

Mefenoxam Insensitivity of *P. capsici* Isolates Collected in South Carolina in 2003

County (Farm)	Crop	Sensitive	Intermediately		Total
			sensitive	Insensitive	
Lexington (1)	Bell pepper	0	10	0	10
Lexington (1)	Summer squash	0	7	5	12
Bamberg	Summer squash	19	0	0	19
Bamberg	Zucchini	17	0	0	17
Lexington (2)	Bell pepper	19	29	2	50
Lexington (2)	Jalapeno pepper	5	6	1	12
Total		60	52	8	120

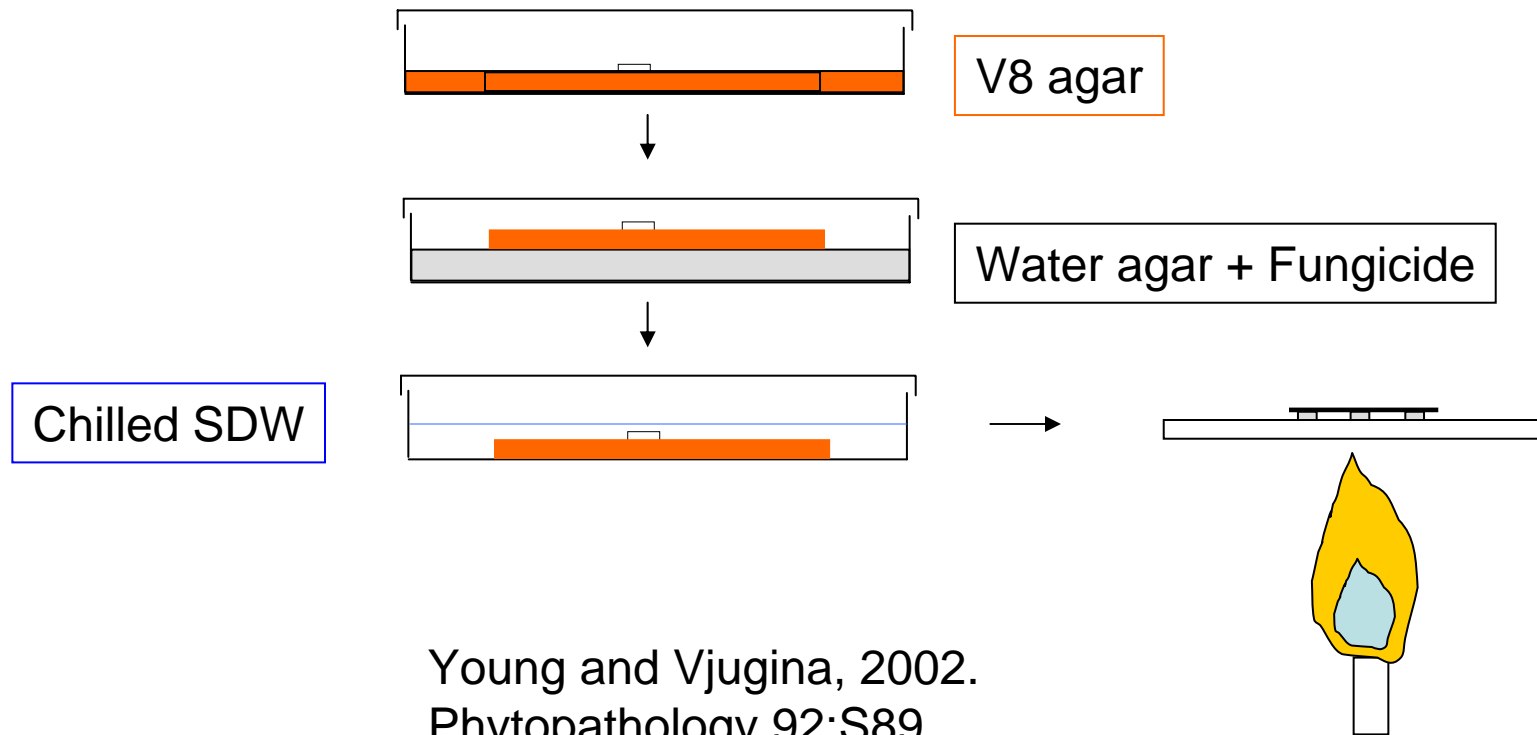
Keinath, A.P. 2007. Plant Disease 91:743-748.

