

# CROPEST ONTARIO

Inside Issue 13 (2007):	Pg.
Soybean Cyst Nematode in Eastern Ontario? It's True!	1
Soybean Rust Increasing in Texas and Louisiana! Should We Be Concerned?	3
DNA Multiscan – New Diagnostic Test for Multiple Pathogens	4

**Soybean Cyst Nematode in Eastern Ontario? It's True!**

**Albert Tenuta, Field Crop Plant Pathologist, OMAFRA, Ridgeway**

There has been considerable speculation over the past couple of years concerning SCN and its presence east of Toronto. A few SCN soil test results indicated a low population of SCN may be present but at no time had SCN been found on soybean roots. I would like to thank Laura McCormack and Jeff Harrison with Pioneer Hi-Bred for notifying me of a potential field in the Trenton area (Northumberland county).

On July 16, I visited this field and was very surprised at not only the amount of damage but the number of cysts on the roots. Based on these observations this is not a new infection and most likely has gone undetected for 10, 15 or more years. This is a common difficulty with SCN detection. The damage is often attributed to many other common problems and only after considerable injury and a significant population build-up does the disease become obvious.



Although this may for some be considered bad news I would argue that it is in fact good news! No I haven't been out in the sun too long or lost my marbles.

Although more fields will be found similar to this first field, they will most likely be the exception and not the norm. As with all new areas, more fields will be confirmed with SCN and the vast majority will be at very low levels.

This is where the good news comes in! We have the tools available to manage SCN. By using SCN resistant varieties, rotation with non-host crops such as corn, wheat and SCN soil testing the disease can be managed effectively and with minimal pain. What is required however to combat this disease is awareness and diligence by the grower and ag retailers.

Now is the time that all growers in the province, whether you are in a known SCN are or not, check their fields since SCN damage is obvious in many parts this summer. SCN thrives under stressed growing conditions. If you suspect SCN (or not), dig up the plants and examine the roots for the presence of cyst. Examining the roots is a good practice and should be done routinely throughout the season not only for SCN but other diseases, insects, soil issues, etc.

It is not a surprise to find SCN in the east and we all knew it would be just a matter of time. For these reasons, OMAFRA and AAFC along with the Canadian Food Inspection Agency routinely soil survey and document the spread of SCN into previously non-infested counties in the province.

The Ontario Soybean Growers have also played an integral role not only in increasing awareness but also in supporting SCN research and extension activities aimed at limiting SCN losses to soybean producers.

The current survey project has been supported by the OSG which obtained funding through contributions by Canada and the Province of Ontario under the Canada-Ontario Research and Development (CORD) Program, an initiative of the federal-provincial-territorial Agricultural Policy Framework designed to position Canada's agri-food sector as a world leader. The Agricultural Adaptation Council administers the CORD program on behalf of the province.

SCN can be managed but the first step is detection and is critical to maintaining profitable soybeans in the future. If you are in a non-infested county and suspect SCN, we may be able to add it to the survey. Please contact **Cheryl** at **519-674-1694** or fax field details to **519-674-1564**.

### **Southwest Crop Diagnostic Day A Success!**

The committee would like to thank all those who participated in the two day event and our sponsors – Agris, BASF, Dekalb, Pioneer and Syngenta Seeds.

Hope to see you in 2008!

## Soybean Rust Increasing in Texas and Louisiana! Should We Be Concerned?

Albert Tenuta, Field Crop Plant Pathologist, OMAFRA, Ridgetown

The recent rains in parts of Texas and Louisiana this month has provided a favourable environment for new soybean rust infections and spread. Since July 12, soybean rust has been found in 14 new counties in Texas (12 counties), Louisiana (1) and Mississippi (1).

Although many of these new infections are on kudzu, over the past few days soybean rust has been reported in commercial fields in Texas (three new counties – Jackson, Fort Bend, Austin) and in southwestern (Acadia Parish) and central (Rapides Parish and Avoyelles Parish) Louisiana.

Surveys over the past few days by Louisiana State University personnel have confirmed the spread of soybean rust to other commercial soybean fields in these parishes. Their survey included nine (9) fields in Rapides Parish, seven (7) of which were positive for ASR with incidence levels ranging from 1 to 30% and severity levels ranging from 5 to 40%. In Avoyelles Parish seven (7) fields were surveyed with three (3) being positive with incidence and severity levels being 5%. Based on surveys in Texas, these new northern areas are showing low incidence and severity of soybean rust.

