

Olive Knot

Pseudomonas syringae,pv.*savastoni*



UC Statewide IPM Project
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Life Cycle

- Bacteria survive in galls
- Spread by wind and rain
- Infect openings in tree
 - Leaf scars, pruning wounds, freeze cracks
- Infection-fall, winter, spring
- Symptoms-late spring, summer

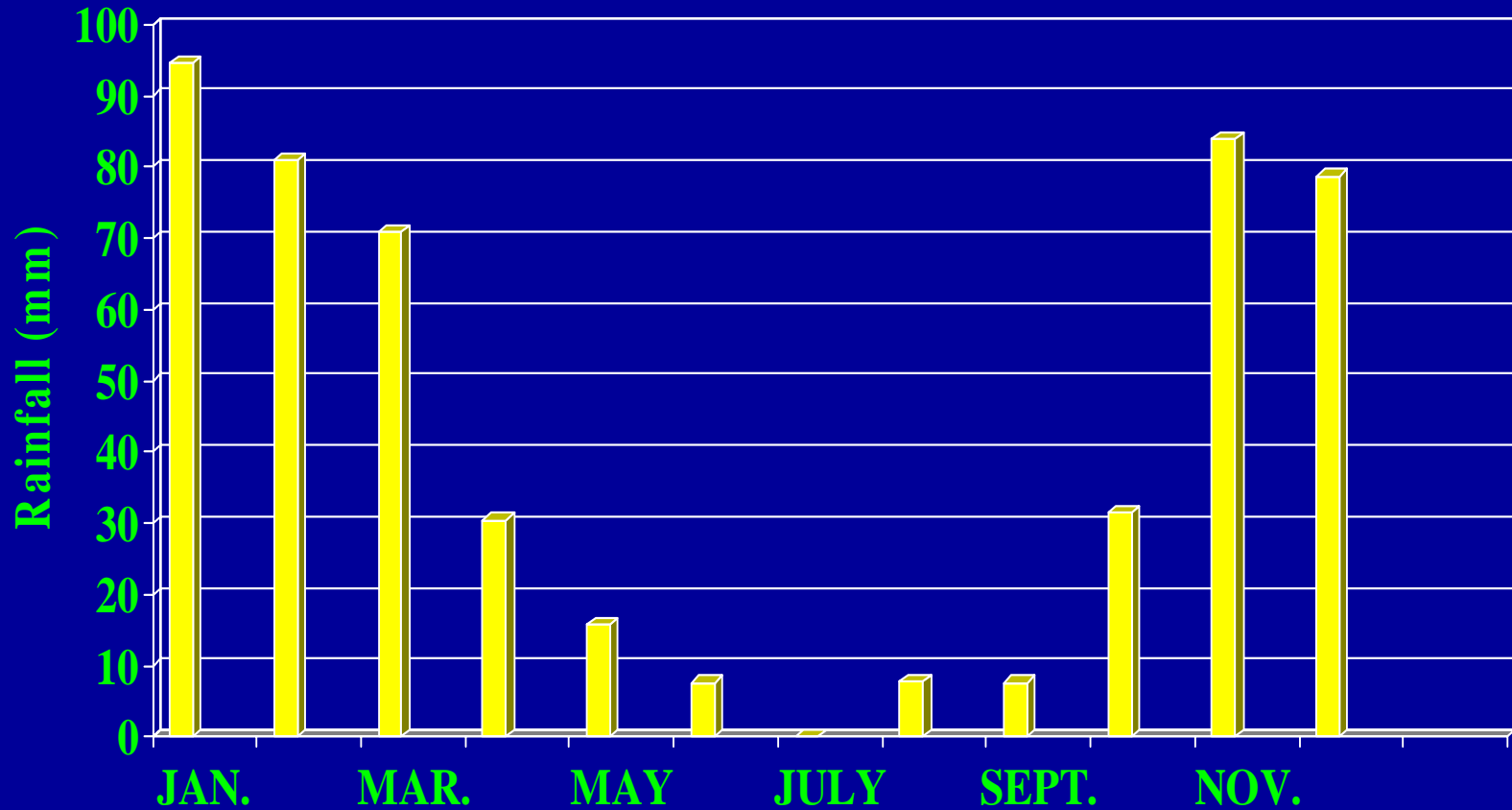
Freeze Injury



Hail Damage



Average Rainfall by Month for Orland, California



Wounding Study 1991-1993

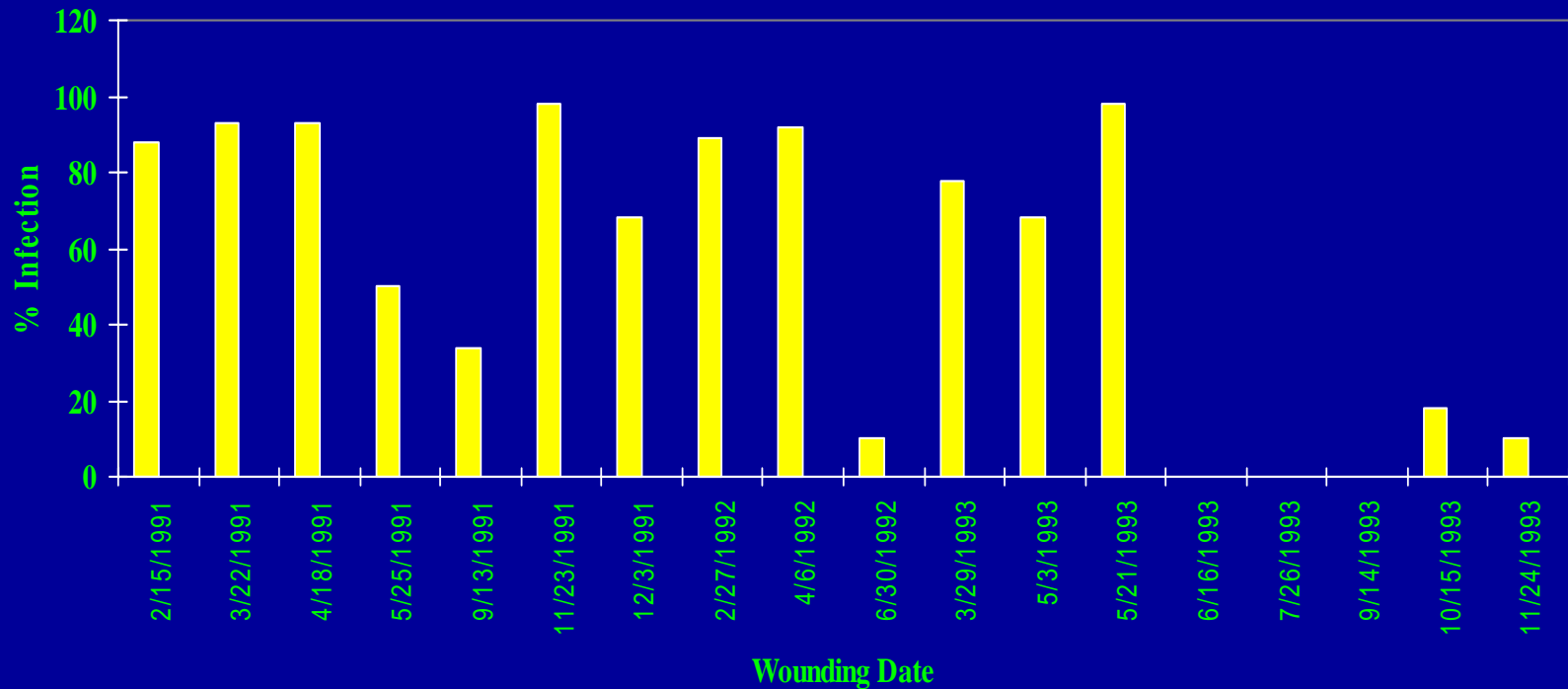


Olive Knot Wound Study

4 Wounds/tree