General Procedures

Factor	Levels	Example
Fungicide Concentration (mg/L)	3-4 concentrations plus 0; Evenly spaced on log scale at 1 or 0.5 log units apart	0, 0.03, 0.10, 0.31 [1.0]
Tests	2 to 3	
Replications	2 plates	
Subsamples	1 to 4, varied by assay	4 aliquots of zoospore suspensions counted
Regression	Mostly linear with log (mg/L)	

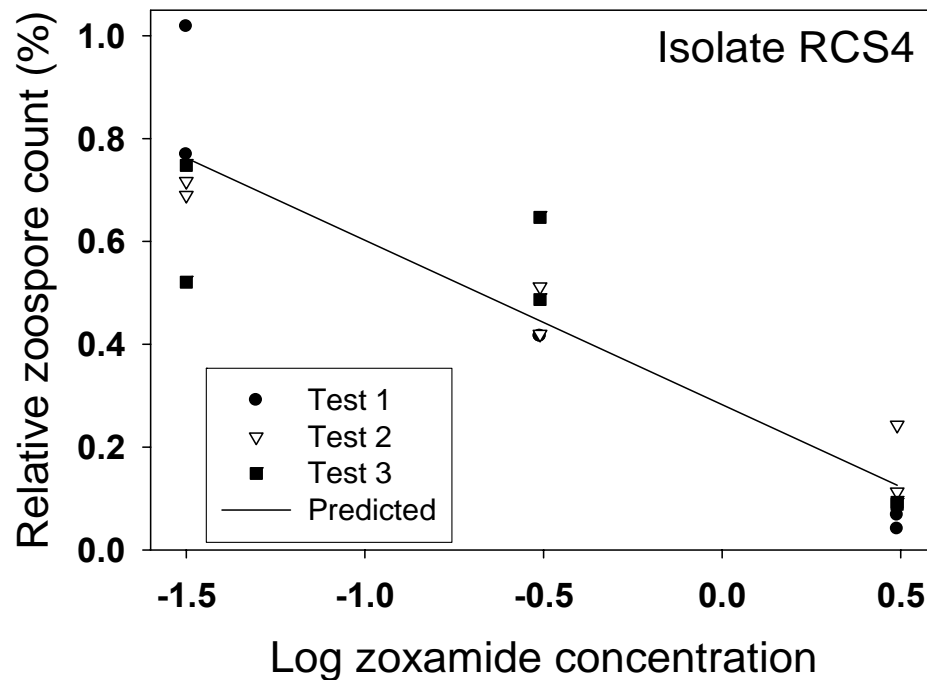
Reference: Keinath, A.P. 2007. Plant Disease 91:743-748.

Sandwich Plate Technique for Producing Zoospores in the Presence of a Fungicide that Reduces Sporangium Formation



