

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

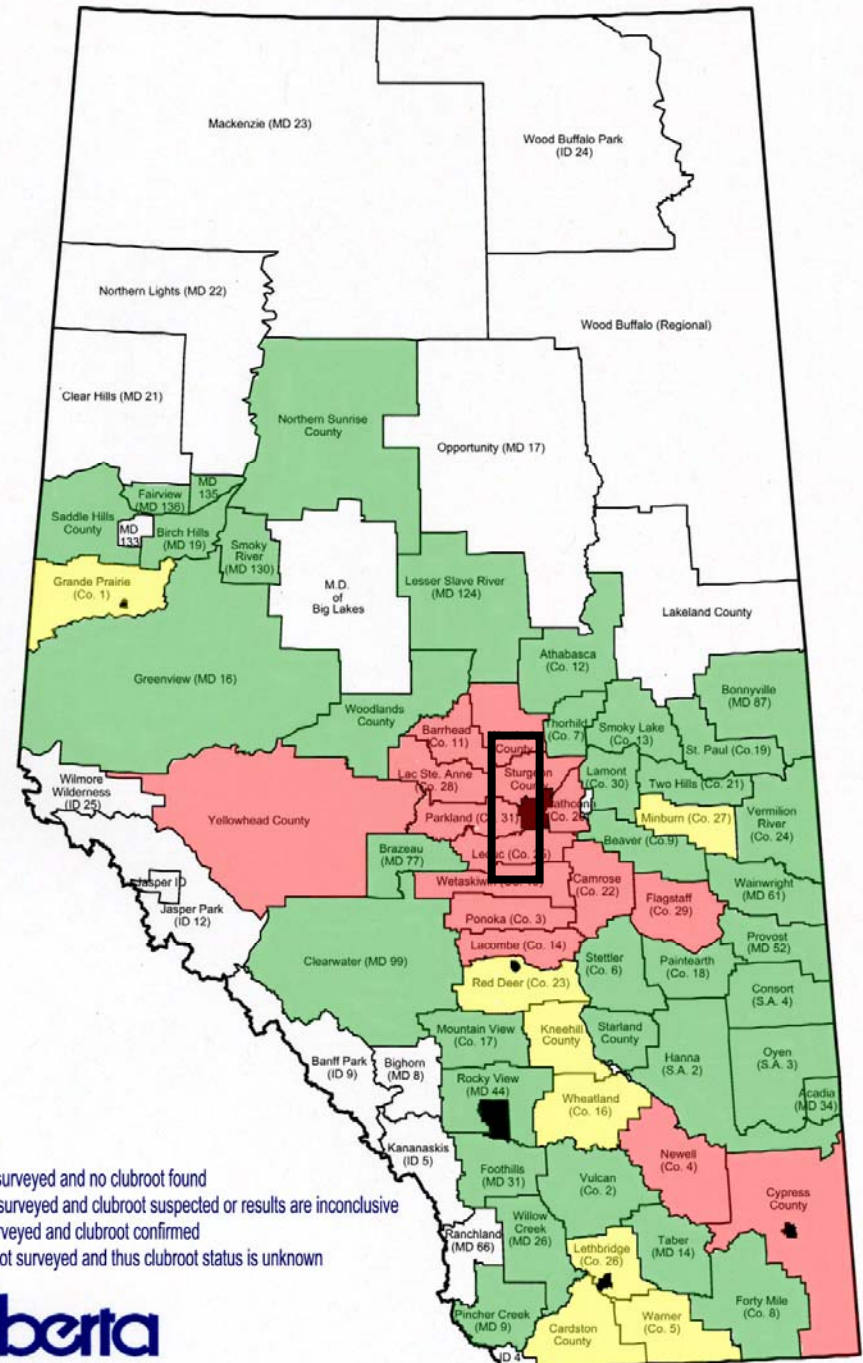
Cumulative Survey Results end of 2008

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

