

#### 4. Chemical Control/New Products

##### B. New Products

### TECHNICAL UPDATE FOR SUCCESS\* INSECTICIDE, A NEW TOOL FOR INTEGRATED PEST MANAGEMENT IN WESTERN ORCHARDS

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***Control of Overwintering Peach Twig Borer (PTB) in Almonds with Success:*** Six field trials were conducted throughout the almond growing regions of California in 1996 to define the optimal use rate and timing of Success insect control applied as dormant/delayed dormant treatment for management of the overwintering generation of PTB in almonds. Additionally the effect of tank mix combinations with supreme oil on efficacy was evaluated. Treatments were applied during the dormant season in January or delayed dormant in early February using a Solo mist blower @ 100 gpa. Success was applied @ 0.045 and 0.09 lb. a.i./acre and supreme oil was applied at a rate of 2.0 gal/acre. Lorsban\*-4E insecticide at 2.0 lb. a.i./acre was utilized as a commercial standard in all trials. In one of the study locations one of the success treatments and the commercial standard were applied using an orchard airblast sprayer for the comparison of research application methods with commercial scale applications. Evaluations were made in early spring as the number of PTB strikes per tree. Success at 0.09 lb. a.i./A provided efficacy similar to the commercial standard of Lorsban-4E. Addition of supreme oil did not significantly improve the efficacy of Success against PTB. Although dormant applications of Success and the standard were highly effective, the delayed dormant applications provided significantly better control than the dormant applications. Efficacy of Success or the standard using mist blower applications did not differ significantly from commercial airblast applications.

***Control of Spring Generation of Peach Twig Borer (PTB) in Almonds with Success:*** Four field trials were conducted throughout the almond growing regions of California in 1996 to define the optimal use rate and application volume of Success insect control targeted at the spring generation of PTB ("May spray") in almonds. Success insect control treatments @ 0.045 and 0.09 lb. a.i./acre were applied at 450-500 DD from the biofix using a Solo mist blower applicator @ 20 or 100 gpa. In one of the study locations one of the success treatments and the commercial standard were applied using an airblast sprayer for the comparison of the two application techniques. Evaluations were made as the number of PTB strikes per tree. Success @ 0.09 lb. a.i./acre provided control of PTB not different from the commercial standard. There was no significant difference in the efficacy of 20 vs. 100 gpa. Efficacy of Success or the standard using mist blower applications did not differ significantly from commercial airblast applications.

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**Control of Navel Orangeworm (NOW) in Almonds with Success:** Two field trials were conducted in California in 1996 to define the use rate and timing of applications of Success insect control targeted at navel orangeworm in almonds. Success insect control treatments @ 0.02, 0.04, 0.09 and 0.12 lb. a.i./acre were applied at hull-split and also at hull split + 7 days and hull split + 14 days. All applications were made at 100 gpa using a Solo mist blower applicator. Lorsban -4E insecticide at 2.0 lb. a.i./acre was utilized as a commercial standard of comparison. Evaluations were made at harvest as percent nuts infested with NOW. All tested rates of Success at both application timings provided significantly better control of NOW than the untreated. There was no significant difference in the efficacy of the rates of Success tested (0.22 to 0.134 lb./a). and efficacy did not differ significantly from the commercial standard, Lorsban-4E. Because NOW infestations in commercial production orchards are typically found at low levels of infestation (< 5%), efficacy trials against NOW need to be evaluated in larger plots with fewer treatments with a greater number of samples.

**Control Of Oblique-banded Leafroller (OBLR) in Apples with Success:** A series of field trials were conducted in the Pacific Northwest during 1996 to determine the optimal rate, timing and effect of application volume on efficacy of Success against overwintering and second generation OBLR in apples. Studies were designed to be simple 2 X 2 factorials. Two rates of Success (0.083 and 0.167 lb. a.i./acre) were compared in all studies. Studies designed to evaluate the effect of application volume compared each rate of Success applied at either 400 gpa (dilute) or 100 gpa (concentrate). Studies focused on overwintering OBLR compared applications at pink stage vs. applications at petal fall. Second generation OBLR studies compared a single application made at 100% egg hatch with two applications (100% egg hatch + 10 days). Evaluations were made as the number of OBLR larvae per 60 second search. There was no significant difference in the efficacy of the two rates of Success tested against overwintering or second generation OBLR. There was no significant difference in the efficacy of dilute vs. concentrate applications against overwintering or second generation OBLR. Petal fall applications of spinosad against overwintering OBLR were significantly more efficacious than pink stage applications. Most spinosad applications against overwintering OBLR provided significantly better control of OBLR than the commercial standards. Two applications of Success (100% egg hatch +10 days) provided significantly better control than a single application applied at 100% egg hatch and control with two applications did not differ significantly from the commercial standard.