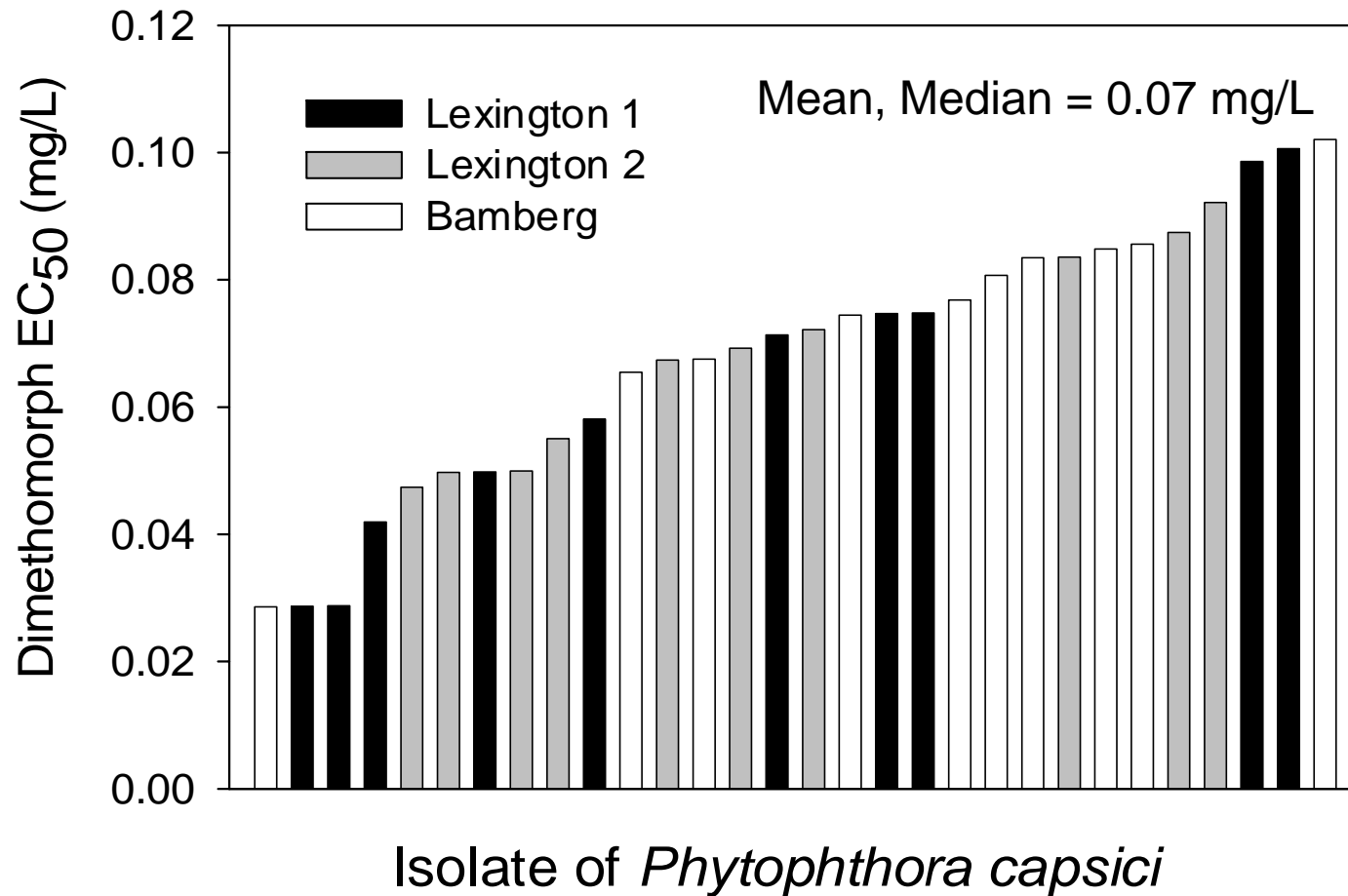
Young and Vjugina, 2002.
Phytopathology 92:S89.

