to the owner or occupant of the land or property or to the owner or person in control of the livestock

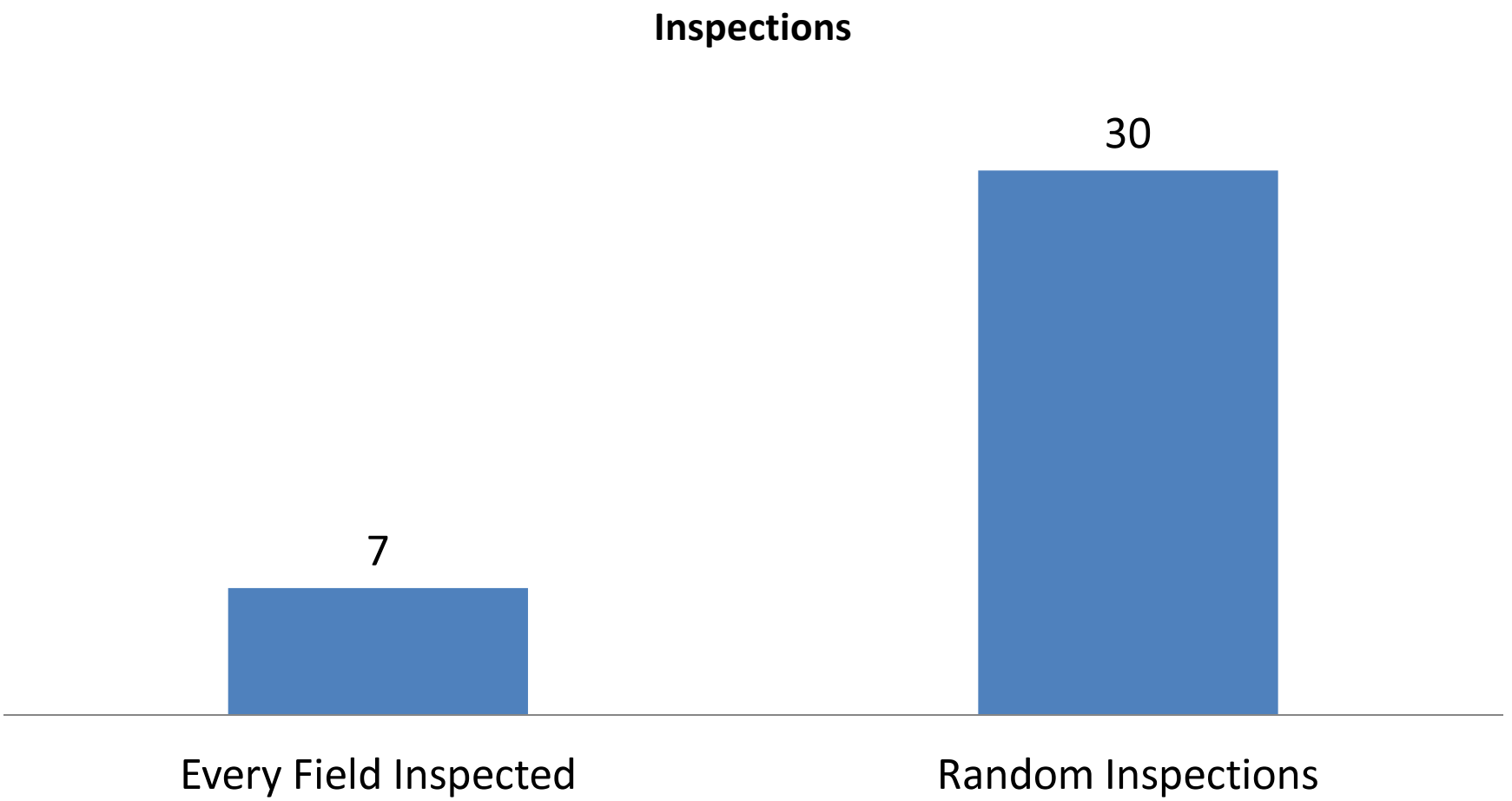
Issuance of Notices

- Notice issued automatically upon confirmation of clubroot
  - 25
- Management Plan/Work with Producer
  - 8
  - Notices issued if producer doesn't comply
- Combination

