

# **Identifying the Economic Impact Caused by Mormon Crickets on Agronomic Crops and Rangeland in Western Utah**

## **Final Report 2003**

### **Project Leaders**

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Milliard County Tooele County Juab County

This IPM project was a real learning experience for all the project leaders involved. The project was very well designed and planned out but due to events beyond our control we were not able to carry out the research as planned.

The two major problems were that the Mormon Crickets didn't infest the same field as they have in the past and the other problem was that many of the farmers sprayed their field as soon as the crickets infested their fields. We saw this problem in all 4 counties that participated. We were only able to collect data in Tooele County and we made visual observations in Milliard and Beaver Counties. Milliard and Juab county conducted their plots together so all the information include in this report for Milliard also includes Juab. We are including individual information for each of the counties that participated. We would like to try to conduct the trials again next year and put the traps out in several different areas of the county so we are more likely to be able to collect the necessary data.

### **Beaver County I.P.M. Report**

We made cages to keep Mormon Crickets out of the control areas by cutting plastic 55 gallon barrels in half and covering the one end with small screen. The cages worked fairly well. I put out 4 cages on one alfalfa field and 3 on another alfalfa field. I also set out 4 cages on range ground. One of the problems we had with the trial is the crickets didn't infest the same areas that they have in past years. That is what happened on my range trial. The other problem is that on the alfalfa fields the farmers came and sprayed the crickets before the trial could be completed. On one field crickets were in the area for 30 days and the alfalfa in the cages appeared to be exactly the same as in the unprotected area. The crop was harvested before samples could be taken.

### **Tooele Mormon Cricket I.P.M. Report**

- Constructed 16 Cages
- Placed 4 in Alfalfa Field in Rushvalley
  - o No Crickets at site
  - o Clipped plots to see how cages effect alfalfa growth
  - o Reduce growth by an average of 6.2 Grams/ cage
- Placed 4 in Oat Field in Rushvalley
  - o No Crickets at site
  - o Clipped plots to see how cages effect Oat growth
  - o Reduced growth by an average of 20.5 Grams/cage
- Placed 4 on range site in Johnson Pass
  - o Light infestation of crickets (1-10 with average of 4 crickets/square yard)
  - o Clipped Plots
  - o Inside cages had an average of 14 grams more yield than outside cages

Weight in Grams

Cage # Outside Inside (Out-In)

Alfalfa 1 90.7 77.3 13.4

Alfalfa 2 96 99.8 -3.8

Alfalfa 3 72.2 62.9 9.3

Alfalfa 4 108.6 102.7 5.9

total 367.5 342.7 24.8

Average 91.875 85.675 6.2

Oats 1 86.2 62.6 23.6

Oats 2 75.7 44.6 31.1

Oats 3 85.5 95.7 -10.2

Oats 4 116.1 78.5 37.6

total 363.5 281.4 82.1

average 90.875 70.35 20.525

Range 1 32.8 45.3 -12.5

Range 2 73.6 104.4 -30.8

Range 3 46.1 45.6 0.5

Range 4 35.1 48.2 -13.1

total 187.6 243.5 -55.9

average 46.9 60.875 -13.975

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Investigator's Name: Mike Pace and Jeff Banks  
 Cage Location: Alfalfa  
 Count taken 10 feet from barrels  
 Number of Crickets/Square Yard/Location  
 Average size of Temperatures inside and outside of barrels

Date Time A B C D E F crickets in inches #1 inside #1 outside #2 inside #2 outside

1 2-May 1:45 0 0 0 0 0 0

2 7-May 10:20 0 0 0 0 0 0

3 16-May 11:45 0 0 0 0 0 0

4 27-May 2:40 0 0 0 0 0 0

5 4-Jun 11:25 0 0 0 0 0 0

6 13-Jun 4:10 0 0 0 0 0 0

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9 The cages were placed in this field next to the ones in the grain plots. We did not ever see any crickets in this area nor were they close by. We believe that was a result of a big spraying project that they did last year around Oak City and so we never really saw the pressure from them this year. Rather than move the cages to a new location, we decide to leave them there because the other place we could have put the cages was doing a large spraying project this year. Since we did not have any crickets present, we did not clip and weigh any of the plots.

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Investigator's Name: Mike Pace and Jeff Banks  
Cage Location: Range Set #1  
Count taken 10 feet from barrels  
Number of Crickets/Square Yard/Location  
Average size of Temperatures inside and outside of barrels

Date Time A B C D E F crickets in inches #1 inside

1 2-May 2:20 0 1 0 4 3 0 3/8"

2 7-May 10:55 1 3 2 1 1 1 3/4"

3 16-May 12:20 0 4 8 1 0 0 1" - 1 1/4"

4 27-May 3:30 3 2 3 4 1 2 1 3/4"

5 4-Jun 11:55 2 1 1 2 1 1 2 1/4"

6 13-Jun 4:30 0 2 1 1 1 0 Mature Adults

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When we placed these cages on the rangeland, we found large numbers of them still near their hatch beds. Once they matured and spread out, we never really found them in high numbers like we hoped to find them.

Investigator's Name: Mike Pace and Jeff Banks  
Cage Location: Range Set #2  
Count taken 10 feet from barrels  
Number of Crickets/Square Yard/Location  
Average size of Temperatures inside and outside of barrels

Date Time A B C D E F crickets in inches #1 inside #1 outside

1 2-May 2:20 0 1 0 0 0 1 3/8"

2 7-May 10:55 0 0 0 1 0 0 3/4"

3 16-May 12:20 3 1 4 1 2 1 1" - 1 1/4"

4 27-May 3:30 0 1 3 3 0 2 1 3/4"

5 4-Jun 11:55 0 1 1 0 0 1 2 1/4"

6 13-Jun 4:30 0 0 1 0 1 0 Mature Adults

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9 Mark, when we placed these cages in on the rangeland, we found large numbers of them still near their hatch beds. Once they matured and spread out, we never really found them in high numbers like we hoped to find them again.

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