

## **Pine Shoot Beetle (*Tomicus piniperda*) Trapping Method Using Lindgren Funnel Traps and Alpha-pinene Lure**

**Purpose of Survey:** The Pine Shoot Beetle (PSB), *Tomicus piniperda*, was first detected in the United States on a Christmas tree farm near Cleveland, Ohio in July 1992. Immediately after the identity of the specimen was confirmed, the Animal and Plant Health Inspection Service (APHIS) began working with other plant protection agencies to determine the extent of the infestation. Several years of subsequent surveys demonstrated the presence of PSB in a number of states. Most detections were in Scotch pine stands with a few in Eastern white pine, Austrian pine, red pine, and jack pine. Detections occurred in Christmas tree farms, nurseries, and established ornamental plantings.

The survey procedure described here was developed to aid in the detection of the exotic bark beetle.

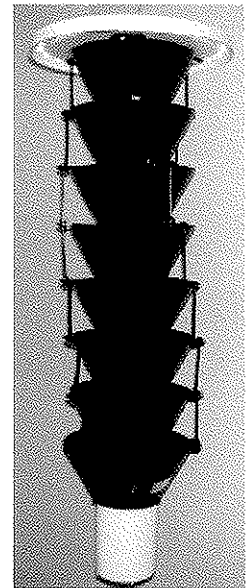
### **Survey Methods:**

#### Equipment

- Lindgren funnel traps (8- or 12-funnel size) with plastic lids and collection jars and conical drain screens for dry trapping
- Two alpha-pinene lures per trap
- Killing agent: One insecticide strip or Vaportape per trap

#### Note:

Lures should be stored in the freezer until use. Always store them in the pouches provided, and reseal opened storage pouch or fold and then clip shut. Place product in field within 8 months of shipping date. Lure expectancy, once deployed, is 90 days (weather dependent). Upon deployment, there is no need to unscrew the vial that holds the lure. The product is released through the container wall.



#### Survey Sites

For most counties included in this detection survey, ten traps are deployed per county. Survey sites should contain hard pines such as red, Scots, or jack pine. Many species of *Pinus* serve as host for any life stage of this pest, but Scotch pine is preferred. Because this survey is for detection only, stand size is not considered a limiting factor, and any size of stand is acceptable.

### Trap Placement

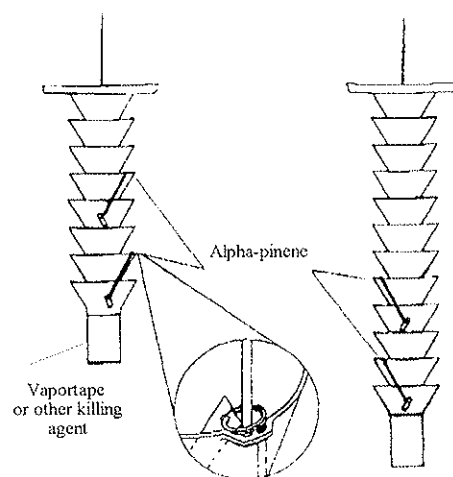
Ideally, traps are hung in elevated shaded positions, usually from a tree branch or suspended from a metal support that can be purchased with the trap or constructed of metal re-bar. If underbrush is present, place trap above it. In windy locations, it is sometimes desirable to secure the trap by fastening a stiff wire to the center of the trap and then to a nearby sapling. The collection jar should be about 6 inches off the ground.

### Lure Placement

Two lures are hung in each trap. Lures are fastened to the trap as shown below.

### Killing Agent

Vaportape or other killing agent is placed in the bottom of the collection container.



### Survey Timing

Traps are deployed by the third week in April and checked every two weeks until mid-June.

### Specimen Collection

Contents of collection containers are emptied into labeled containers. Label information should include (1) assigned plot number (eg., C-1 through C-10 for traps in Chittenden County); (2) county, town and site data; (3) start and end dates for each two-week collection period; (4) name of collector. If specimens found in traps are wet, they can be transferred into alcohol-filled vials to halt any deterioration of trapped organisms. A paintbrush or forceps may be useful in transferring trap catch from the trap to the collection container. (To aid in transfer of specimens, some collectors make a funnel by cutting a plastic bottle in half, leaving the spout intact, so that the larger trap collection container can be readily emptied into a smaller container.)

### Sample Processing

Store collections in the freezer and deliver as soon as possible to the Forest Biology Lab in Waterbury for sorting. In initial screening, suspect *Tomicus piniperda* will be removed and any remaining Scolytids or other Coleoptera will be moved to separate vials.

### Identification

Suspect *Tomicus piniperda* specimens will be sent to APHIS for species confirmation.