Notices

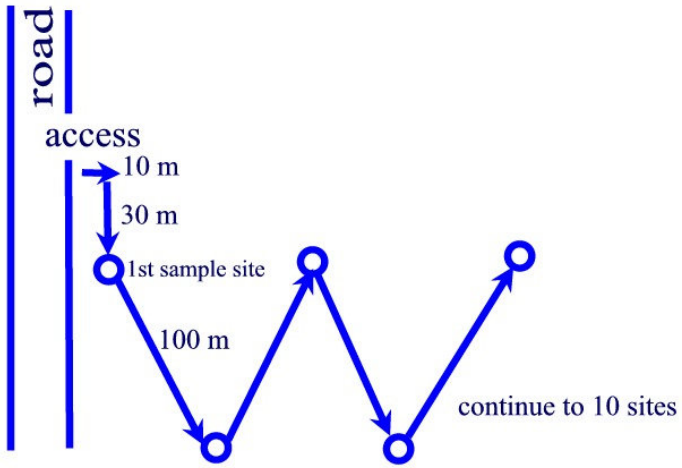
- Cropping Restrictions
  - **Follow the Clubroot Management Plan (7)**
    - Three years out of canola, then plant a resistant variety
  - **4 years (10)**
    - **4 years, then plant a resistant variety (2)**
  - **5 years (7)**
  - **% Incidence of Disease (4)**
    - <20% = 3 years, then resistant variety
    - ≥ 20% = 5 years, then resistant variety
      - One municipality more strict
        - » Low incidence = 4 years; Moderate to high incidence = 7 years

Surveying


Inspections
30
7
Every Field Inspected
Random Inspections

Survey Techniques

Intensive Survey (4)



