Resistance to Fusarium Wilt in Lettuce

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Contributors

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Fusarium Wilt of Lettuce

- 1955 Japan
- 1990 Huron, California
- 2001 Huron & Yuma
- 2001 Italy
- 2002 Watsonville, California

Fusarium Wilt of Lettuce

- Japan
  - – *Fusarium oxysporum* f. sp. *lactucae*
  - – Two races, 1995
- California & Arizona
  - – *Fusarium oxysporum* f. sp. *lactucum*
  - – Race 1

Fusarium Wilt on Lettuce: Races

Cultivar	R1	R2
Costa Rica No. 4	R	S
Banchu Red Fire	S	R
Patriot	S	S

Resistance Breeding

- Greenhouse tests, Salinas
  - Yuma isolate
  - 5 x 10^6 spores/ml
  - 1 to 4 scale
    - 1 - No apparent disease or stunting
    - 2 - Slight-moderate stunting
    - 3 - Severe stunting and yellowing
    - 4 - Dead
- Field Tests, Yuma

Two Weeks Post-Inoculation

Vanguard

Empire

Salinas 88

River Green

Fusarium Wilt Resistance

Cultivar	Expected	Observed
Empire	S	2.0
Green River	R	1.5
Salinas 88	S	1.1
Vanguard	S	3.2

Fusarium Wilt Resistance

	Disease category			
Cultivar	1	2	3	4
Empire	8	5	6	1
Green River	13	5	2	0
Salinas 88	18	2	0	0
Vanguard	0	5	6	9

Four Weeks Post-Inoculation

Patriot

Empire

Salinas 88

Costa Rica No. 4

Fusarium Wilt Resistance

Cultivar	Expected	Observed
Costa Rica No. 4	R	1.0
Empire	S	1.5
Patriot	S	3.4
Salinas 88	S	1.6

Fusarium Wilt Summary

- Confirm resistance in ‘Salinas 88’
- Confirm race identity
- Determine inheritance of resistance

Fall Melon Virus

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History

- 1977 – 1981
- 1981 – 1990
- 1991 – present

1977 – 1981

- Sweetpotato Whitefly

- Squash Leaf Curl Virus (SLCV)
- Summer Squashes
- Winter Squashes

- Melon Leaf Curl Virus (MLCV)
- Watermelon Curly Mottle Virus (WCMoV)

1981 – 1990

- Sweetpotato Whitefly Outbreak
- SLCV
- Lettuce Infectious Yellows Virus (LIYV)
- C  le 
  Arab Emirates, 1982

1991 – Present

- New Whitefly
  - Sweetpotato Whitefly Strain B
  - Silverleaf Whitefly
- Cucurbit Leaf Crumple Virus (CuLCrV), 1998
- Melon Chlorotic Leaf Curl Virus (MCLCV), 2000
- CYSDV in Texas & Mexico, 1999

CuLCrV

- Effects?
- Resistance

CYSDV

- Effects
- Resistance

Fall Melon Virus Summary

- CuLCrV
  - Potential problem
  - Putative resistance
- CYSDV
  - Texas & Mexico
  - Resistance reported