The increase in Texas and Louisiana does not at this time change the risk to Ontario and Canadian soybean producers – which is low. Over the next week or so I would not be surprised to find more counties in Louisiana and Texas reporting soybean rust infections. The question will be “how severe and could these areas be a significant

inoculum (spore) source for Canada and the US corn belt”?

Eventhough the US soybean rust situation is ahead of last year (Figures 1 and 2), time will only tell. The next two weeks or so will be critical. Updates will continue to be provided through the Crop Pest Ontario, the Ontario Soybean Growers website ([www.soybean.on.ca](http://www.soybean.on.ca)) and the US PIPE/SBR website ([www.sbrusa.net](http://www.sbrusa.net)). Alerts will also be posted through the CropLine if things change rapidly.

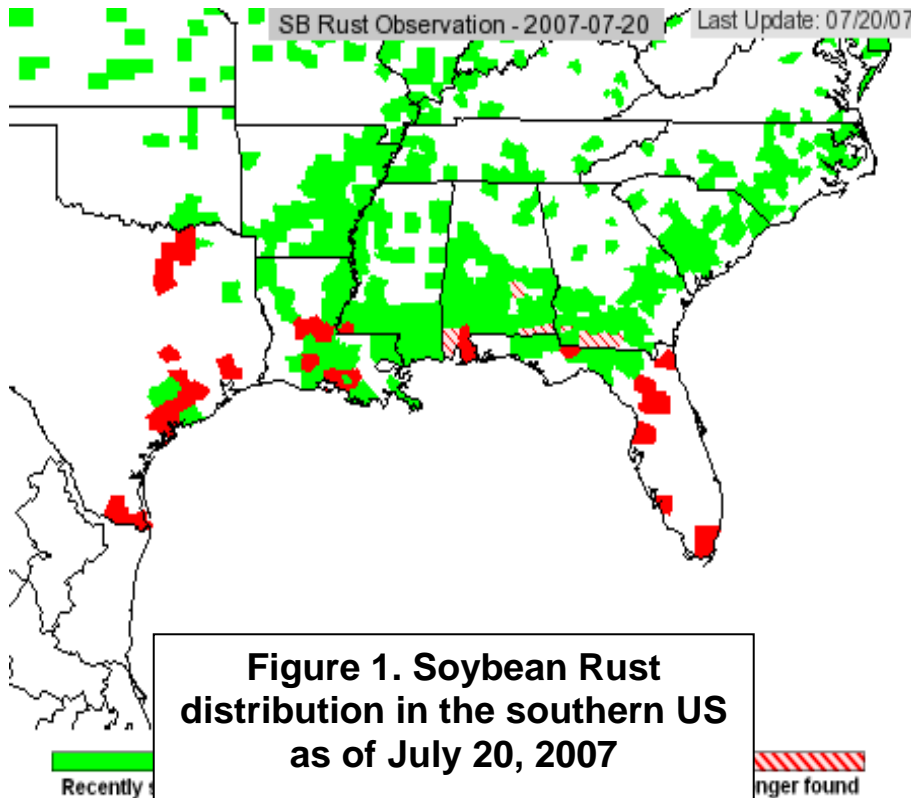
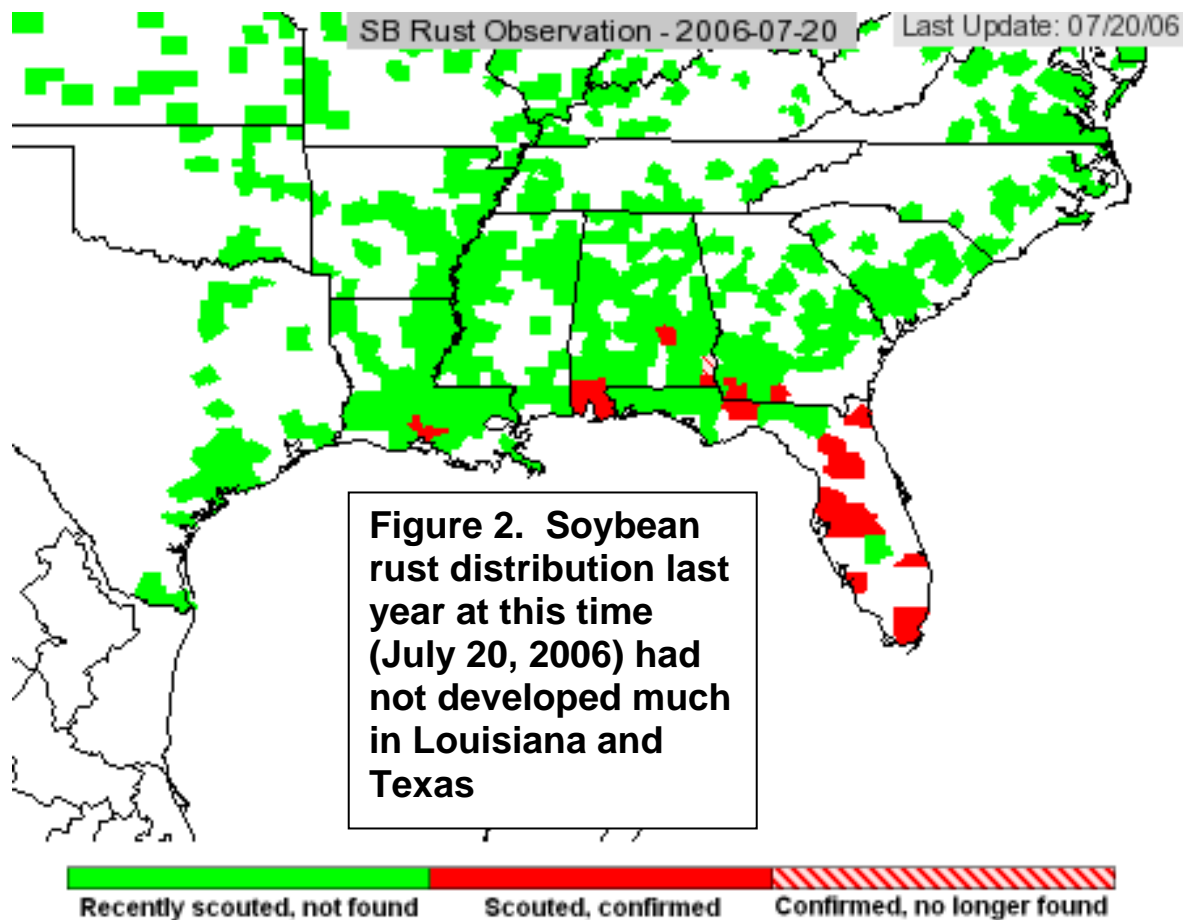


