

Sampling for Insects

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Introduction:

The reliability of different sampling methodologies changes depending upon the target insect, the stage of cotton growth, and other factors. Sampling methods that count more insects per unit of sampling effort are considered better. Drop cloth samples for tarnished plant bug populations may be more suitable than a sweep net for populations comprised mostly of nymphs because the sweep net catches relatively few nymphs. Sampling efficiency is determined by the precision of the sample, relative to the mean number of arthropods caught and the time required making the sample. In this paper we will compare the sampling efficiency of sweep net, drop cloth, and to a limit extent. There was this thing called pitfall traps where pour the anti-freeze in the jar and put down in the ground with a funnel on top to catch different bugs.

Materials and Methods:

- anti-freeze
- mason jar
- a pipe hole
- funnel
- Ziploc bags



Data from multiple locations we worked at Jonestown located in Clarksdale, Holly Ridge located in Indianola, and Delta View nursery. They each include a good number of drop cloth, sweep net samples, and pitfall traps, were collected over a good two months worth. The data collection was good at all sites. There were no problem collecting bugs at any of the locations. The experiment that I have learned in this process is that putting anti-freeze in a jar with a funnel on top you catch a lot of bugs. We let the trap sit out in the field for a week. Then, we go get the traps out of the hole and replace the jars with another jar of anti-freeze. We bring the jars that was out in the field and put the bugs in a zip lock bag for experiment. The sample unit for the drop cloth, sweep net and suction samples were 2m of a row, 25 sweeps with 15 inch diameter net, and 2 m of a row. Samples were collected in grower fields and experimental test plots located throughout Mississippi. Insects that were consistently counted included tarnished plant bug, lady beetles, big-eyed bugs, lacewing larvae, damsel bugs, various ant species.

Results and Discussion:

A total of about 3000, 5000, and 575 sample units with a drop cloth, sweep net, and suction device were taken respectively. Across all samples, 2787 tarnished plant bugs, 18637 lady beetles, 1349 big eyed bugs, and various other insects. Most of the tarnished plant bugs collected were adults. For all populations, suction samples caught fewer insects per unit of sampling effort than the other methods.

References:

- SAS Institute, 1998. SAS/STAT user's guide: release 7.00. SAS Institute Inc., Cary, NC.
- Snodgrass, G.L. 1993. Estimating the absolute density of nymphs of *Lygus lineolaris* (Heteroptera: Miridae) using drop cloth and sweep net sampling methods. J. Econ. Entomol. 86; 1116-1123.

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