

- Lygus Bug Ecology in Washington State Apple Orchards-



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# *Lygus hesperus*

- Can complete 3 (4) generations per year
- Overwinters as Adults
- Mates in late winter
- Phenology model will not do much for early damage



# Phenology model- Methods.

- Lygus population data collected from riparian habitats was used for this study.
- Weather information was accessed from PAWS
- We used the Lygus bug single-sine model with 54°F serving as a horizontal developmental threshold
- The arbitrary biofix date used was January 1

**Cumulative degree day accumulations >54°, predicted dates of peak hatch for the 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> generations of Lygus and the actual average number of Lygus caught per sweep among all of the samples taken bi-weekly at our riparian survey sites (n=72) for 2001 and 2002.**

Date	2001			2002		
	Cumulative DD	Model Prediction	Nymphs /sweep	Cumulative DD	Model Prediction	Nymphs / sweep
Mar 1	0		n/a	9		n/a
Apr 1	35	(1st adult 4/2)	n/a	27	(1st adult 4/9)	n/a
Apr 15	39		n/a	69		n/a
May 1	109	1st hatch	0	119	1st hatch	0
May 15	198	(May 23)	0	166	(May 27)	0
June 1	384		1.6	307		0.6
June 15	484		1.2	473		1.3
July 1	675		0.8	713		1.5
July 15	961	2nd hatch	1.3	991	2nd hatch	3.2
Aug 1	1196	(July 23)	3.0	1351	(July 17)	0.3
Aug 15	1513		1.6	1573		1.2
Sept 1	1784	3rd hatch	0.7	1870	3rd hatch	3.4
Sept 15	1984	(Sept. 8)	2.4	2052	(Sept. 8)	1.3
Oct 1	2153		1.2	2173		1.3
Oct 15	2215		0	2235		0
Nov 1	2237		0	2272		0

# SIGNIFICANT FINDINGS- *LYGUS*

- *Lygus* Damage.
- Branch cage studies in 2001 & 2002 have helped quantify proportional *Lygus* abundance to fruit damage.
- *Lygus* feeding in Spring results in greater proportional amount of fruit injury than *Lygus* feeding in feeding in Summer.



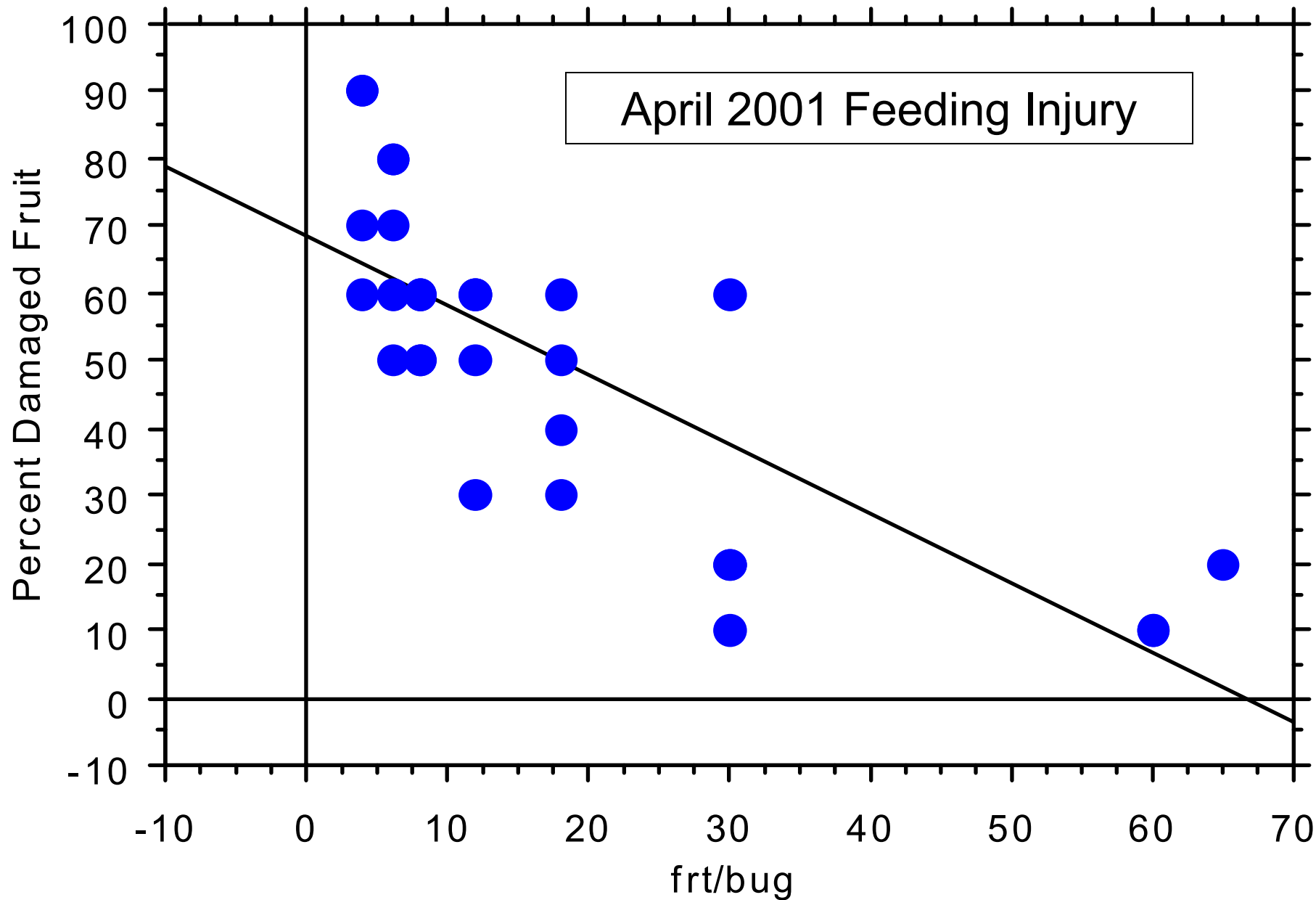
**Captured Lygus were placed in vials  
in the appropriate numbers**



