

Lygus Bug Vacuum Program



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Why bug vacuums?



- 40% avg reduction in population
- 25 % increase marketable fruit

LYGUS' WORST NIGHTMARE



Vacuum efficiency assessments



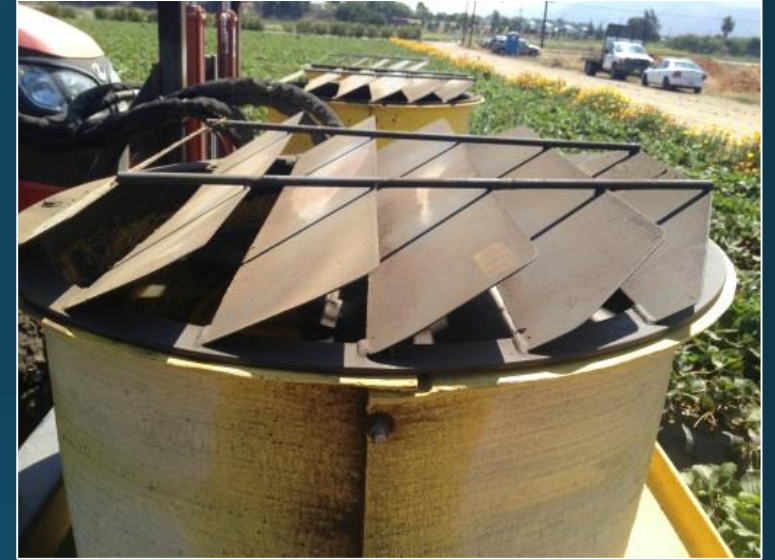
Methods

- Beat sampling
- Sampling at the intake
- Sampling at the baffle/exit



Vacuum Efficiency

- Grower Standard, 45° louvers
42.43 mph:
 - Avg 2.5 % efficiency
- Survival after vacuum:
 - 11.67% large nymphs
 - 22.85% adults survive
- 20° degree louvers increase kill,
decrease windspeed at intake to
27 mph



Baffle Modifications

- 20 degree louvers with $\frac{1}{8}$ " holes
- 46.94 mph
- 100% kill of uptake
- 4.18% efficiency
- Goal: 25%!!



Emerging findings...

- New design and motors with 3000 psi rating
 - Pick up 2x as many Lygus as industry standard (one experiment)
- Moisture is a factor
 - Time of day?

Efficiency doesn't drop off quickly

Low Population Density

Pass #	Total Avg Lygus		SEM	% Small Nymphs
1	16.43	±	2.63	40.87%
2	14.43	±	2.95	43.56%
3	10.71	±	0.92	48.00%
4	11.86	±	1.99	45.78%

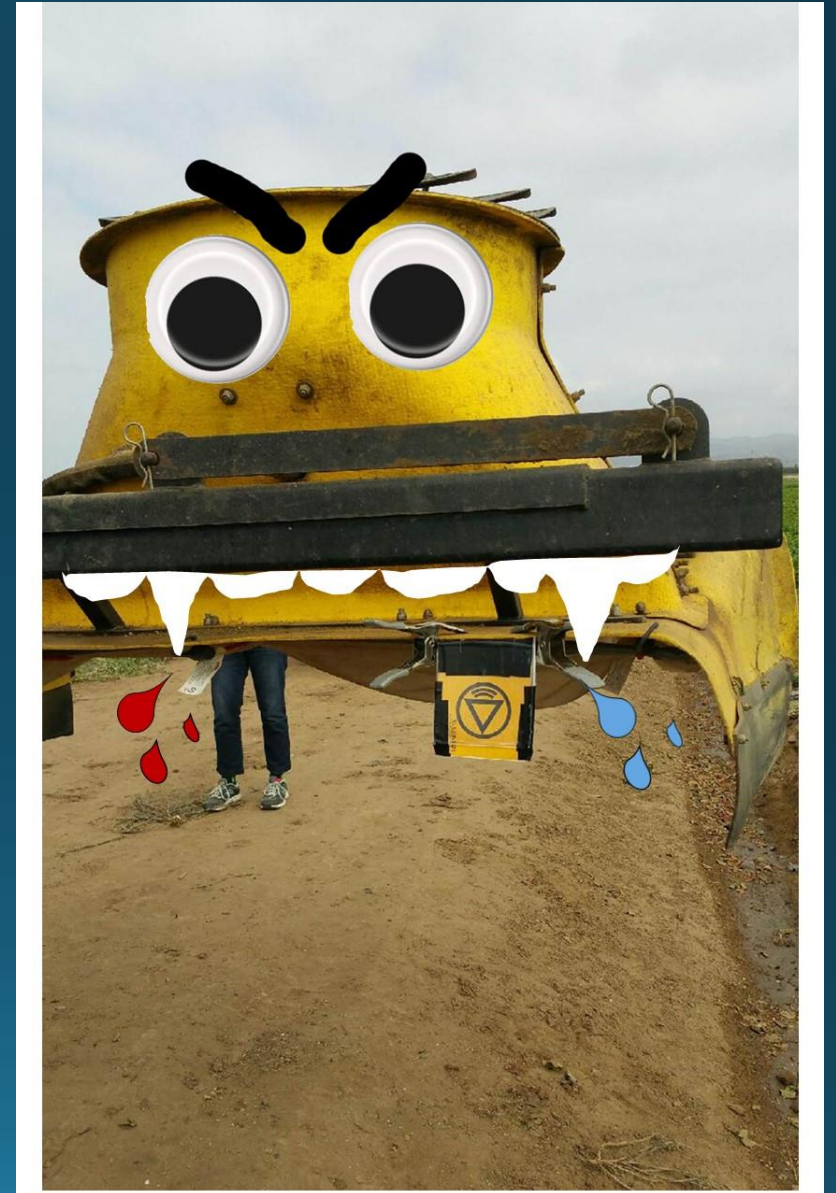
High Population Density

Pass	Total Avg Lygus		SEM	% Small Nymphs
1	162.33	±	12.26	56.67%
2	194.33	±	15.52	65.52%
3	86.67	±	31.10	53.46%
4	50.67	±	3.79	55.92%
5	41.00	±	3.24	54.47%

Small nymphs are 45-57%

Recommendations

- Regularly test and maximize windspeed
 - Up P.S.I. from 2000 to 2500 ups speed by ~5 mph
 - Modify baffles
- Use baffles with angle lower than 45 degrees, with perforated louvers
- Regularly scheduled maintenance on hydraulic
- Train drivers to:
 - Drive 2 mph
 - Operate at canopy



Bug Vacuum Trainings

- CSC designed and rolled out trainings last spring
- Materials available in English and Spanish
- More trainings to come - Spring, 2016



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