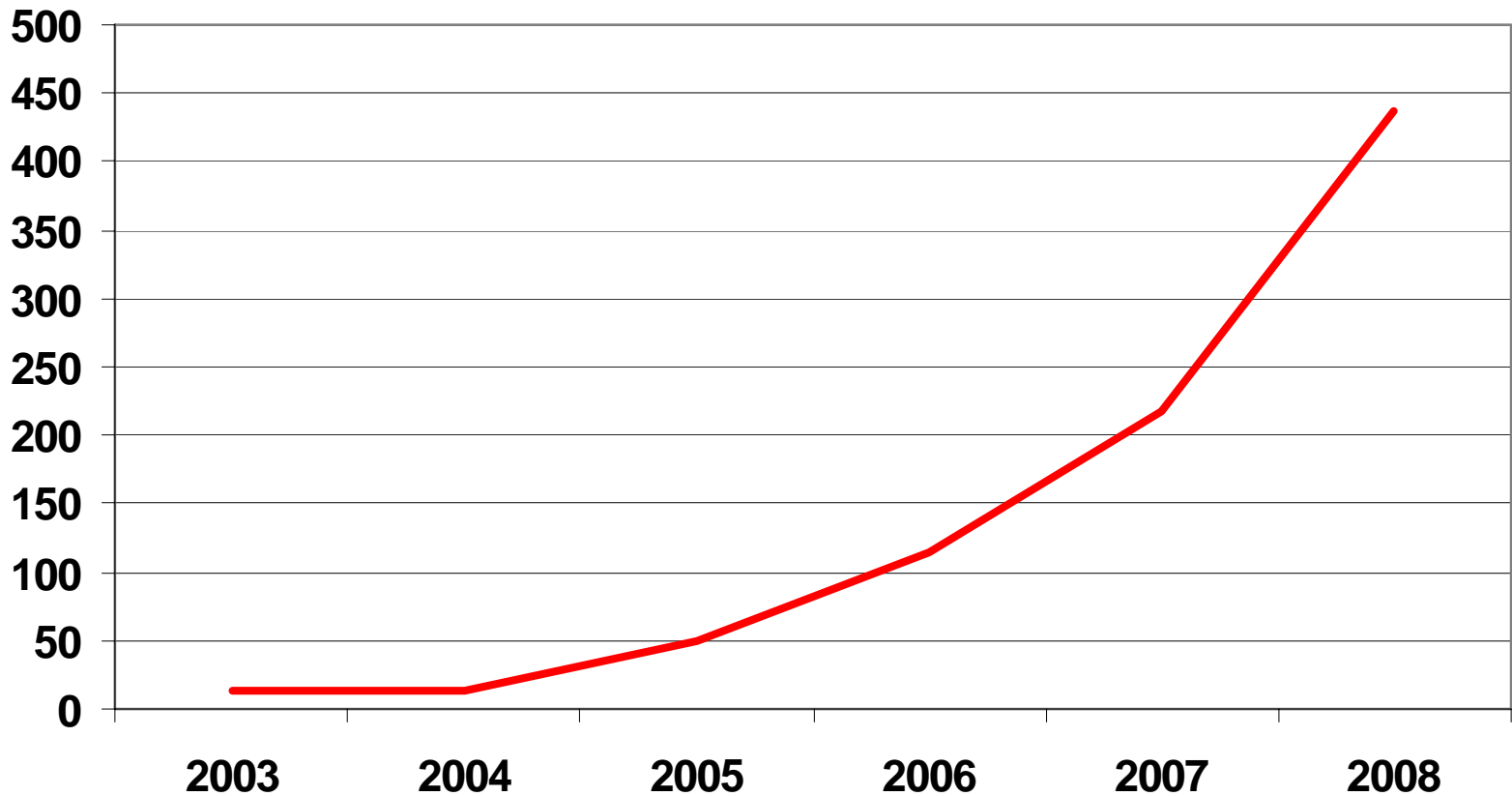
Green – Areas surveyed and no clubroot found (38)

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

Red – Clubroot confirmed by visual observations and lab tests (16)