Calculating EC₅₀ Values with Regression Equations

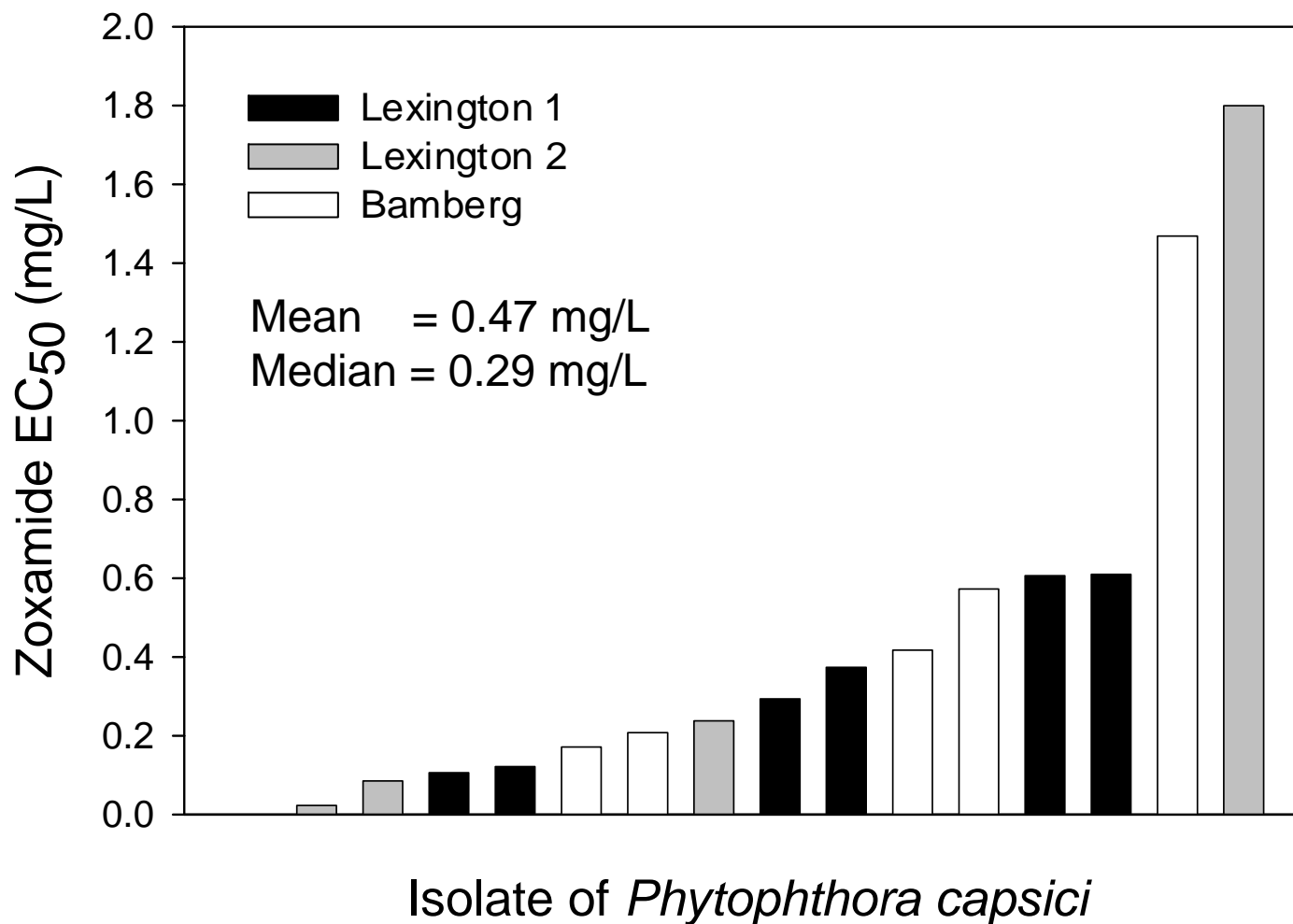


Isolate	Inter-cept	Slope	log10 EC50	EC50
RCS4	0.2845	-0.315	-0.682	0.21
LP48	0.6474	-0.577	0.255	1.80

EC₅₀ Values for Zoospore Cyst Germination on Dimethomorph-Amended V8 Agar



EC₅₀ Values for Zoospore Production on Zoxamide-Amended Agar



Summary of EC₅₀ Values (mg/L)

