

## POST HARVEST CONTROL OF ROUGH STRAWBERRY ROOT WEEVIL IN STRAWBERRY

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A harvest spray of Brigade at 0.1 lb(AI)/acre was applied on 17 June to control peak black vine weevil populations observed from night sampling and extensive notching of canopy foliage. The low pressure boom application, applied at 50 psi with D6 45 disc core nozzles to deliver 80 GPA provided 99% adult control of an economic level of black vine and strawberry root weevils after 3 days posttreatment. This timing eliminated adults of both species going into the Fall. Unexpected recovery and population increase of both soft and hard bodied rough strawberry root weevils after this harvest spray led to three additional postharvest (D6 45 disc core nozzles) and post-renovation (FloodJet® TK-SS20 nozzles) applications. The reported results underscore the difficulty many growers have experienced over the past 2-3 seasons to control the adult stage of this late season weevil. In addition to the traditional late evening, flash light searches, we conducted daytime adult searches for adults and larvae. The cryptic rough strawberry root weevil was surveyed with 15 minute soil and 15 minute foliage and crown searches in addition to our standard golf-cup cutter to assess larval life stages and presence of adults in five core sample per field. These cores were sifted through an 8 and 16 mesh sieve.

Figure 1 graphically shows the difficulty we experienced controlling rough strawberry weevils compared with the black vine and strawberry root weevils. Our Petri dish and field residual bioassays showed Brigade kills rough strawberry root weevil if they contact or ingest the pyrethroid. This late summer active root weevil is often found congregating tightly in the strawberry crown or clumped together in the soil adjacent to the crown or in moist zones within the soil. Presumably this behavior is associated with water conservation and soil conditions. During this time very little feeding evidence was found from notching injury of canopy leaves. In early October, their winter-spring laid eggs had hatched and larvae are easily recovered from core sample sifted through our meshed screen sieves. Three drench applications of Brigade were applied in 200 to 381 GPA to economic levels of egg laying adults commonly found in September. We conclude that the traditional postharvest rough strawberry root weevil treatment(s) are not effective toward controlling this late season weevil that will lay eggs into early Fall. This control failure, aimed at the preovipositing adult stage, results in fall season through spring larval feeding on strawberry roots. We propose late season drenches of the newly registered Admire and experimental Platinum (thiamethoxam) during periods of rainfall when these materials can contact the soil/root inhabiting larvae and possibly overwintering adults.

At this writing, rainfall patterns are not cooperating with immediate plans to apply soil formulations of both neonicotinoids. The cranberry experience with Admire showed rainfall or irrigation was key to excellent root weevil control when applied from November to April.

### 2003 Brigade Post Harvest Renovation Study