Confirmed Clubroot Infestations in Alberta

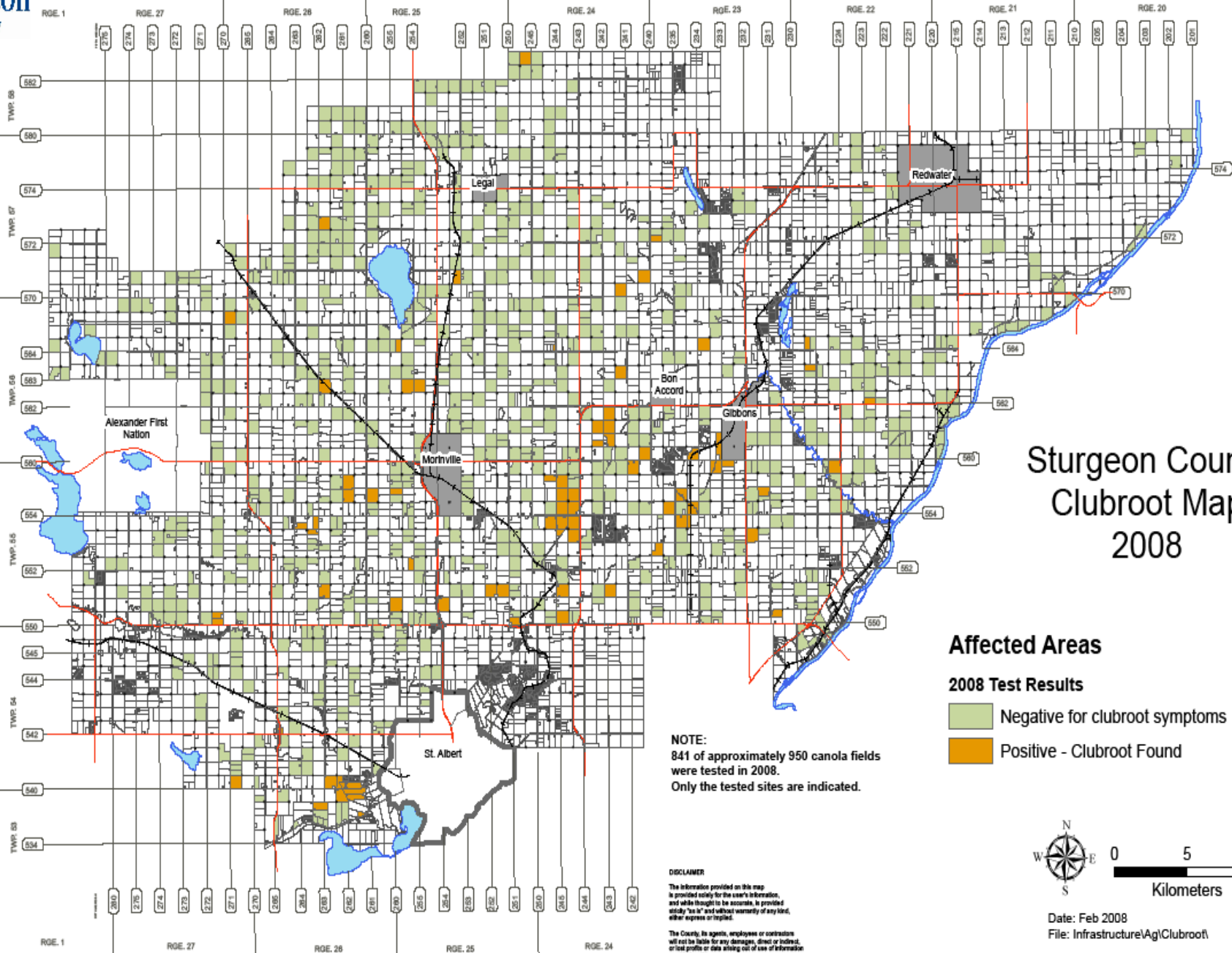


Clubroot in Alberta

10 or more fields	3-9 fields	1-2 fields	Clubroot-free
Sturgeon (>100)	Wetaskiwin	Lacombe	
Leduc (>100)	Strathcona	Lac Ste. Anne	38 counties / municipalities
Parkland (>40)	Barrhead	Yellowhead	
Edmonton (15)	Camrose	Cypress	
Westlock (10)	Flagstaff		
	Ponoka		
	Newell		
	Potential / Inconclusive		
	Cardston, Kneehill, Grande Prairie, Lethbridge, Minburn, Red Deer, Wheatland, Warner		

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

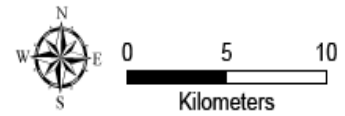
Affected Areas

2008 Test Results

- Negative for clubroot symptoms
- Positive - Clubroot Found

NOTE:
841 of approximately 950 canola fields were tested in 2008.
Only the tested sites are indicated.

DISCLAIMER
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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