



## Field Crops Pathology Extension Program

**Program Leader:** Gary C. Bergstrom, Professor  
Department of Plant Pathology  
Cornell University  
334 Plant Science Building  
Ithaca, NY 14853-5904

### **Program Objectives:**

- To increase the plant pathology expertise of extension educators and certified crop advisors, and ultimately, of field crop producers.
- To identify and make the New York field crops community aware of emerging and endemic crop diseases that threaten crop yield, quality, and profitability.
- To evaluate cultural, genetic, chemical, and biological disease control strategies as components of integrated field crops management and to interpret these results and extend them to diverse New York stakeholders.



Gary C. Bergstrom  
[gcb3@cornell.edu](mailto:gcb3@cornell.edu)  
Off: 607-255-7849  
Lab: 607-255-8393

### **Program Summary:**

The Cornell Field Crops Pathology Extension Program provides outreach education and adaptive research/demonstration programs on the integrated management of all field crop diseases of importance in New York. These include diseases of corn, small grains, forage legumes and grasses, oilseed crops, and biofuel feedstock crops. This program serves the educational needs of field crop producers and agribusiness on a statewide basis. Outreach activities and publications are developed and delivered in cooperation with Cornell Cooperative Extension field crop educators and with members of the Cornell University Integrated Field Crop, Soil, and Pest Management Program Work Team, co-chaired by Gary Bergstrom and Ron Robbins, a dairy and field crops producer in Jefferson Co.

Important educational outlets include:

- Up-to-date information on crop diseases on Cornell's field crops website ([www.fieldcrops.org](http://www.fieldcrops.org))
- Annual field crop management field days and tours
- Regional winter crops congresses and other grower meetings across New York state
- In-service education and internet communications with Cornell Cooperative Extension field crop educators as well as with certified crop advisors



The Cornell University Small Grains Management Field Day is held each year in June.

### **Program Justification:**

The integrated Cornell Field Crops Pathology Extension and Research Programs are needed to sustain profitable and ecologically sound food grain and forage production systems in New York. Both chronic and emerging diseases are a continuing threat to field crops and can reduce the profit margin for producers. Plant pathologists work closely with other scientists to evaluate and recommend disease control strategies that are legal, effective, and economical for New York farms. This program makes essential contributions to the New York IPM Program, the Northeast Certified Crop Advisor Program, and the Integrated Field Crop, Soil, and Pest Management Program Work Team.

### **Impact to Industry:**

- Demonstrated that integrated management, i.e., utilizing wheat varieties with moderate *Fusarium* resistance plus application of triazole fungicides at flowering, was the most effective and economical means of suppressing Fusarium head blight and mycotoxins in winter wheat; this strategy is being employed widely on New York farms.
- Informed growers and industry representatives of newly identified diseases that could limit, unless they are controlled, the biomass yield of switchgrass, a promising biofuel feedstock crop for New York.
- Attributed winterkill losses of alfalfa stands in northern New York to brown root rot and redefined disease causation to a species complex of pathogenic fungi; we are currently assessing alfalfa varieties for their relative performance in the presence of brown root rot fungi.
- Supplied New York corn growers with the latest research-derived information (from NY and elsewhere) on the effects of foliar fungicides on corn diseases and yield so they could make informed decisions about the use of this new technology.

### **Field Crops Pathology Extension Team:**

- Gary Bergstrom, Professor
- Jaime Cummings, Research Support Specialist
- Allison Strub, CCE Summer Intern 2012
- Mary McKellar, Extension Support Specialist (Dept. Crop and Soil Science, Field Crops Program Work Team)

The Cornell Field Crops Pathology Extension Program is integrated with the Field Crops Pathology Research Program (Bergstrom Lab) that includes graduate students, undergraduate students, and postdoctoral scientists.



Jaime Cummings,  
Research Support Specialist,  
Field Crops Pathology Laboratory