A close-up photograph showing a person's hands holding a branch with green leaves. The branch is secured within a dark mesh cage. The person is wearing a red hat with a white logo and a blue plaid shirt. The background is a blurred green forest.

**Vials were dropped  
into the appropriate  
cage**

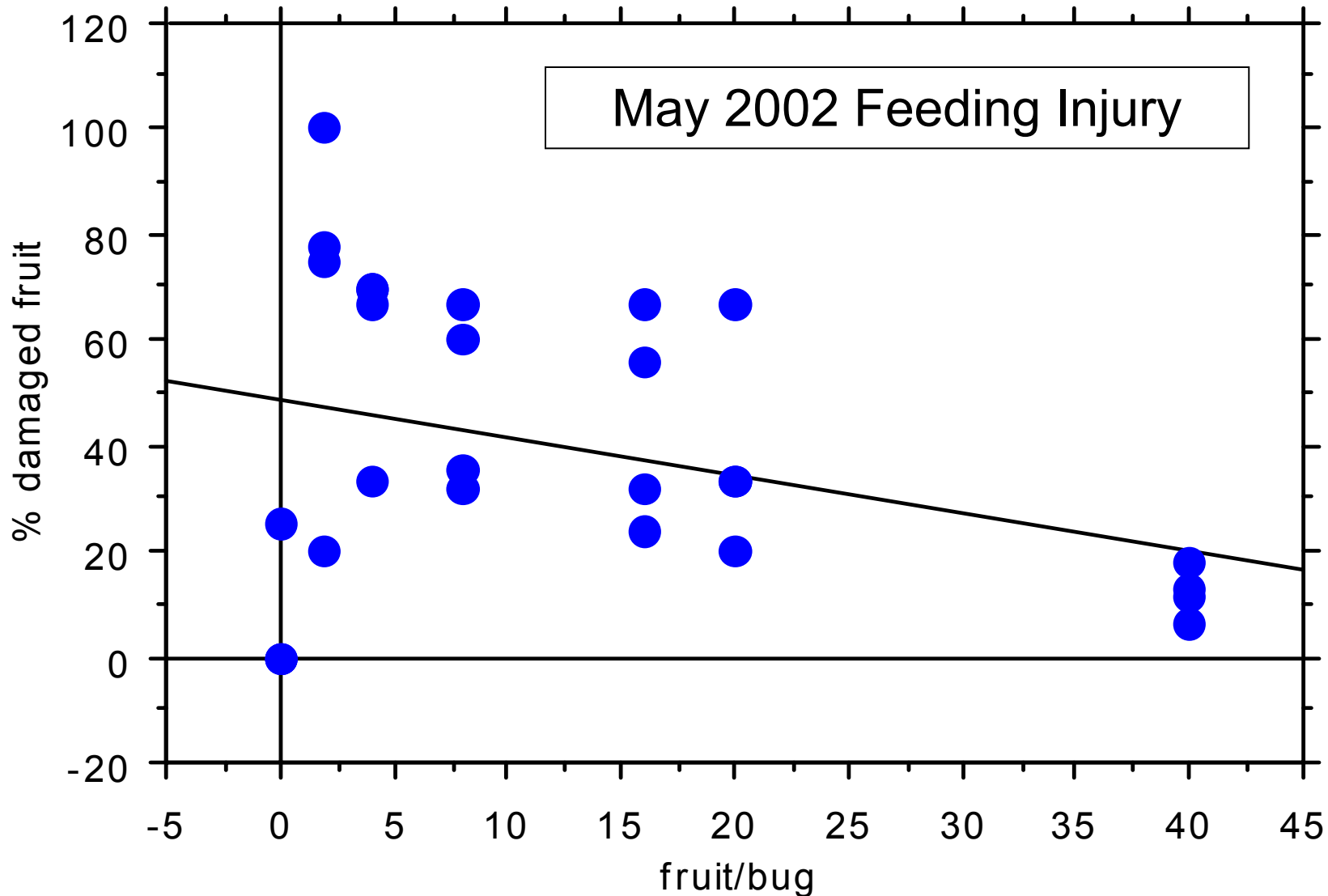




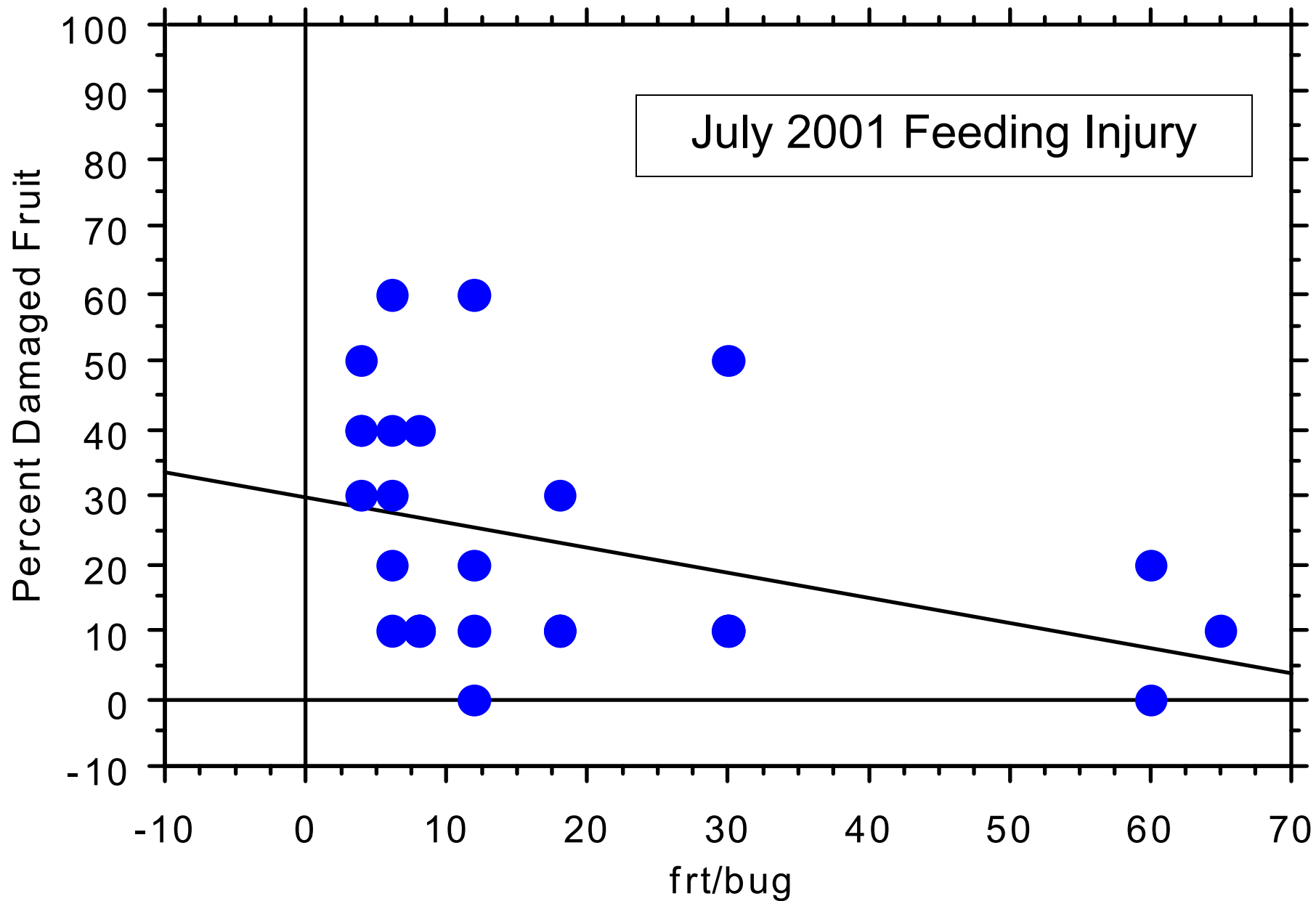
$$Y = 68.628 - 1.037 * X; R^2 = .599$$

# Regression Plot

Row exclusion: Apple cages 2002 for statview.xls (im ported)



$$Y = 48.927 - .717 * X; R^2 = .115$$



# Sequential feeding injury 2002

