Late blight on tomatoes and potatoes in eastern USA in 2011.
Kevin Myers, Giovanna Danies, Ian Small, Bill Fry,

Who cares?

Sporadically

.......

Diverse folks

Photo: Jesse Walter
9 October 2011
Black business leaders protect affirmative action

By Sonya Ross
The Associated Press

A group of prominent black business leaders, alarmed by attacks on the affirmative action programs that benefited them, are starting to act. They're creating a political action committee and mobilizing supporters to lobby in behalf of these programs and candidates who seek to protect them.

The PAC, Mobilization for Business Opportunities, marks the first push into the affirmative action battle by black business owners and black corporate officials.

"Until now, the voice of black business has been virtually nonexistent. We will now speak for ourselves on this issue," said Earl G. Greene, chairman and chief executive officer of Black Enterprise magazine. "It was agreed upon in the year 1994 that we could not return to the pre-1994 state of affairs."

Fungus destroys fields of potatoes

FARM BEAT

Fungi are killing big bucks and consumers could suffer, too.

The last time potato late blight, a fungus, killed out potatoes, it wiped out the entire crop. Farmers suffered and consumers paid.

FARMER VYRON CHAPMAN

"I can't say it's going to be as bad as that, but it could. It's going to be a tough year," said Earl G. Greene, chairman and chief executive officer of Black Enterprise magazine.

Farmers and consumers could suffer, too. The last time potato late blight, a fungus, killed out potatoes, it wiped out the entire crop. Farmers suffered and consumers paid.

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Northeast Tomatoes Lost, and Potatoes May Follow

By JULIA MOSKIN
Published: July 28, 2009
RIPE local tomatoes, keenly anticipated by growers and cooks, will be missing from many markets, farm stands and farm shares this summer.

Jennifer May for The New York Time

BURYING A CROP Keith Stewart tossing out diseased tomato plants on his farm in Orange County, N.Y. Late blight damaged his potatoes as well.

Related
Outbreak of Fungus Threatens Tomato Crop (July 18, 2009)
Although there are no official estimates yet on crop loss, a severe outbreak of late blight fungus in tomatoes, first noted in June, is sweeping through farms and gardens in the Northeast.
AFRI Grant → Reducing losses to potato and tomato late blight by monitoring pathogen populations, improved resistant plants, education, and extension

Howard Judelson
Chris Smart
Bill Fry
Nik Grunwald
+ 22 friends worldwide
Late blight on tomatoes and potatoes in eastern USA in 2011.

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Background

• 2009
• 2010 – 2011
• Isolate characterization

Implications?

Photo: Jesse Walter
9 October 2011
How did we know?
Expanded Host range (more sources of the pathogen)

- Devil's Trumpet
- Jimson Weed
- Hairy Nightshade
- Golden Henbane
- Tomato
- Potato
- Petunia
- S. villosum
- Calibrachoa
- Climbing nightshade
- Tree tobacco
- N. benthamiana
- S. pyracanthum
- Mandrake
- Apple of Peru
- Potato Vine
Late blight has been found at several locations in our reporting area this past week:

**From Meg McGrath 6/23:**
Late Blight on LI in Potatoes  
Sample just came in and will soon be on its way to Bill Fry. Lots of sporulation. Field had been sprayed twice with Penncozeb: last Monday and about 10 days prior to that. One hot spot which grower is now taking out. Will be spraying with Curzate.
NYS Counties with Positive Confirmations of Late Blight
NYS Counties with Sample Submitted with Negative Results
No Samples Received from These Counties

