2008 Alberta Clubroot Survey

Clubroot summit
Nisku, AB
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Clubroot Survey 2008

- Objective: Achieve broad provincial coverage and survey a large number of canola, mustard and cole crop vegetable fields

- Three main survey groups:
  - University of Alberta (S.E. Strelkov & V.P. Manolii)
    - Focused on previously non-surveyed areas in central AB
    - Visited about 375 fields in 15 counties
    - 18 new infestations
  - Alberta Agriculture and Rural Development (R.J. Howard)
    - Focused on southern Alberta
    - Visited about 95 fields in 13 counties
    - 2 new infestations, 3 suspects / inconclusive
  - Agriculture Service Boards
    - Mostly conducted by counties growing canola and mustard
    - ASB staff visited about 4000 fields
    - Wide range of survey methods
    - ~140 new infestations
Cumulative Survey Results end of 2008

**White** – Areas not surveyed and clubroot status unknown (18 areas or counties)

**Green** – Areas surveyed and no clubroot found (38)

**Yellow** – Clubroot suspected but still under investigation or lab test results inconclusive (8)

**Red** – Clubroot confirmed by visual observations and lab tests (16)
## Clubroot in Alberta

<table>
<thead>
<tr>
<th>10 or more fields</th>
<th>3-9 fields</th>
<th>1-2 fields</th>
<th>Clubroot-free</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sturgeon (&gt;100)</td>
<td>Wetaskiwin</td>
<td>Lacombe</td>
<td></td>
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<tr>
<td>Leduc (&gt;100)</td>
<td>Strathcona</td>
<td>Lac Ste. Anne</td>
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<tr>
<td>Parkland (&gt;40)</td>
<td>Barrhead</td>
<td>Yellowhead</td>
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<tr>
<td>Edmonton (15)</td>
<td>Camrose</td>
<td>Cypress</td>
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<tr>
<td>Westlock (10)</td>
<td>Flagstaff</td>
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<td></td>
<td>Ponoka</td>
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<td>Newell</td>
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</tbody>
</table>


38 counties / municipalities
More detailed infestation maps

- Numerous requests from energy and agriculture industries for specific locations of infestations
  - FOIP, Agricultural Pest Act
  - Danger of disclosing only known infestations
- To do in 2009: create clickable map to link to county map with greater detail
  - Level of detail will depend on county
Sturgeon County
Clubroot Map
2008

Affected Areas
2008 Test Results
- Negative for clubroot symptoms
- Positive - Clubroot Found

NOTE:
841 of approximately 350 canola fields were tested in 2008. Only the tested sites are indicated.

Kilometers

Date: Feb 2008
File: Infrastructure/Ag/Clubroot.
Challenges with the 2008 Survey

- Clubroot appeared in some unexpected areas, e.g. Wheatland, Cypress, Warner, Lethbridge and Cardston Counties
- Some clubroot “look-alikes” were encountered
  - Lethbridge canola quality juncea hybrid seed field
- Some conflicting lab test results were obtained, e.g. “false positives” and “false negatives”
  - Grande Prairie, Minburn, Ponoka
- Harmonizing clubroot sampling protocols between various groups became an issue and was discussed in a meeting at Olds College on July 14
- Criteria used to declare fields “clubroot positive” were questioned
Clubroot look-alikes
Quality Assurance for Lab Testing

- Due to suspected false positives and perhaps a few false negatives during lab tests, a pilot project has been initiated between the:
  - Three commercial labs doing the PCR test (20/20 Seed labs, BioVision Seed Labs & Benchmark Labs)
  - Canola Council of Canada
  - University of Alberta

- The project will assess the consistency of labs in identifying known clubroot samples, and their ability to detect low spore concentrations (establish detection limits)

- May lead to a voluntary quality assurance program amongst the labs

- Clubroot not a quarantine pest and therefore CFIA regulation/accreditation is not possible
Criteria for Clubroot Confirmation

- The designation of a clubroot infestation needs the following in order of importance:

  1. Visible root gall symptoms in the field, typically in a patchy pattern
     - Usually adverse effects on top growth are visible
  2. Positive PCR test on root material and / or microscopic identification of pathogen structures
     - Plasmodia, sporangia, resting spores
  3. Positive PCR test on soil / or bio-assay