

## **Assail Demonstration for Control of Internal Lepidopteran Pests in Apple - 2004**

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### **Objective:**

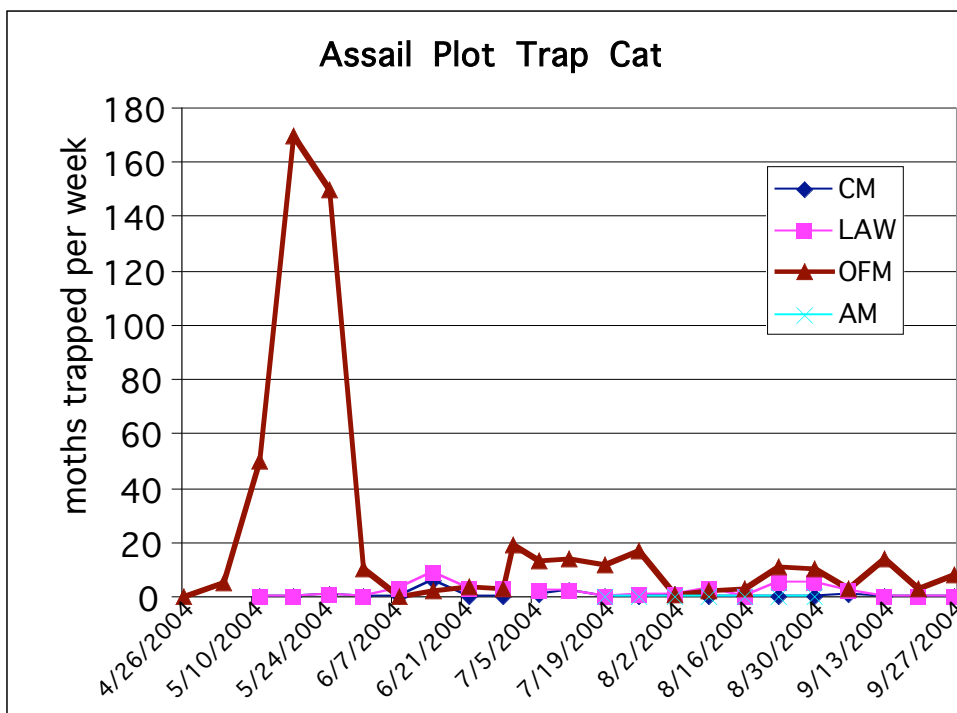
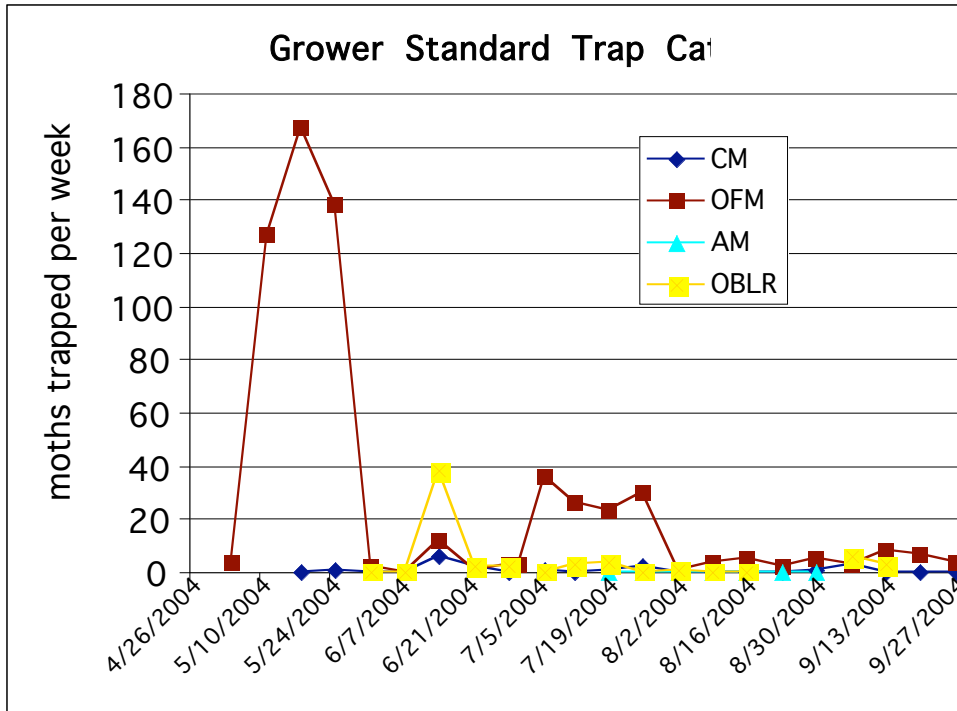
Observe efficacy of Assail under high pressure from oriental fruit moth, *Grapholita molesta*.

