1991
PEAR THRIPS MULTISTATE SURVEY PROJECT
COOPERATIVE AGRICULTURAL PEST SURVEY PROGRAM

COORDINATORS:

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COOPERATORS FROM 1990

Connecticut, Massachusetts, New Hampshire, New Jersey, New York, North Carolina, Ohio, Pennsylvania, Rhode Island, Wisconsin (10 states total).

BACKGROUND.

The pear thrips, *Taeniothrips inconsequens*, infests a wide range of hosts, including maples, basswood, beech and pome fruit. The thrips attack the leaf buds of hardwoods, causing leaf deformation and defoliation, and the fruit buds of fruit trees causing blossom deformation and abortion. Pear thrips have been reported as pests in the USA since the early part of the century, but a severe outbreak in the spring of 1988 in New York, Pennsylvania, Massachusetts, Vermont and New Hampshire brought national attention to this almost forgotten pest. Since the outbreak of 1988, pear thrips damage has ranged from light to severe, depending on the locale.

OBJECTIVES.

To determine the distribution and relative abundance of pear thrips populations in forest stands and to test for possible correlation of pear thrips density and tree phenology with damage severity of sugar maple trees.

SAMPLING LOCALITIES.

Each state participant should select five to ten plots that have high concentrations of sugar maples. Commercial "sugar bushes" are recommended, if available. Plots should be located in different counties within each state.

RECOMMENDED SAMPLING PROCEDURE.

YELLOW VISUAL TRAPS, prestickied unbaited apple maggot traps (see supply section), will be used to collect adult thrips. Traps should be set prior to thrips emergence, about mid-March in New York and New England, and sooner in more southern states (early March). Traps will be checked weekly for 6-8 weeks during adult flight activity.

The visual trap should be mounted on a stake in a vertical position 3' above the ground. A 6" metal shelf bracket screwed to the stake is as convenient method of hanging the trap. Secure the bottom so that it does not wave in the wind. Four yellow visual traps will be monitored within each plot. Place the traps at least 100' apart and at least 100' from the edge of the plot. Traps should be labeled with: observer, locations (i.e., Arnot Forest), trap number, and start/end trap dates.

OBSERVATIONS.

Observe the first seasonal occurrence per state and post Telemail message immediately to NER1 & NER2. Observations will be made over a 6-8 week period, including the 5-7 weeks following the first thrips capture at each plot. Traps should be replaced and examined every week (seven day interval).

DATA SHEETS for all observations will be made available by the coordinators. Record the beginning and final dates associated with each trap-catch. Count and record the number of thrips per board, using 10x magnifying visors, or bring boards back to the laboratory for microscopic examination. Disposable plastic gloves are recommended for handling sticky traps.

All participants are encouraged to count the thrips captured in their traps. However, with prior acknowledgment, traps may be mailed to the University of Massachusetts for assessment. If you are in need of this assistance, contact Craig Hollingsworth. John Weaver will confirm any questionable pear thrips identification. These traps should be folded, placed in paper bags and mailed to him. Please do not place traps in plastic bags, because the trap-captured insects will rot.

TREE PHENOLOGICAL INFORMATION.

Select and flag two sugar maple trees within a 100' radius of each visual trap. Avoid trees that are less than 12" in diameter, within the same cluster, or within 100' of the edge. Record the following phenological events, on branches at least 15' high: 1. buds dormant; 2. buds swollen, < 1" long; 3. buds swollen, 1" long but still closed; 4 buds 1-1.5" long & opening with leaf tips showing; 5. leaves up to 1" long; 6. leaves up to 2" long; and 7. leaves full-sized, about 6-8" long.

DAMAGE SEVERITY.

Estimates of damage should be made in the spring immediately after leaves unfold completely (mid-June for NY and New England) for each of the eight flagged trees per plot. Using binoculars, rate the amount of defoliation and the quality of leaves present for each tree.