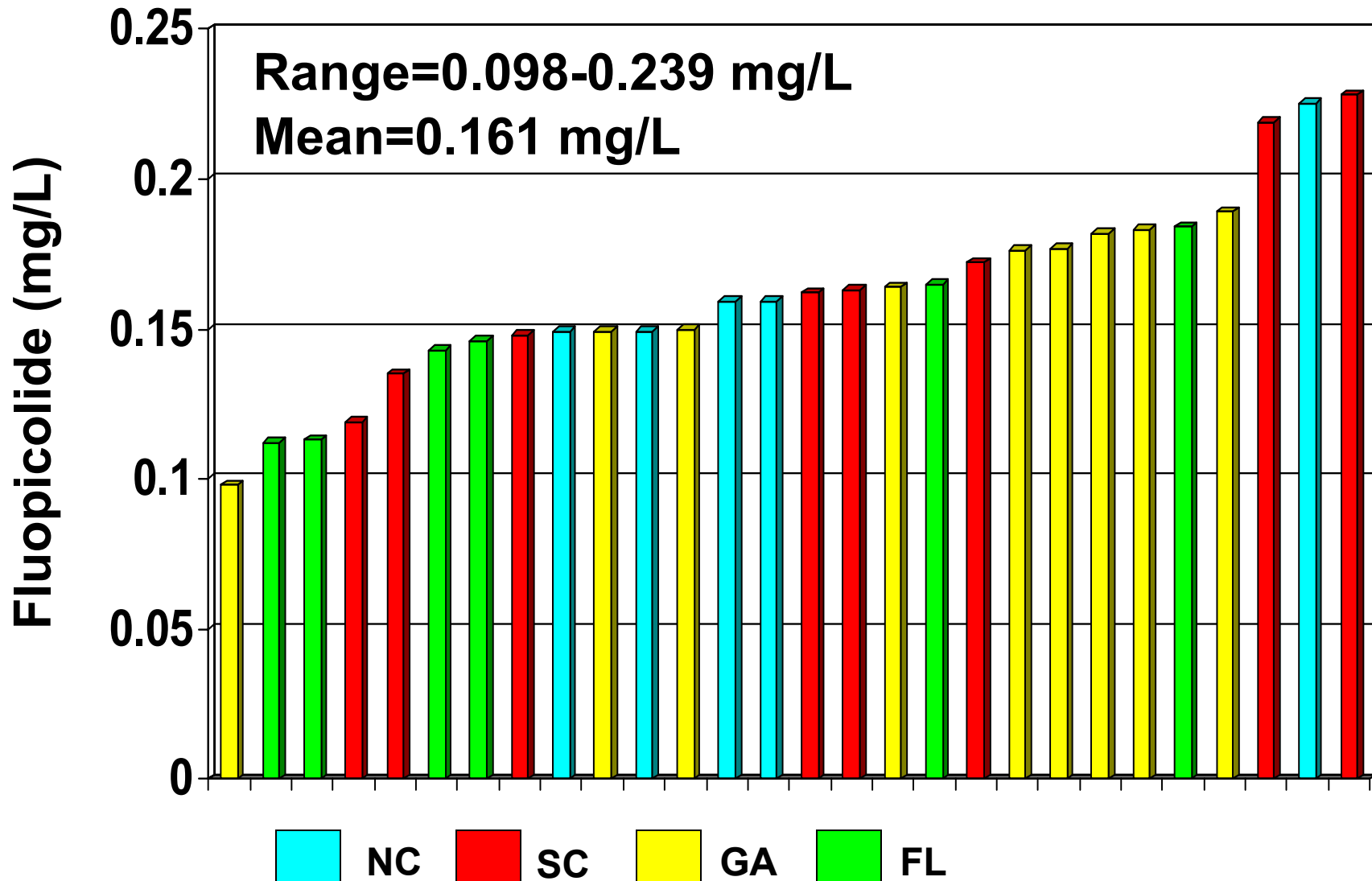
Fungicide	Mycelial Growth	Zoospore Germination	Zoospore Production
Dimethomorph	0.19 ± 0.02 0.18	0.07 ± 0.02 0.07	0.63 ± 0.42 0.53 **
Zoxamide	0.50 ± 0.52 0.33 **	n.a.	0.47 ± 0.51 0.29 **
Cymoxanil	> 50	> 50	<50

Mean ± Std Dev.

