

ANNUAL REPORT 1987

Project No. 87-U1 - Almond Diseases
Fungicide Applications Versus Yields

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Objectives: Test the effects of captan, maneb, Rovral, ziram; combination of Benlate and ziram, and combination of Funginex and ziram applied in spring on yield. One plot will test the addition of delayed dormant copper sprays to improve the controls mentioned above.

Interpretive Summary:

Disease incidence was very low in all three test orchards. No brown right strikes were observed in Fresno or Kern County trials, and only an occasional infection was observed at the Tulare County site. The rot of young fruit encountered in 1986 was not found in any of the three orchards in 1987.

Shot hole was evaluated by counting the number of lesions on 300 fruits per replication. Even though incidence of shot hole was low, the untreated check and dormant copper alone treatments had the greatest number of infected fruit and number spots per fruit, and other treatments could not be separated.

No significant differences in yield were found between any treatments in any orchard.

ALMOND YIELD TRIAL 1987
 KERN COUNTY, CULTIVAR MERCED
 Disease Data: 28-29 April
 Harvest: 25 September

5 replications, 5 trees/plots, data collected from center 3 trees

| TREATMENT ^{a/} | LBS/ACRE A.F. | X LBS. NUT- MEATS PER TREE | AVERAGE NUMBER | | AVERAGE NUMBER | | |
|------------------------------------------|---------------|----------------------------------|-----------------------------|---------------------------|-------------------------------|-----|-----|
| | | | HEALTHY FRUIT PER 300 | SPOTS PER 300 FRUIT | NUTS PER 100 ^{c/} | NOW | LAQ |
| Kocide + Captan (3x) | 8.0, 10.0 | 43.2a | 296.8a | 8.0a | 5.2 | 1.0 | 3.6 |
| Kocide + Rovral (3x) | 8.0, 1.0 | 35.5a | 285.0ab | 43.5a | 3.4 | 0.2 | 2.2 |
| Kocide + Maneb (3x) | 8.0, 8.0 | 38.8a | 293.6a | 21.0a | 2.4 | 0.2 | 2.4 |
| Kocide + Benlate, Ziram ^{b/} | 8.0, 1.5, 8.0 | 39.5a | 297.2a | 7.0a | 4.6 | 0.4 | 2.0 |
| Kocide + Ziram (3x) | 8.0, 8.0 | 41.7a | 297.6a | 6.0a | 3.4 | 0.2 | 1.8 |
| Ziram (3x) | 8.0 | 38.0a | 294.2a | 14.5a | 4.2 | 0.2 | 3.2 |
| Captan (3x) | 10.0 | 38.7a | 297.4a | 9.0a | 2.8 | 0.2 | 2.6 |
| Rovral (3x) | 1.0 | 36.8a | 256.4 b | 194.0ab | 2.8 | 0 | 2.4 |
| Maneb (3x) | 8.0 | 32.5a | 291.8a | 34.5a | 1.8 | 0 | 2.2 |
| Benlate, Ziram ^{b/} | 1.5, 8.0 | 38.4a | 296.8a | 9.5a | 3.6 | 0.4 | 4.6 |
| Kocide | 8.0 | 32.5a | 212.4 c | 332.4 b | 3.0 | 0.2 | 2.2 |
| Check | - | 33.0a | 132.2 d | 1024.5 c | 5.2 | 0.4 | 5.6 |
| P = 0.05, LSD = 11.2 | | | 32.5 | 244.0 | | | |

Application Dates:

| | |
|--------------------------------|--------|
| Kocide (dormant) | 22 Jan |
| Pink Bud-Popcorn (PB) | 19 Feb |
| Full Bloom-Petal Fall (PF) | 6 Mar |
| 2 weeks after Petal Fall (APF) | 20 Mar |
| 2.5 mph, 100 gpa | |

^{a/} x = times applied; 1x = Kocide applied only once, 2x = PB and PF; 3x = PB, PF, and APF.

^{b/} Benlate and Ziram applied at PB followed by Ziram at PF and APF.

^{c/} NOW = navel orangeworm; LAQ = laquered; SHR = shriveled.

ALMOND YIELD TRIAL 1987
 KERN COUNTY, CONTINUED
 Disease Data: 17 July

25 fruit/tree, 75 fruit/rep

| TREATMENT ^{a/} | AVERAGE NUMBER | |
|------------------------------------------|--------------------------------|--------------------|
| | HEALTHY FRUIT PER PER 75 | SPOTS PER FRUIT |
| Kocide + Captan (3x) | 37.8 bc | 2.1ab |
| Kocide + Rovral (3x) | 28.6 cd | 2.6 b |
| Kocide + Maneb (3x) | 15.6 ef | 4.7 c |
| Kocide + Benlate, Ziram ^{b/} | 54.7a | 0.8a |
| Kocide + Ziram (3x) | 50.5a | 0.9a |
| Ziram (3x) | 43.2ab | 1.6ab |
| Captan (3x) | 50.1a | 1.1ab |
| Rovral (3x) | 19.8 de | 4.5 c |
| Maneb (3x) | 19.0 de | 4.5 c |
| Benlate, Ziram ^{b/} | 44.4ab | 1.4ab |
| Kocide | 6.6 f | 5.7 c |
| Check | 4.1 f | 10.1 d |

