WALNUT HUSK FLY BAiT COMPARiSON

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ABSTRACT

Walnut husk fly can cause serious nut damage by staining shells and by shriveling kernels from early infestation, especially in the Hartley and Franquette varieties. A standard treatment has been to combine an attractant bait with an insecticide to reduce the amount of pesticide needed. Three baits were combined with malathion and compared for efficacy. There were no significant differences among Nulure, Mobait or molasses baits.

OBJECTIVE

Compare the effectiveness of Nulure, Mobait and molasses as attractant baits in walnut husk fly treatments.

PROCEDURE

A Hartley orchard with a history of husk fly infestation was selected in both Yuba and Stanislaus counties. The plot design was a randomized complete block with four replications. Each block consisted of 9 trees in a square planting. A Consep trap with a packet of ammonium carbonate was hung in the center tree of each block on the north side high in the canopy on June 30 and monitored three times per week through hullsplit. Packets were changed every three weeks and traps were changed as needed.

Treatments were applied to the lower half of each tree in the blocks using a handgun sprayer to runoff as follows:

Nulure (2 pts/100) plus Malathion 8 Aquamol (4 pts/100)
Mobait (2 pts/100) plus Malathion 8 Aquamol (4 pts/100)
Molasses (2 qts/100) plus Malathion 8 Aquamol (4 pts/100)

In Stanislaus County, a control was replicated with the above treatments. In Yuba County, a full coverage Malathion 8 Aquamol (4 pts/100) treatment was replicated with the above treatments. Data from a check consisting of four single trees in an unsprayed row was not included in the statistical comparison.

As trap catches increased, at least 200 nuts were nondestructively checked for stings three times a week. Sprays were applied the day after stings were observed in the Yuba County orchard. Applications were made on July 17 (2 stings on July 16) and again on August 11 (4 stings on August 10). The first spray was applied in Stanislaus County on July 30 after observing 3 stings. However, the second spray was applied on August 25 although one sting was observed on August 18.

In Yuba County, 1,000 nuts per treatment (250 per tree) were evaluated for husk fly nut damage on September 2, which was shortly after the onset of
hullsplits. In Stanislaus County, 500 nuts per treatment (125 per tree) were evaluated on September 16 prior to commercial harvest.

RESULTS AND DISCUSSION

Figures 1 and 2 show husk fly counts for Yuba County and Stanislaus County respectively. The husk fly population was about five times higher in Stanislaus County than in Yuba County. There appeared to be two peaks of husk fly emergence in both counties. Higher fly numbers occurred in July in Stanislaus County and in August in Yuba County. The first stings were found at peak emergence in July and again at peak emergence in August in Yuba County. The first sting was found at peak emergence in July in Stanislaus county, but the first sting found in August preceded peak emergence by four to five days.

Figures 3 and 4 show percent nut damage for Yuba County and Stanislaus County respectively. There were no significant differences among the four treatments in Yuba County. The unsprayed control (unreplicated) had greater husk fly damage than the sprayed treatments. Spraying the lower half of the tree with malathion plus one of the baits was as effective as a full coverage malathion spray. In Stanislaus County, there were no significant differences among the treatments or the control. This could be because the spray in August was delayed one week after first sting. This points out the importance of spraying immediately after observing stings when using malathion which has no systemic activity.

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Figure 1

1992 HUSK FLY COUNT
YUBA COUNTY

# OF FLIES

DATES MONITORED - 7/2-9/9

TREATMENT

- NULURE
- MOBAIT
- MOLASSES
- MALATHION

HARTLEY
Figure 3
PERCENT NUT DAMAGE
YUBA COUNTY

PERCENT DAMAGED NUTS

NULURE MOBAIT MOLASSES MALATHION CONTROL
2.2% 4.1% 5.3% 2.3% 8%

CONTROL - AVERAGE OF 4 SINGLE TREES

Figure 4
PERCENT NUT DAMAGE
STANISLAUS COUNTY

PERCENT DAMAGED NUTS

NULURE MOBAIT MOLASSES CONTROL
21.8% 21% 20% 23%

REPLICATED CONTROL