6/24/2009

NPDN National Plant Diagnostic Network
CORNELL UNIVERSITY'S Plant Disease Diagnostic Clinic
HI all,
Just a followup to my earlier report. Yesterday I did a quick tour of garden centers in the Ithaca area. All three big retail stores had late blight infected tomatoes on their shelves yesterday afternoon. Some agreed to remove the plants while I was there, and others were waiting word from the NY supplier. Tomato plants had been replaced with additional plants every few days. Plants appear to have originated from a producer in New York, and after speaking to them, they were in the process of remove plants from shelves. When I visited 4 local retail outlets, some close to the larger stores, I found no additional infected plants. These tomato plants had been grown by the local retailer or had been gotten from other NYS producers near Syracuse and elsewhere. I also received word that LB infected plants from large retailers were found in Sayre, PA, Schenectady County, and as far east as Presque Isle, Maine and beyond. NYS Ag and Mkt inspectors were to visit the NY producing site and take appropriate action.
Tom Zitter
FYI: I am an organic gardener in Amsterdam, NY with 63 heirloom tomato plants of 23 different varieties, all gone. I was growing very rare varieties, blacks, greens, oranges, whites. All purchased from a very reputable grower in Schoharie. Tonight I had to leave home as my husband is pulling and bagging all 63 plants. I have 100% loss. We live on ten acres. I inspected every day and it seems the blight took my plants in matter of hours. I was hoping to sell them for additional income.

Composition of the 2009 population?

Fry lab: >70 samples
→ 10 (from potatoes) were US8
(Gpi = 100/111/122)
remainder: (Gpi = 100/122)
Microsatellites → “overnight?” diagnosis

Asexual, simple populations → clonal lineages (phenotype)
SSR genotype → phenotype
Microsatellite markers - Simple Sequence Repeats

10 October 2011: 119 samples: >80% 24-48 hr turn around time
2009 isolates
Sanjoy Guha Roy, Ian Small
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US22
A2 mating type, sensitive to Ridomil

2009: Eastern Seaboard

2010:
5 June 2010 → 6 October 2010
(27 tomato, 3 potato)
LA, KY, NY, WI, PA, ME, NH, CT,

2011:
9 June ME (tomato) 1 location
11 Aug. ME (tomato) 1 location
26 Aug. ME (tomato) 5 locations
30 Aug NY (tomato) 2 locations
2 Sept. ME (tomato) 2 locations
13 Sept NY (tomato) 2 locations

2010:
19 May, tomato, MD
22 June, tomato, CT
4 August, tomato, WI
6 Oct, tomato, NH
15 Oct, tomato, MD

2011:
29 April, Tomato (transplants), CT, 2 locations
28 June, Tomato (6 locations), Potato (2 locations), LI, NY
7 July, Tomato (6 locations), LI, NY

2010:
19 May, tomato, MD
22 June, tomato, CT
4 August, tomato, WI
6 Oct, tomato, NH
15 Oct, tomato, MD

2011:
29 April, Tomato (transplants), CT, 2 locations
28 June, Tomato (6 locations), Potato (2 locations), LI, NY
7 July, Tomato (6 locations), LI, NY
8 July, Tomato (1 location), PA
20 August, Tomato (1 location), RI
25 August, Tomato (2 locations), Potato (2 locations), ME
26 August, Tomato, NH
7 Sept, Tomato, NY 2 locations
9 Sept, Potato, ME, 2 locations
13 Sept, Tomato, CT, 2 locations
21 Sept, Tomato, PA, 2 locations
23 Sept, Potato, PA
29 Sept, Tomato, PA, Potato, ME (3 locations)
4 Oct, Tomato, CT
US8,A2 mating type, metalaxyl resistant, (potato )

2009:
7 July, potato, Wayne Co.
14 July, potato, Steuben Co.,
28 July, potato, Wyoming Co. (four isolates)

2010:
17 Aug, potato, PA
17 Aug, potato, Ontario (5 locations)
19 Aug, potato, NY (2 locations)
15 Sept. potato, NY (1 location)

2011:
9 Sept. potato, NY
US24
A1 mating type, “sensitive” to Ridomil

2010:
Montana, (ND), WA  7 isolates

2011:
summer, potato, ND, MN , 7 locations
19 July , potato, ME
25 Aug, potato , ME
6 Oct, potato ID, WA , 5 locations
Relative “aggressiveness” of isolates:

US8, potatoes “only”
US22, mainly tomatoes (some potato)
US23, potato and tomato (highly aggressive?)
US24, mainly potato (some tomato???)
New Genotypes, Phenotypes??

2010: 3 “unknowns”.
2011: 11 “unknowns”
(some “mef-I”)
mating types ??
Compatibility with resistant cultivars?

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