P = 0.05, LSD = 11.3

1.5

ALMOND YIELD TRIAL 1987
 FRESNO COUNTY, CULTIVAR MERCED
 Disease Data: 18-19 May
 Harvest: 3 October

5 replications, 5 - tree plots, data collected from center 3 trees

| TREATMENT | LBS/ACRE A.F. | X LBS. NUT- MEATS PER TREE | AVERAGE NUMBER | | AVERAGE NUMBER | | | |
|-------------------------------|---------------|----------------------------------|-----------------------------|---------------------------|----------------------------|-----|-----|--|
| | | | HEALTHY FRUIT PER 300 | SPOTS PER 300 FRUIT | NUTS PER 100 ^{c/} | LAQ | SHR | |
| Kocide (1x) ^{a/} | 8.0 | | | | | | | |
| Ziram (3x) | 8.0 | 33.5a | 299.7a | 0.6a | 3.5 | 0.2 | 0.6 | |
| Funginex, Ziram ^{b/} | 48 oz, 8.0 | 33.6a | 299.1ab | 2.2a | 2.5 | 0.2 | 2.5 | |
| Ziram (3x) | 8.0 | 37.2a | 298.5ab | 5.6a | 8.1 | 0.2 | 2.2 | |
| Ziram (2x) | 8.0 | 34.2a | 297.9 b | 5.3a | 3.6 | 0.1 | 1.7 | |
| Captan (3x) | 10.0 | 30.4a | 299.7a | 0.6a | 3.4 | 0.2 | 2.9 | |
| Rovral (3x) | 1.0 | 37.8a | 299.9a | 0.3a | 6.6 | 0.5 | 1.7 | |
| Maneb (3x) | 8.0 | 30.2a | 299.6a | 0.9a | 4.7 | 0.3 | 1.7 | |
| Kocide (1x) | 8.0 | 31.3a | 299.7a | 0.6a | 2.2 | 0.2 | 1.9 | |
| Check | - | 32.4a | 297.6 b | 5.9a | 3.5 | 0.1 | 1.1 | |
| P = 0.05, LSD = 7.7 | | | 1.6 | 5.3 | | | | |

Application Dates:

| | |
|--------------------------------|--------|
| Kocide (dormant) | 5 Feb |
| Pink Bud-Popcorn (PB) | 19 Feb |
| Full Bloom-Petal Fall (PF) | 3 Mar |
| 2 weeks after Petal Fall (APF) | 17 Mar |
| 2.5 mph, 100 gpa | |

^{a/} x = times treated; 1x = only once at dormant, 2x = PB and PF; 3x = PB, FB, and after petal fall.

^{b/} Funginex and Ziram applied at PB followed by Ziram at PF and APF.

^{c/} NOW = navel orangeworm; LAQ = laquered; SHR = shriveled.

ALMOND YIELD TRIAL 1987
 TULARE COUNTY, CULTIVAR MERCED
 Disease Data: 14-15 May
 Harvest: 29 September

5 replications, 5 - tree plots, data collected from center 3 trees

| TREATMENT | LBS/ACRE A.F. | X LBS. NUT- MEATS PER TREE | AVERAGE NUMBER | | AVERAGE NUMBER | | |
|-------------------------------|---------------|----------------------------------|-----------------------------|---------------------------|----------------|-----|-----|
| | | | HEALTHY FRUIT PER 300 | SPOTS PER 300 FRUIT | NOW | LAQ | SHR |
| Kocide (1x) ^{a/} | 8.0 | | | | | | |
| Ziram (3x) | 8.0 | 10.7a | 297.4ab | 6.6a | 8.0 | 0.4 | 0.9 |
| Funginex, Ziram ^{b/} | 48 oz, 8.0 | 8.8a | 297.4ab | 7.5a | 7.4 | 0.4 | 1.0 |
| Ziram (3x) | 8.0 | 10.9a | 296.5ab | 8.7a | 8.5 | 0.6 | 1.0 |
| Ziram (2x) | 8.0 | 11.3a | 290.9 b | 30.0a | 10.1 | 0.2 | 0.1 |
| Captan (3x) | 10.0 | 9.2a | 298.1a | 4.7a | 8.0 | 0.4 | 0.6 |
| Rovral (3x) | 1.0 | 9.3a | 295.6ab | 18.1a | 8.2 | 0.2 | 1.0 |
| Maneb (3x) | 8.0 | 11.3a | 293.7ab | 19.1a | 8.7 | 0.1 | 0.4 |
| Kocide (1x) | 8.0 | 9.5a | 277.9 c | 71.6 b | 8.6 | 0.2 | 0.8 |
| Check | - | 10.5a | 276.8 c | 75.6 b | 7.7 | 0.8 | 1.5 |
| P = 0.05, LSD = 2.5 | | | 5.9 | 24.1 | | | |

Application Dates:

| | |
|------------------------------------------|--------|
| Kocide (dormant) | 29 Jan |
| Pink Bud-Popcorn (PB) | 21 Feb |
| Full Bloom-Petal Fall (PF) | 4 Mar |
| 2 weeks after Petal Fall (APF) | 18 Mar |
| 2.0 mph, 360 gpa dormant, 100 gpa spring | |

^{a/} x = times applied; 1x = Kocide applied only once, 2x = PB and PF; 3x = PB, PF, and APF.

^{b/} Funginex and Ziram applied at PB followed by Ziram at PF and APF.

^{c/} NOW = navel orangeworm; LAQ = laquered; SHR = shriveled.