Disease Management Update:

- Fungicidal Control of Blackmold
- Drip Chemigation Studies

Gene Miyao, UC Coop Extension, Yolo, Solano and Sacramento counties

Fungicidal Control of Blackmold

Blackmold fruit rot (*Alternaria alternata*)

Maximum fruit infection:

12 hours continuous moisture

60 to 86 F optimal for disease

Infection in 3 to 5 hours of leaf wetness

Rainfall
CIMIS weather station #6, UC Davis
Fall, 2011

Photo credit: Steve Smith, Red Gold, Indiana

Date	Rainfall (inches)	
25-Sep	0.01	
26-Sep	0	
27-Sep	0	
28-Sep	0	
29-Sep	0	
30-Sep	0	harvestable
1-Oct	0	
2-Oct	0	
3-Oct	0.2	
4-Oct	0.07	
5-Oct	0.34	
6-Oct	0.24	
7-Oct	0	
8-Oct	0	
9-Oct	0	
10-Oct	0.22	
11-Oct	0	
12-Oct	0	
13-Oct	0	harvest
14-Oct	0	harvest
total	1.07	

Blackmold fruit rot control , 2011, UCD
3 & 6 wks pre-harvest
(*with 2 wk. delay*)

	TREATMENTS	rate (product/A)	% black mold	
1	Non treated Control	--	53	d
2	Quadris Top	8 fl oz	26	ab
3	Bravo WeatherStik	2 pt	28	ab
4	Bravo Top + Activator 90	2 pt + 0.125% v/v	23	a
5	Bravo Top + Activator 90	1.5 pt + 0.125%	38	c
6	Bravo Top	2 pt	26	ab
7	Bravo Top	1.5 pt	26	ab
8	Quadris Top fb Bravo Top	8 fl oz fb 2 pt	26	ab
9	Bravo Top fb Quadris Top	2 pts fb 8 fl oz	25	ab
10	Dupont LEM17 (Fontelis)[2]	1 pint	39	c
11	Dupont LEM17 (Fontelis)[2]	1.5 pints	35	bc
	LSD 5%		10.0	
	%CV		25	

Summary: ***apply fungicides preventively 3 to 6 weeks before harvest for blackmold control.***

Only preventive materials available

50% mold reduction expected

Single application often is most cost effective

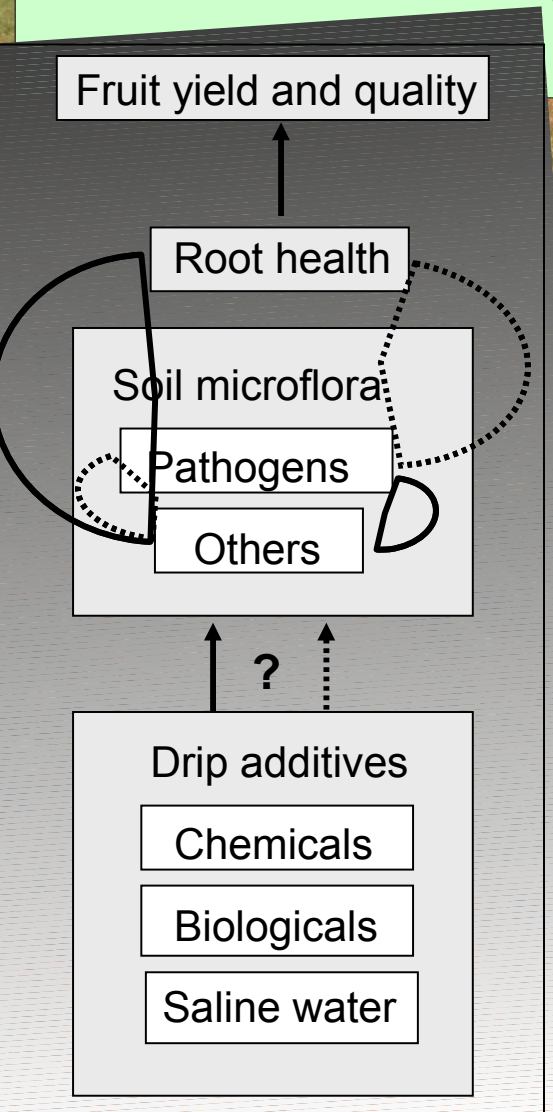
Evaluation of Chemigation on Tomato Root Health

