

## Guidance for applying fluoropolymers to panel traps

### Approved methods for *Trichoferus campestris*

Recently a new approved method was added for *Trichoferus campestris* (Velvet longhorned beetle): the black cross vane panel trap and ethanol lure. The names in the IPHIS Survey Supply Ordering System are 1) Cross Vane Panel Trap, Black and 2) Ethanol Lure.

If states choose to use this survey method for this pest for the 2017 survey season, a fluoropolymer resin, either Teflon™ or Fluon® [must be applied to panel traps at the field office](#). The current panel traps available for purchase through the IPHIS Survey Supply Ordering System are not coated with a fluoropolymer resin. PPQ plans to start transitioning to traps that are pre-treated with Fluon®, by the manufacturer in 2018; depending on availability from the trap manufacturer.

\*Note, for 2017 *Trichoferus campestris* surveys, you may still use either of the previously approved methods of Black Light Traps or Visual Survey. In 2018, Black Light Traps and Visual Survey will no longer be approved methods for this pest. These methods are not as effective as the new approved method and will be phased out in 2018.

### Product Recommendations

Teflon™ and Fluon® are fluoropolymer resins and are available as aerosol sprays and suspensions, respectively. Either can be applied to the surfaces of panel traps. Once dried, the fluoropolymer creates a slick surface that prevents beetles from escaping the trap. This is especially important for large beetles, such as *Trichoferus campestris* and *Monochamus* spp., although it has also been shown to be effective for smaller beetles like emerald ash borer.

Two fluoropolymers, Fluon® and Teflon™, are approved for use in CAPS surveys. The only approved Fluon® product is available through Northern Specialty Chemicals in gallon, quart, and pint sizes. Teflon™ aerosol spray, such as DuPont Teflon™ Non-Stick Dry Film Lubricant, is available through many retailers in a 14 ounce can.

There are other companies that sell Fluon® products; however, some of these products have been observed to break down after a year or so, become chalky, and give off an unpleasant odor that may interfere with lure efficacy (though this has not been tested). In studies conducted by PPQ Science and Technology (S&T), the Fluon® from Northern Specialty Chemicals has been the only product that has performed consistently. In 2017, other Fluon® products may be used; however, PPQ S&T cannot ensure their efficacy.

Another product, Rain-X, is an effective lubricant, but must be reapplied every 3 weeks throughout the survey season to remain effective. Teflon™ and Fluon® have been found to be effective for longer periods of time. Teflon™ will remain effective throughout the survey season but must be reapplied each year. Fluon®, if applied correctly, requires less maintenance

overtime. After the initial application, the Fluon® coating should remain effective, without need for re-application, for several trapping seasons.

Fluon® has also been found to significantly increase capture rates of wood boring beetles. Multi-funnel traps coated with Fluon® have been shown to be more effective than those left uncoated or treated with other substances (i.e., Rain-X, Teflon™ aerosol sprays).

In an effort to identify the most effective and user-friendly fluoropolymer for panel traps in wood boring beetle surveys, an S&T scientist will conduct field tests comparing several fluoropolymer treatments as well as pre-treated traps in the 2017 survey season.

## **Fluon®**

### **To order Fluon®**

#### Company

Northern Specialty Chemicals  
PO Box 1517, 38 Roberts Road  
Dudley, MA 01571  
508-640-0093

#### Cost

Gallon: \$420  
Quart: \$210  
Pint: \$157.50

#### Ordering Instructions

Orders should be placed via email: Judy Caisse, [jcaisse@maceco.com](mailto:jcaisse@maceco.com)

In the email, include the following information:

- Purchase order – All orders require a purchase order. Northern Specialty Chemicals **does not accept credit cards**.
- FedEx customer number – Orders are shipped through Federal Express and require that the customer provide their FedEx customer number. FedEx customer numbers can be acquired by creating an account with FedEx.

### **Fluon® Application**

It is recommended that Fluon® be diluted with water before being applied to the panel traps. Diluting the Fluon® reduces the overall cost of application per trap and makes it easier and faster to apply. A recent study demonstrated that one part Fluon® diluted with equal (1:1) parts water did not reduce trap performance. Applying undiluted Fluon® may result in a thick, uneven layer that increases the likelihood of debris accumulation. A gallon of undiluted Fluon® will cover approximately 100 panel traps. Diluting the Fluon® will likely double this number to 200.

To create the diluted Fluon®, mix 1 part Fluon® with 1 part water. Find a location to apply the Fluon®. Fluon® will stain clothing or carpet. If allowed to dry on a hard surface, the Fluon® will become very slick, so Fluon® should be applied outside or over a tarp. Wear gloves when applying the Fluon® and consult the Material Safety Datasheet for any other recommended

personal protective equipment. Use a kitchen sponge to apply a thin layer of the diluted Fluon® to all surfaces of the panel trap's cross-vanes and the inside of the bottom funnel. Once coated, hang traps to dry for 2-3 hours or until dry to the touch.

#### List of suggested supplies

- Kitchen sponges
- Container to mix and hold diluted Fluon®
- Gloves
- Large tarp (optional)
- Dismantled panel traps and trap funnel
- Apparatus to hang traps (outdoors)

#### **Storage and maintenance of Fluon®-treated Traps**

At the end of the season, use a damp microfiber cloth to clean off accumulated debris. Store traps in a dry and covered space, with protection from UV exposure. The Fluon® coating should be effective for multiple field seasons with minimal care.

#### **Teflon™**

##### **To order Teflon™**

Teflon™ aerosol spray, like DuPont Teflon™ Non-Stick Dry Film Lubricant, is available for purchase online (e.g., Amazon.com) and in many hardware stores. A 14 oz. can costs between \$10 and \$14.

##### **Teflon™ Application**

To achieve even and complete coverage, the surfaces of the panel trap must be free of debris and residue before applying the Teflon™ aerosol spray. Shake the can well before and during application to keep solids dispersed. Apply a thin, even layer to the panel trap's cross-vanes and the inside of the bottom funnel. Once coated, hang trap to dry for 10 minutes. A 14 oz. can covers approximately 10 panel traps, including the inside of the bottom funnel.

Teflon™ aerosol spray is flammable until the solvent evaporates. To avoid accidental ignition or inhalation, the spray should be applied in a well-ventilated space, away from extreme heat or fire. If allowed to dry on a hard surface, the Teflon™ will become very slick, so Teflon™ should be applied outside or over a tarp. For additional protection, wear a face mask and gloves when applying Teflon™ and consult the Material Safety Datasheet for any other recommended personal protective equipment.

#### List of suggested supplies

- Face mask
- Gloves
- Large tarp (optional)
- Dismantled panel traps and trap funnel
- Apparatus to hang traps

### **Storage and maintenance of Teflon™-treated traps**

At the end of the season, the cross-vanes and bottom funnel of the panel traps should be cleaned of accumulated debris. Store traps in a dry and covered space, with protection from UV exposure. The Teflon™ coating must be reapplied at the start of each survey season.

This document was developed by Joe Francese (PPQ-Science and Technology) and Heather Moylett (PPQ-Science and Technology) in March 2017.

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