Median, ** indicates Non-normal Distribution

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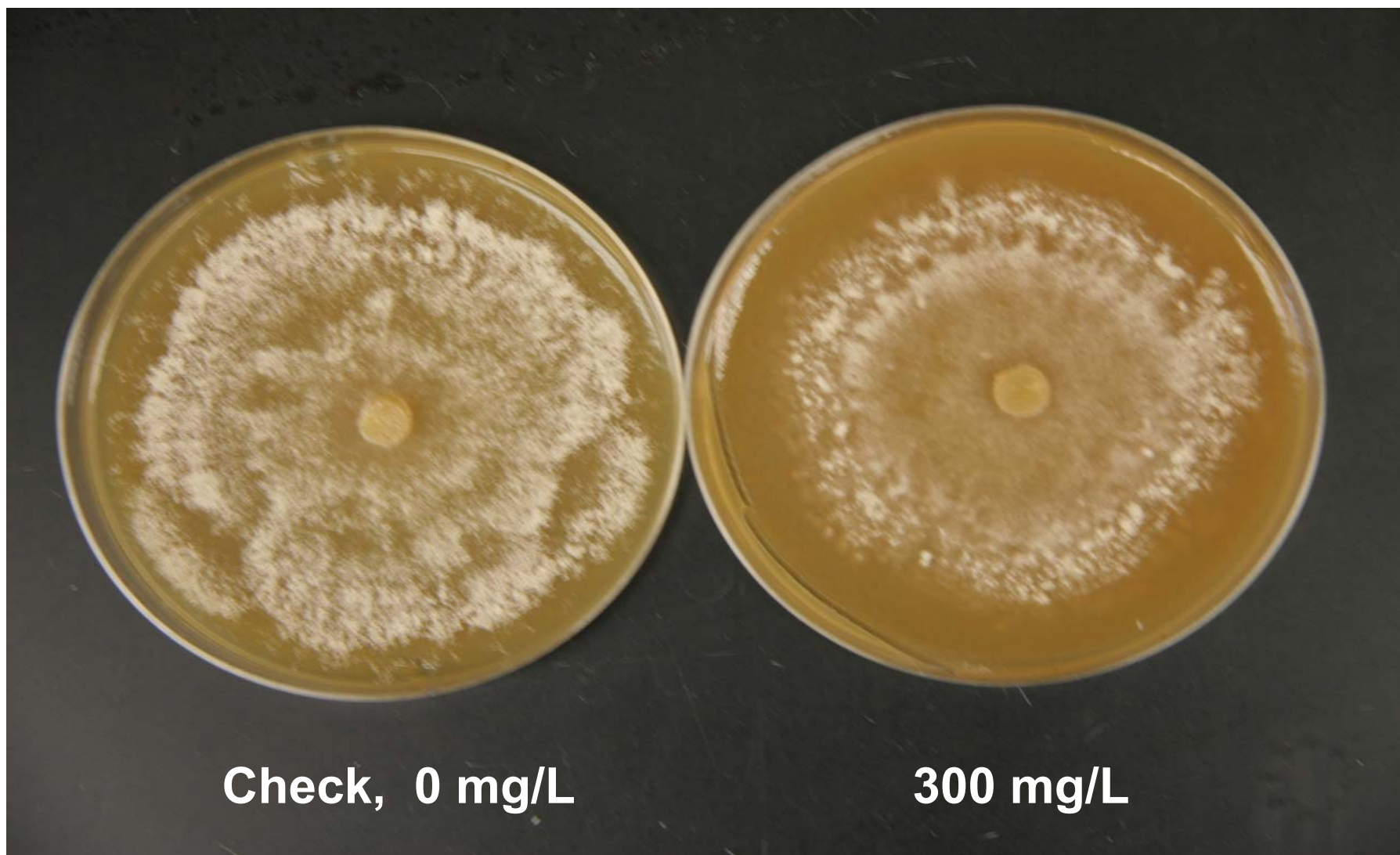
EC₅₀ Values for growth of *P. capsici* isolates on Fluopicolide amended V8 agar