Figure 1. Soybean Rust distribution in the southern US as of July 20, 2007



**DNA Multiscan - New Diagnostic Test for Multiple Pathogens**

**Albert Tenuta, Field Crop Plant Pathologist, OMAFRA, Ridgetown**

The DNA Multiscan is a new and very powerful tool that can assist consultants, producers, industry, extension and others in identifying plant disease problems. The test, which is available through the University of Guelph Laboratory Services, can test multiple plant pathogens at one time and has the

potential to identify all possible diseases of a crop in the one test. Traditional diagnostic testing is limited in the number of diseases that can be tested at one time and in most cases they detect only one pathogen or organisms that could be cultured (grown in the lab). This has always been complaint of such testing and the DNA Multiscan eliminates this complaint. The test is one-hundred times more sensitive than classical tests and since the results are based on the detection of genetic material the DNA Multiscan is very accurate and rapid. The technology behind the DNA Multiscan was originally developed in

Canada and has the ability to identify plant pathogenic and beneficial organisms in:

1. • plant material: crops, seedlings, cuttings, young plants, and seeds
2. • substrates: potting mixes, rock wool and soil
3. • re-circulating systems: irrigation water, nutrient solutions, pond and drainage water
4. • wash and rinse water used during and after harvest
5. fertilizers, composts, and fresh manures
6. sludges•

Besides detecting the presence of pathogenic and certain beneficial micro-organisms, The DNA multiscan® also simultaneously indicates the quantity or magnitude of the problem (low, moderate or high).