### **Methods:**

A block of apples was split and treated with Assail or Grower Standard program for the second generation of OFM. The timing was based on trap data in conjunction with degree day accumulation using a base temperature of 45F, and a treatment timing of 175-200 DD after the start of the second flight. Assail was applied at 3 oz. per acre applied at 100 GPA. The plots were scouted for OBLR, OFM, CM, mites, and STLM. Harvest evaluation was conducted by collecting 50 apples from each of 10 trees in interior of each plot and 50 fruit from each of 10 trees on the border of each plot.

### **Results:**

*Trap Data:* The trap counts show high numbers of OFM early in the season. The recommended treatment threshold of >10 moths per trap per week for summer flight was broken on June 15 in the grower standard and July 6 in the Assail plot. Codling moth were generally of no consequence with trap catch staying below the recommended treatment threshold of 5 moths per trap per week all season. Although trap catch of OBLR was also quite high, it was very late in the season before OBLR larvae were detected most likely due to high rainfall.



The first generation of OFM was controlled as shown in shoot evaluations in late June. There were no differences detected in infestation levels of OFM in shoots and fruit or in CM fruit infestation between plots. Both plots had high mite populations that started to increase in mid-July. STLM was never an issue for control. Apple maggot populations were low with first trap catch noted August 30.

*Scouting results:*

Block	Date	Fruit or Shoots?	Results	ERM recommendation	STLM?
E+W Apple	6/25/2004	both	0	Sample in 14 days	NA
E+W Apple	7/9/2004	shoots	0	NA	NA
E+W Apple	7/16/2004	shoots	3 OBLR	Sample in 7 days	NA
Assail	7/23/2004	fruit	0	Treat	0
Assail	8/3/2004	fruit	0	NA	NA
Assail	8/9/2004	fruit	0	NA	NA
Assail	8/18/2004	fruit	0	NA	NA
GS	7/23/2004	fruit	0	Treat	0
GS	8/3/2004	fruit	0	NA	NA
GS	8/9/2004	fruit	0	NA	NA
GS	8/18/2004	fruit	0	NA	NA

*Spray Records:* The total cost of grower standard insecticide program was \$128, and the Assail program was \$207.

Grower Standard				Assail			
18-Apr	Damoil	6 gal	23.10	4/18	Damoil	6 gal	23.10
22-May	Warrior	5 oz	9.95	5/22	Warrior	5 oz	9.95
24-May	Guthion	1.5 lb	13.50	5/24	Guthion	1.5 lb	13.50
5-Jun	Guthion	1.5 lb	13.50	6/5	Guthion	1.5 lb	13.50
25-Jun	Guthion	1.5 lb	13.50	6/25	Guthion	1.5 lb	13.50
12-Jul	Warrior	5 oz	9.95	7/9	Assail	3 oz	46.50
6-Aug	Guthion	1.5 lb	13.50	7/23	Assail	3 oz	46.50
24-Aug	Guthion	1.5 lb	13.50	8/6	Imidan	3 lb	20.40
14-Sep	Imidan	2.5 lb	17.00	8/24	Imidan	3 lb	20.40
Total cost			127.50				207.36

*Harvest Evaluations:* No internal lepidopteran pests were detected in the fruit at harvest. The only other pest damage of note was 2.3% and 0.8% summer generation of OBLR feeding in Grower Standard and Assail plots respectively. Other damage, report as “stings” (single small holes that did not penetrate the flesh more than 1/8 of an inch) which could have been OBLR feeding or internal lepidopteran bites were 1 and 0.9% in the GS and Assail plots respectively.

**Conclusions:**

Although trap catch numbers were very high for OFM in the first flight, and exceeded trap thresholds for second and third flight, there was little infestation detected in most areas in the region due to the 25 inches of rainfall experienced throughout the growing season. Although the rainfall made it difficult to hold insecticide residues of Guthion,

Imidan, and Warrior, we have no data to show the high mortality rates of hatching OFM larvae under the wet conditions. The rainfall also held down mite numbers until mid July. Both programs obtained excellent control of internal lep pests, but the Assail program was quite pricey for the equal level of control experienced using the grower standard.