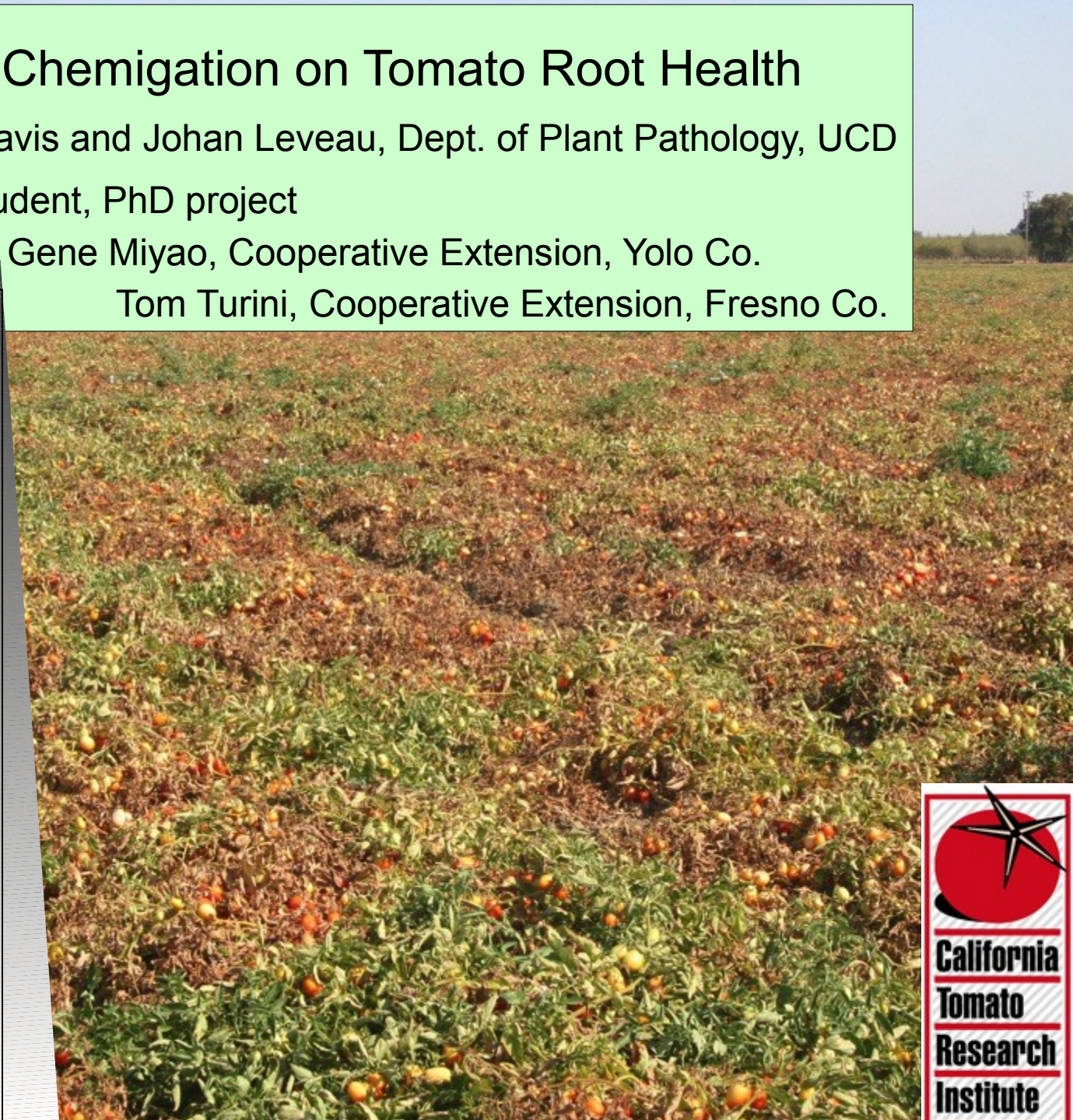
Mike Davis and Johan Leveau, Dept. of Plant Pathology, UCD

Nilesh Maharaj, grad student, PhD project

Gene Miyao, Cooperative Extension, Yolo Co.