11 replicates 2-15-91 to 6-30-92

10 replicates 3-29-93 to 11-24-93

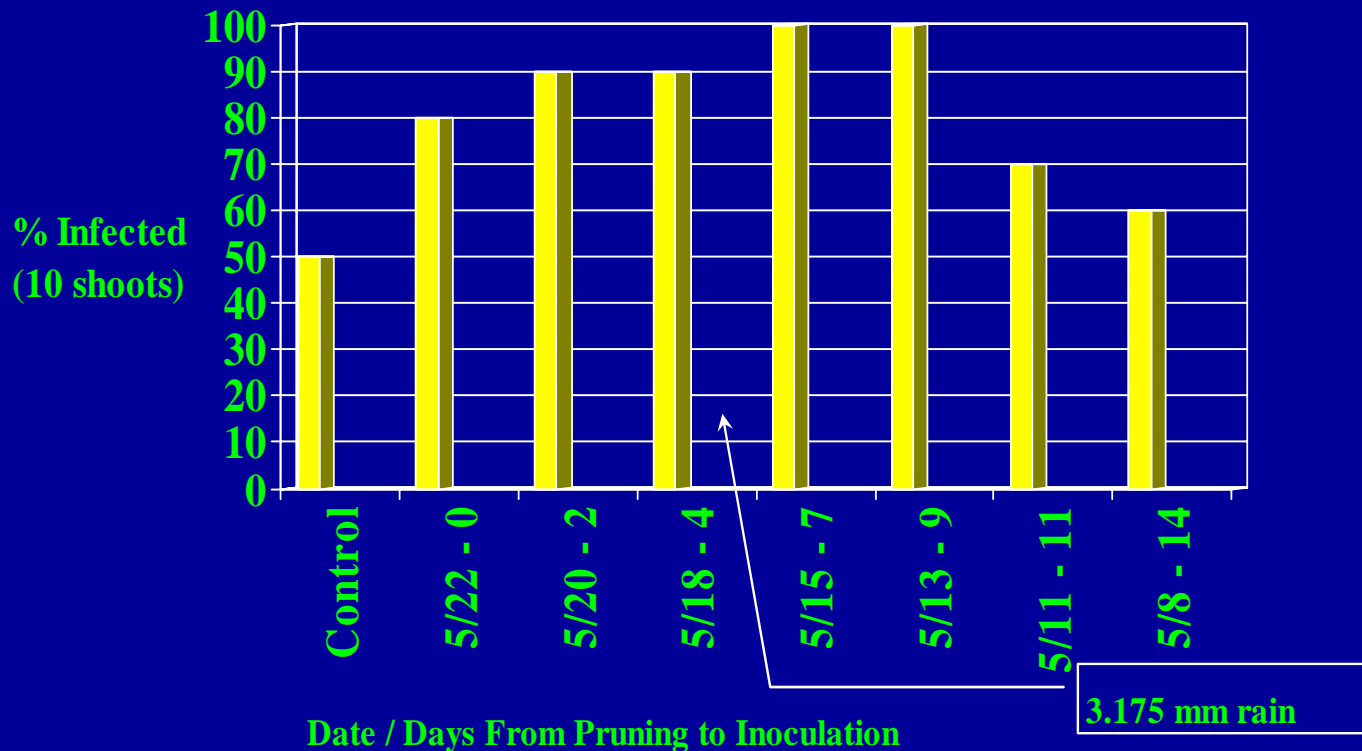


Olive Knot Pruning Wound Study

Manzanillo Variety

Pruning Dates: 5-8-92 to 5-20-92

Inoculated 5-22-92



Effect of Copper Sprays Defoliation and Rainfall on Incidence of Olive Knot Disease

Teviotdale and Krueger 1997-2000

- Shoots defoliated monthly
- Disease development tracked
- Spray timings compared

Results

- More disease development from spring defoliations
- Positively correlated to rain spring (Mar through June)
- Not correlated to winter rain (December through February)
- More sprays = better control
 - Best treatment was 3 sprays – 1 fall and two spring

Control

- Variety susceptibility in order-Manzanillo, Sevillano, Ascolano, Mission, oil varieties?
- Prune out during dry period (late spring)
 - Reduces risk of freeze injury
 - Allows wounds to heal before infection period

Control-Continued

- Similar to Peacock Spot
 - Copper Sprays
- Timing-preventative
- More sprays are better
 - 3 sprays, one fall and two spring worked best
- Central Valley recommendation- 2 sprays, fall and spring.
- Spring spray is the most important