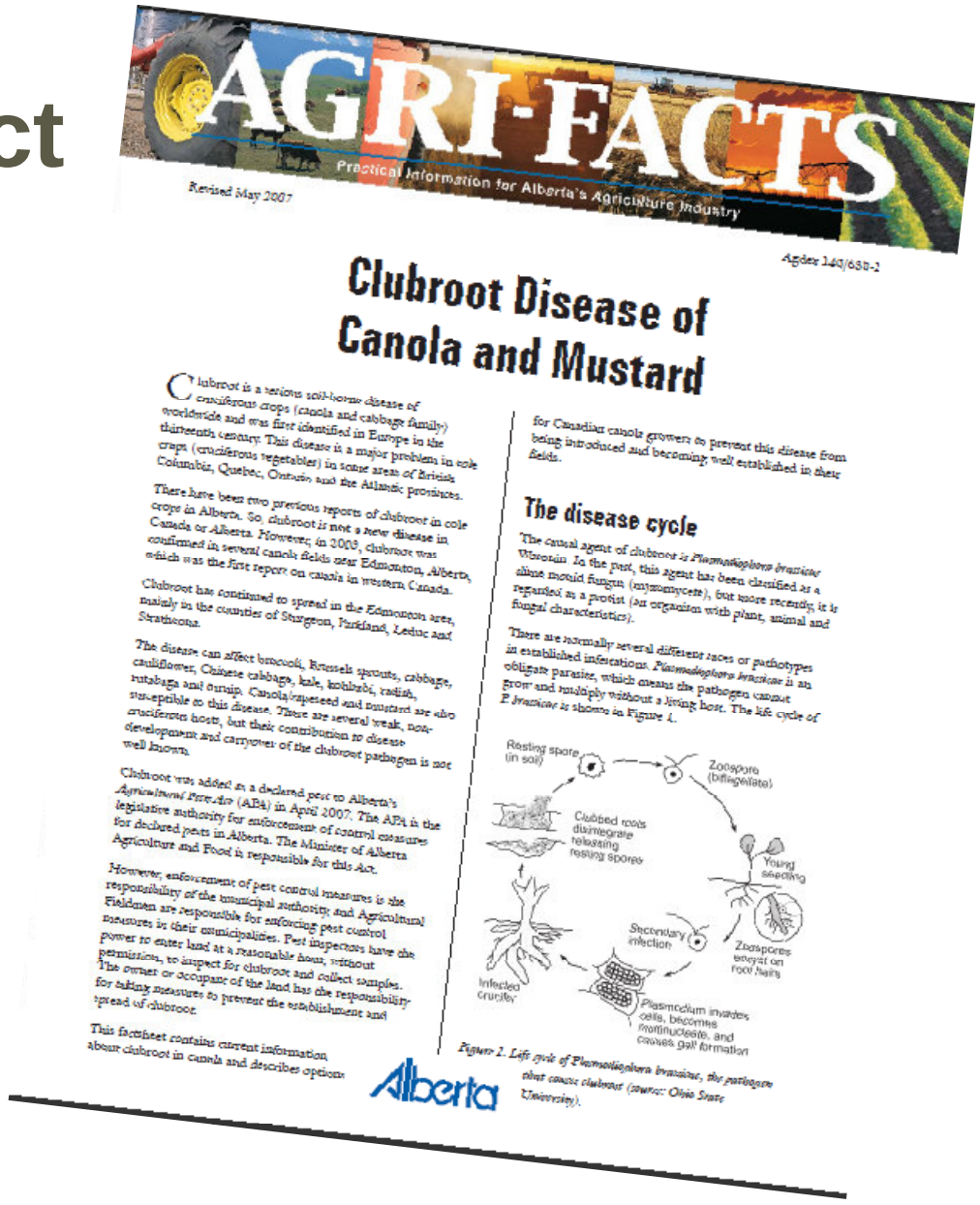
Visual/Target Survey

Next steps

- Revise guidelines for municipalities
  - actions to take with respect to degree of infestation in field and amount already present in county
- Pest Act revision in next 2 years

Alberta Clubroot Fact Sheet

- Revised 2011



AGRI-FACTS

Practical Information for Alberta's Agriculture Industry

Revised May 2007

Agdex 140/638-2

Clubroot Disease of Canola and Mustard

Clubroot is a serious soil-borne disease of cruciferous crops (canola and cabbage family) worldwide and was first identified in Europe in the thirteenth century. This disease is a major problem in cole crops (cruciferous vegetables) in some areas of British Columbia, Quebec, Ontario and the Atlantic provinces.

There have been two previous reports of clubroot in cole crops in Alberta. So, clubroot is not a new disease in Canada or Alberta. However, in 2003, clubroot was confirmed in several canola fields near Edmonton, Alberta, which was the first report on canola in western Canada.

Clubroot has continued to spread in the Edmonton area, mainly in the counties of Sturgeon, Parkland, Leduc and Strathcona.

The disease can affect broccoli, Brussels sprouts, cabbage, cauliflower, Chinese cabbage, kale, kohlrabi, radish, rutabaga and turnip. Canola/rapeseed and mustard are also susceptible to this disease. There are several weak, non-cruciferous hosts, but their contribution to disease development and carryover of the clubroot pathogen is not well known.

Clubroot was added as a declared pest to Alberta's *Agricultural Pests Act* (APA) in April 2007. The APA is the legislative authority for enforcement of control measures for declared pests in Alberta. The Minister of Alberta Agriculture and Food is responsible for this Act.

However, enforcement of pest control measures is the responsibility of the municipal authority and Agricultural Fieldmen are responsible for enforcing pest control measures in their municipalities. Pest inspectors have the power to enter land at a reasonable hour, without permission, to inspect for clubroot and collect samples. The owner or occupant of the land has the responsibility for taking measures to prevent the establishment and spread of clubroot.

This factsheet contains current information about clubroot in canola and describes options for Canadian canola growers to prevent this disease from being introduced and becoming well established in their fields.

The disease cycle

The causal agent of clubroot is *Plasmodiophora brassicae* Woronin. In the past, this agent has been classified as a slime mould fungus (myxomycete), but more recently it is regarded as a protist (an organism with plant, animal and fungal characteristics).

There are normally several different races or pathotypes in established infestations. *Plasmodiophora brassicae* is an obligate parasite, which means the pathogen cannot grow and multiply without a living host. The life cycle of *P. brassicae* is shown in Figure 1.

Figure 1. Life cycle of Plasmodiophora brassicae, the pathogen that causes clubroot (source: Ohio State University).

Alberta