Tom Turini, Cooperative Extension, Fresno Co.





California Tomato Research Institute

More of...

- Buried drip irrigation continues to increase
- Rotations to tomato are more concentrated
- Incidence of soilborne pathogens is increasing

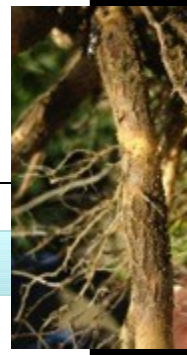
Sclerotium rolfsii

Southern Blight

Fusarium oxysporum f. sp. *radicis-lycopersici*

Fusarium crown and root rot

	2011	Woodland Field				Dixon Field			
	Chemigation Treatment	Yield tons/A		Vert %	Fusarium %	Yield tons/A		Vert %	Corky root severity
	Control	34 b	20	21	46	50	89		
1	Vapam 15 gal	35 b	15	28					
2	Tenet	34 b	18	22	48	45	86		
3	Vapam + Tenet	34 b	19	26					
4	Quadris + Ridomil	33 b	17	27	47	34	84		
5	Vapam + Quad + Ridomil	36 b	15	33					
6	Serenade Soil	38 b	18	22	45	47	89		
7	Serenade + Quad + Rid					46	47	88	
8	Vapam + Serenade	36 b	13	25					
9	Chicken manure	**45 a**	15	19	**52***		48	89	
10	Tenet + Serenade				46	49	90		
11	SoilGard			44	45	93			
12		NS	NS	NS	NS	NS			



*** significant difference: manure vs non-manure**

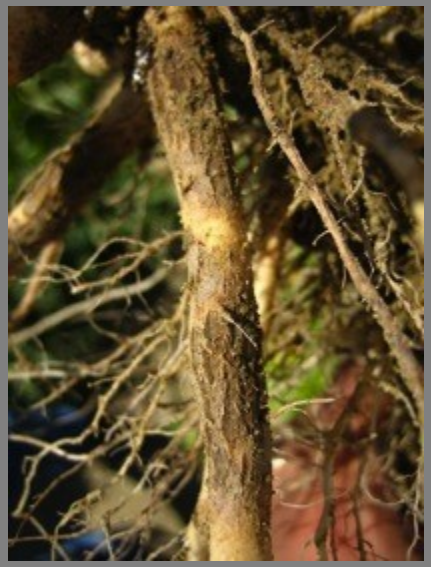
2012 Treatments (*tenta*

Control
Quadris + Ridomil
Vapam highest rate (15 gal in 2
Serenade soil
Regalia
Compost tea
Chicken manure - 10 tons
Chicken manure - 20 tons
Chicken manure + Serenade
Potassium - high rate

Verticillium

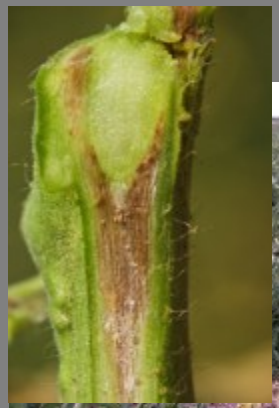
Southern blight

Phytophthora root rot

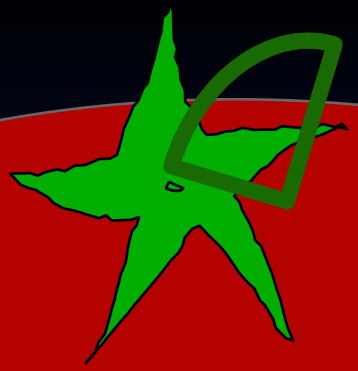


Corky root

Crown and root rot



Fusarium wilt



Summary:

Disease Control Evaluations

- No demonstrated effectiveness of chemicals & biologicals through drip irrigation
  - *Value of composted chicken manure?*
- Apply blackmold-control fungicides preventively 3 to 6 weeks before harvest

The End