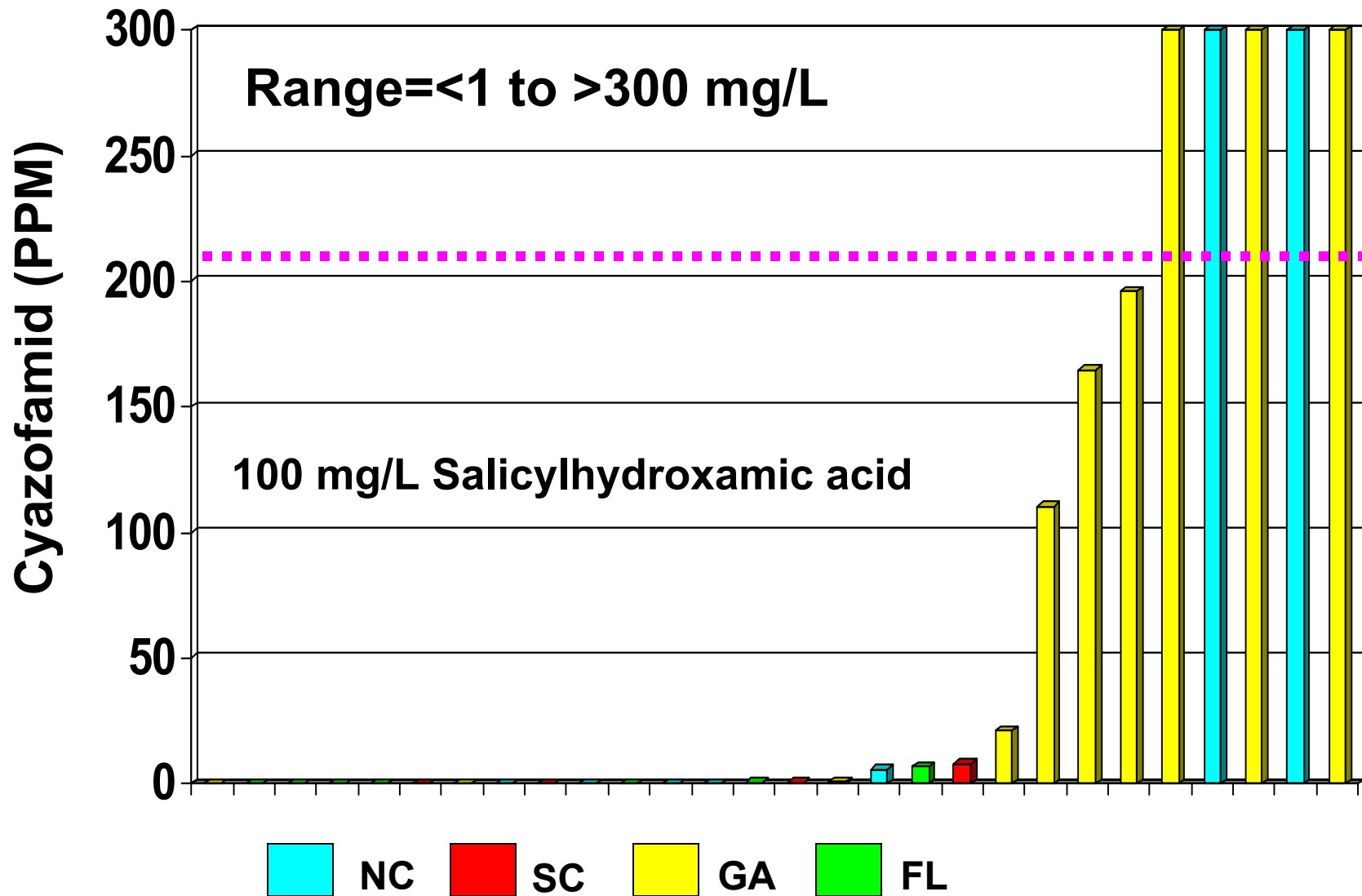
EC50 values (mg/L) for *P. capsici* against new fungicides

Fungicide	Mycelial growth	Sporulation	
			<i>P.infestans</i>
Fluopicolide	0.161 0.098-0.24	0.059 <0.03-0.062	4.1
Mandipropamid	0.022 0.008-0.032	0.008 <0.0015-0.032	0.02-2.98

Mycelial growth of *P. capsici* isolates on Cyazofamid amended V8 juice agar



EC₅₀ Values for growth of *P. capsici* isolates on Cyazofamid and SHAM amended agar



Effect of Ranman (2.75 fl oz/A) on Fruit Rot of Watermelon caused by *P. capsici* isolates



Check



Ranman



Fungicide X

Growth of *P. capsici* Isolates on Ranman treated Cucumbers

Ranman concentrations

Cyazofamid (mg/L)

0 Check

10

100

300

Silwett L-77 (2 Fl Oz/A)

