

# FROST PROTECTION STRATEGIES

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Bio and Chemical Methods

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# FROST PROTECTION ON PEACH

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- The objective of the trials was to evaluate foliar applications applied pre-frost to improve fruit set on peach variety White Ladies.
- Treatments were applied with a solo backpack mist sprayer at a rate of 100 gals/acre.
- Four replications, single tree plots.
- There was significant crop reduction both years from cold temperatures with the most severe damage to fruit in 2016.

# BACKGROUND INFORMATION

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## Trial 2016

- There were two main frost events:

The morning of April 6<sup>th</sup> (25°) and the morning of April 9<sup>th</sup> (23°).

Treatments were applied late morning of April 5<sup>th</sup> and late morning of April 8<sup>th</sup>.

Treatments were on the foliage about 15 hours before frost for both applications.

Treatments were applied in the lower coldest area of the orchard.

# BACKGROUND INFORMATION

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## Trial 2017

- There was one main frost event:

The morning of March 23 (19°)

Treatments were applied late morning of March 22.

Treatments were on the foliage about 12 hours before frost.

Treatments were applied in the lower coldest area of the orchard.

# RESULTS 2016

TRT#	TREATMENT DESCRIPTION	Number		Number	
		Fruit set/tree		Fruit set/tree	
		5/12/2016	.05	06/14/2016	.05
1	Pristine 24 ozpr/acre foliar		43.5 ab		24.5 a
2	Pristine 24 ozpr/acre+Parka 8 pintpr/acre foliar		39.5 ab		20.3 a
3	Parka 8 pintspr/acre foliar		35.3 ab		16.0 a
4	Locomotive 4 pints/acre foliar		34.8 ab		20.3 a
5	Fracture 24.5 ozpr/acre foliar		61.5 a		28.0 a
6	Badge Copper + Double Nickle 10 + 2 pints/acre+		28.0 b		25.3 a
999	UNTREATED CHECK		28.3 b		12.5 a

# RESULTS 2017

TRT#	TREATMENT DESCRIPTION	Number Fruit set/tree		Number Fruit set/tree Post Thinning	
		5/12/2016	.05	6/14/2016	.05
1	Pristine 24 ozpr/acre foliar	212.5 b		75.5 b	
2	Pristine 24 ozpr/ac+Badge Copper 10 ozpr/acre foliar	365.0 ab		121.5 ab	
3	Fracture 24.50 fluid ozpr/acre foliar	437.8 a		126.5 a	
4	Fracture 24.5 fluid ozpr/acre+Pristine 24 ozpr/acre foliar	283.3 ab		102.8 ab	
5	Fracture 24.5 ozpr/ac+Locomotive 4 pts/acre+Damoil 5 pintspr/ac foliar	255.8 b		78.0 b	
6	Badge Copper 10 ozspr/acre foliar	359.8 ab		102.0 ab	
7	LPI 6538 8 pints/acre foliar	240.3 b		86.8 b	
8	Omega 13.8 ozpr/acre foliar	248.0 b		84.8 ab	
9	Locomotive 4 pintspr/acre+Damoil 4 pints/acre	293.3 ab		99.0 ab	
10	UNTREATED CHECK	309.8 ab		100.0 ab	

# DISCUSSION OF RESULTS

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- The most effective treatment both in 2016 and 2017 was Fracture and was the only treatment in both years that significantly increased the number of fruit over the untreated check.
- Pristine and Badge Copper trended both years in increasing fruit set but were not significantly different than the untreated check.
- Locomotive may also have some activity but less than the Pristine and Copper.
- Omega, Parka and LPI 6538 were not effective
- Damoil reduced the fruit set.

# FUTURE RESEARCH PROJECTS

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- Need to continue to evaluate Fracture, Pristine, and Copper.
  - Evaluate tank mixes
  - Timing
  - Other fruits such as apples and grapes.
  - Additional compounds that may have efficacy on bacteria.