DEFOLIATION RATING:

0. no visible defoliation
1. <30% defoliation
2. 30-60% defoliation
3. >60% defoliation

LEAF DISCOLORATION (MOTTLING) RATING:

0. no visible discoloration
1. <30% discoloration
2. 30-60% discoloration
3. >60% discoloration

LEAF DISTORTION (CUPPING) RATING:

0. no visible distortion
1. <30% distortion
2. 30-60% distortion
3. >60% discoloration

SUPPLIES.

Participants are responsible for obtaining their own materials. The 1991 price to University researchers was approximately $100.00 for 100 traps, depending on supplier. Trece Inc. produces the prestickied, yellow visual traps called "Unbaited AM trap", which are available from the following suppliers:

Pest Management Supply Co., Tom Green, PO Box 936, Amherst MA 01004; (800) 272-7672 or (413) 253-3747

Great Lakes IPM, Jim Hansel, 10220 Church Rd., NE Vestaburg, MI 48891; (517) 268-5693. Optivisors are also available through Pest Management Supply for $23.06 each.

1991 PEAR THRIPS MULTISTATE PROJECT
DATA SHEET

LOCATION: State:_____, Co:_____, Site_____

TYPE OF STAND:_____

NAME & ADDRESS:_____

_____

_____

PART 1: TRAP COUNTS

SETUP DATE: _____

	DATES		PEAR THRIPS COUNTS				
WEEK NO.	SCHEDULE CHECK	ACTUAL CHECK	TRAP 1	TRAP 2	TRAP 3	TRAP 4	TOTAL TRAP CATCH
1							
2							
3							
4							
5							
6							
7							
8							

PART 2: PHENOLOGICAL STAGES OF SUGAR MAPLE TREES

TREE PHENOLOGY STAGES	LIST DATES OF MAPLE TREE PHENOLOGY STAGES FOR EACH TREE							
	TREE 1	TREE 2	TREE 3	TREE 4	TREE 5	TREE 6	TREE 7	TREE 8
Buds dormant								
Buds swollen, <¼" long								
Buds swollen, 1" long but still closed								
Buds 1-1.5" opening with leaf tips showing								
Leaves up to 1" long								
Leaves up to 2" long								
Leaves full-sized (>5" long)								

State of Vermont

Department of Fish and Wildlife
Department of Forests, Parks and Recreation
Department of Environmental Conservation
State Geologist

AGENCY OF NATURAL RESOURCES
DEPT. OF FORESTS, PARKS AND RECREATION

FOREST BIOLOGY LABORATORY
Environmental/Agriculture Lab Building
103 South Main Street
Waterbury, Vermont 05671-0409

MEMO

To: Forest Resource Protection Personnel

Date: March 4, 1999

Subject: Sticky Traps for Thrips

This year, in addition to the thrips soil sampling and associated damage survey, we will be deploying sticky traps to help determine the distribution and relative abundance of pear thrips populations in forest stands in each district. Each of us will deploy and collect a series of traps at one site in a sugarbush in our district. The sampling procedure is described here, and traps are included for your use.

Sampling Sites

Each of us will select one of the currently-used thrips soil sample plots. You might want to choose a sampling site with easy access because the traps will need to be collected and replaced every seven days over an 8 week period.

Recommended Sampling Procedure

Yellow sticky traps will be used to collect adult thrips. Traps should be set prior to thrips emergence. Based on previous years' records, traps should be put out during the week of March 29-April 2, with April 2nd being the latest possible date for deployment. Traps will be collected and replaced weekly for 8 weeks during adult flight activity. Your last pick-up date will be during the week of May 24-28.

Traps are deployed in sets of four. Place the traps equidistant between the five trees that are used for evaluation in the soil sample plot.

To deploy the cardboard sticky trap, open it, bend the cardboard back, and insert the corner tabs to fasten it in the open position. The trap is then mounted on a wooden stake in a vertical position 3' above the ground. Use a twist-tie to hold the trap in place.

When you make your weekly collection of traps, simply fold the sticky sides back together and **label** the outside of the trap with site, trap number and deployment and pick-up dates. These can be refrigerated until delivery to the lab.