3 *P. capsici* isolates

6 replications



0 10 100 300 mg/L Cyazofamid

EC₅₀

Isolate 1

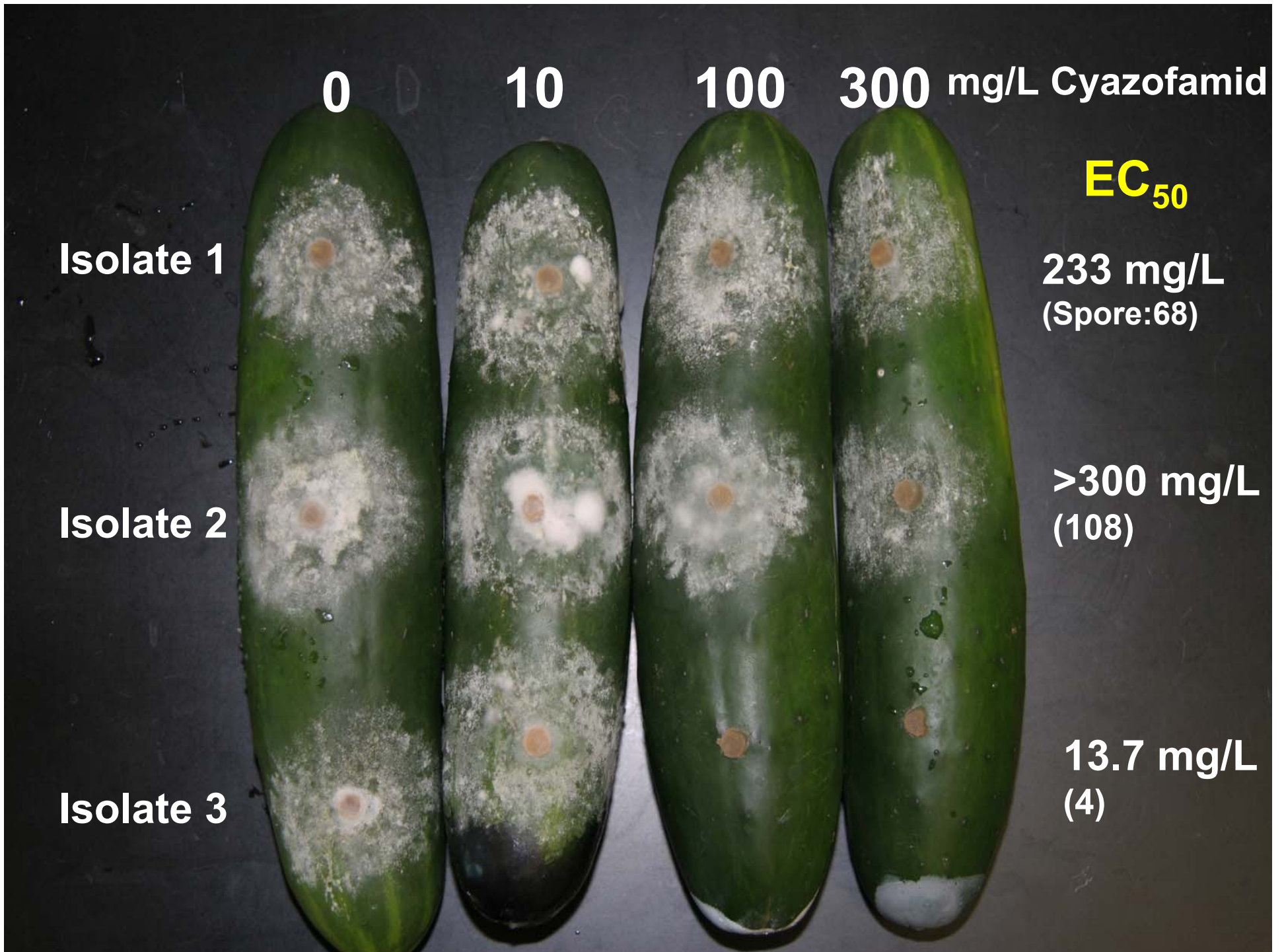
233 mg/L
(Spore:68)

Isolate 2

>300 mg/L
(108)

Isolate 3

13.7 mg/L
(4)



FRAC Code List

Fungicide	Mode of Action	Resistance Risk
Mefenoxam	Inhibits RNA synthesis	High
Dimethomorph	Phospholipid biosynthesis & cell wall synthesis	Low-Med
Mandipropamid	Phospholipid biosynthesis & cell wall synthesis	Low-Med
Zoxamide	β tubulin assembly in mitosis	Low-Med
Cyazofamid	Respiratory inhibitor, Qil	Med-High
Fluopicolide	disrupts membrane activity	Res. not known

FRAC: Fungicide resistance action committee

www.frac.info/publications