The following example (page 6) shows the strengths of the DNA Multiscan. During a problem call this year, I noticed that the soybeans were displaying typical Fusarium wilt and Rhizoctonia root rot symptoms. These plants were sent to the Pest Diagnostic Clinic (University of Guelph) for DNA Multiscan testing. The results show that multiply Fusarium species were

detected plus Rhizoctonia solani. This makes it much easier to correlate the symptoms with the lab detection and ultimately makes for better recommendations and plant disease management.

For more details contact

Marc Sabourin, BSc.F., MSc.F  
Laboratory Services  
University of Guelph  
tel: 519-767-6227  
email: msabouri@lsd.uoguelph.ca



**DNA multiscan®**  
**Advanced Technology**  
**for Plant Health**  
**Management**

UNIVERSITY  
of GUELPH

LABORATORY SERVICES

[www.labservices.uoguelph.ca](http://www.labservices.uoguelph.ca)

Target Organism	Value	Result	Comments
<i>Athelia rolfsii</i>	0	Not Detected	
<i>Bipolaris sp.</i>	0	Not Detected	
<i>Botrytis cinerea</i>	0	Not Detected	
<i>Colletotrichum sp.</i>	0	Not Detected	
<i>C. acutatum</i>	0	Not Detected	
<i>C. oocoides</i>	0	Not Detected	
<i>C. gloeosporioides</i>	0	Not Detected	
<i>Colletotrichum graminicola</i>	0	Not Detected	
<i>Cylindrocarpum destructans</i>	0	Not Detected	
<i>Cylindrocladium sp.</i>	1	Low Levels	
<i>Didymella sp.</i>	0	Not Detected	
<i>Drechslera sp.</i>	0	Not Detected	
<i>Fusarium sp.</i>	3	High Levels	
<i>Fusarium culmorum</i>	0	Not Detected	
<i>F. oxysporum</i>	2	Moderate Levels	
<i>F. ox. fsp lycopersici</i>	0	Not Detected	
<i>F. solani</i>	1	Low Levels	
<i>Gaeumannomyces graminis</i>	0	Not Detected	
<i>Gnomonia conarii</i>	0	Not Detected	
<i>Laetisaria floiformis</i>	0	Not Detected	
<i>Leptosphaeria sp.</i>	0	Not Detected	
<i>Leptosphaeria konae</i>	0	Not Detected	
<i>Limonia yoesi roseipellis</i>	0	Not Detected	
<i>Microdochium nivale</i>	0	Not Detected	
<i>Penicillium sp.</i>	0	Not Detected	
<i>Phoma destructiva</i>	0	Not Detected	
<i>Phytophthora sp.</i>	0	Not Detected	
<i>P. cactorum</i>	0	Not Detected	
<i>P. capsici</i>	0	Not Detected	
<i>P. cinnamomi</i>	0	Not Detected	
<i>P. citricola</i>	0	Not Detected	
<i>P. cryptogea</i>	0	Not Detected	
<i>P. drechsleri</i>	0	Not Detected	
<i>P. fragariae</i>	0	Not Detected	
<i>P. infestans</i>	0	Not Detected	
<i>P. nicotianae</i>	0	Not Detected	
<i>P. ramorum</i>	0	Not Detected	
<i>Plectosphaerella cucumerina</i>	0	Not Detected	
<i>Puccinia sp.</i>	0	Not Detected	
<i>Pythium sp.</i>	0	Not Detected	
<i>P. aphanidermatum</i>	0	Not Detected	
<i>P. dissotocum</i>	0	Not Detected	
<i>Pythium graminicola</i>	0	Not Detected	
<i>P. irregulare</i>	0	Not Detected	
<i>P. polymastum</i>	0	Not Detected	
<i>P. sylvaticum</i>	0	Not Detected	
<i>P. ultimum</i>	0	Not Detected	
<i>Pyrenochaeta lycopersici</i>	0	Not Detected	
<i>Rhizoctonia solani</i>	3	High Levels	

Many Fusarium species detected at different levels. These pathogens are often associated with Fusarium root rot and wilt symptoms in the field.

Besides Fusarium species being found, the Rhizoctonia root rot pathogen was also found at high levels. This makes sense based on the visual symptoms in the field. This is one of the strengths of the DNA Multiscan – “the ability to detect many pathogens at the same time with one test or sample.”