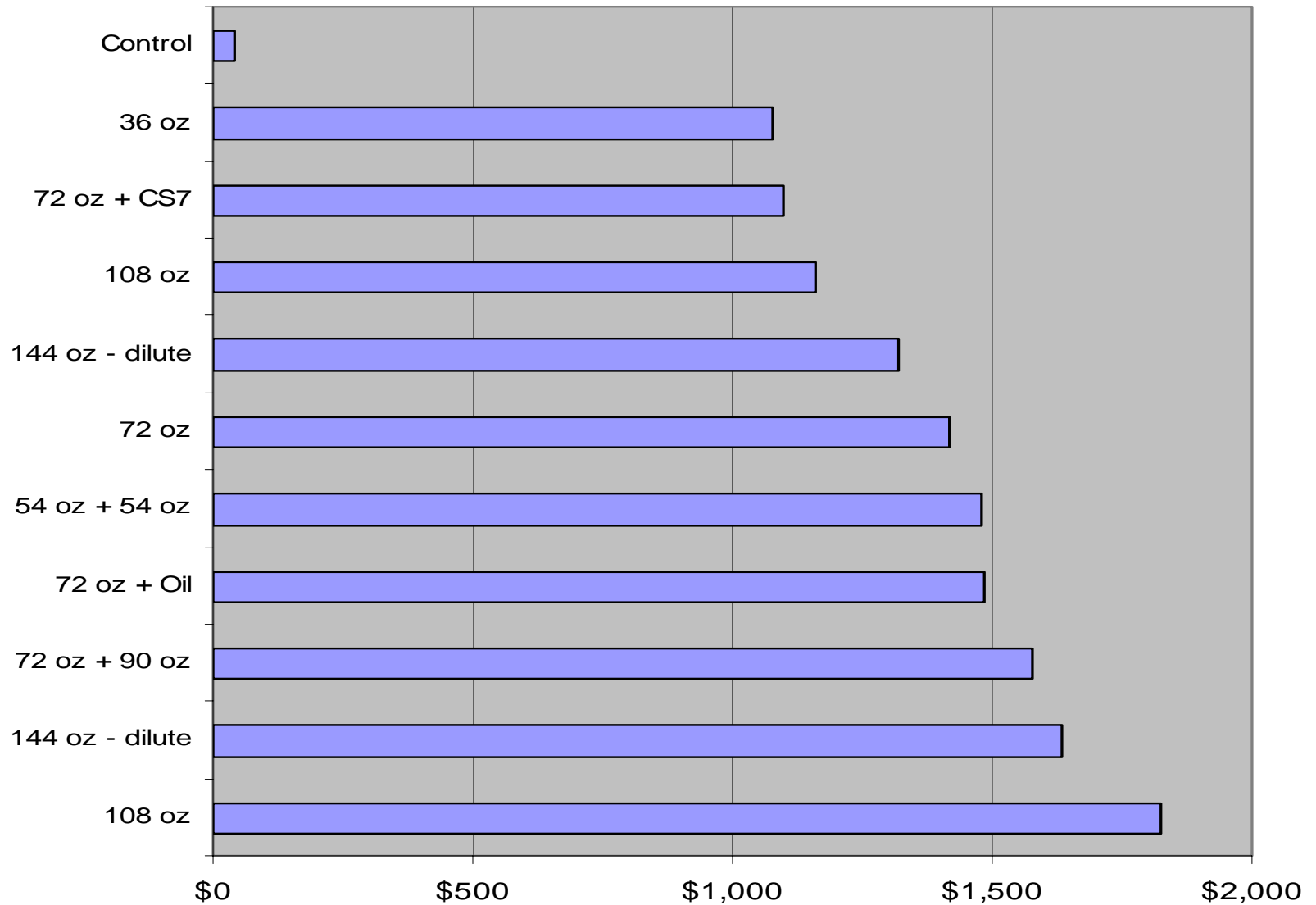
Available since the 1950s

Use Limited By:

- Inconsistency of response
 - Over or under thinning
- Cost
- Variety response



1999 Olive Thinning Dollars per Acre minus harvest costs



1999 Results

- All treatments thinned fruit and improved value/ac minus harvest cost
- Less than 72 oz. per acre had significantly lower value/ac minus harvest cost than higher treatments
- Sequential sprays (3 days after the first) resulted in additional thinning

1998 Sevillano Thinning Trial

Treatment Timing **Set / 10 Nodes**
(days after full bloom)

2	1.3	A
4	2.5	A
8	1.9	A
11	2.5	A
Control	3.1	B

1999 Sevillano NAA Thinning Trial

Average Fruit And Shotberry Set Per 10 Nodes

Treatment Timing	Fruit Set Per 10 Nodes		Shotberry Set Per 10 Nodes		Total Set
Full Bloom + 6 days	1.3	A	4.5	B	5.9
Full Bloom + 13 days	2.5	AB	3.1	AB	5.6
Full Bloom + 16 days	1.9	AB	1.5	A	3.4
Full Bloom + 20 Days	2.5	AB	1.3	A	3.8
Control	3.1	B	1.2	A	4.3
LSD.05	1.22		2.75		NS

*Treatment = 150 ppm NAA

Summary of Four Years of Chemical Thinning With Sevillano

- Fruit set can be reduced with post bloom application of NAA
- Thinning response is correlated to post application temperatures (two to three days)

Thinning Response Correlated To:

- Post bloom temperatures (3-4 days)
- Timing- DAFB
- Allow prediction of response within 3-4 days of application
- Adjust application timing based on predicted weather

Recommendations

- Use a minimum of 72 ounces of Liqui-Stik Concentrate (200 grams a.i. per gallon) per acre
- Watch weather forecast and adjust application timing accordingly