Work Instruction (WI)

DIRECTIVE NO.	250-WI-8500.1.6B	**APPROVED BY Signature:**	*Original signed by*
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EXPIRATION DATE:	04/11/2023	**TITLE:**	Associate Chief, Medical and Environmental Management Division

COMPLIANCE IS MANDATORY

Responsible Office: 250 / Medical and Environmental Management Division

Title: Tick Control

PREFACE

P.1 PURPOSE

The purpose of this Work Instruction (WI) is to provide instructions for tick control via the '4-Poster'™ Deer Treatment System. Tick control is authorized at Goddard Space Flight Center (GSFC) to control the tick population for the purpose of tick borne disease prevention.

P.2 APPLICABILITY

This WI is applicable to Medical and Environmental Management Division (MEMD) and their authorized contract employees at Greenbelt only.

a. In this document, all document citations are assumed to be the latest version unless otherwise noted.

b. In this document, all mandatory actions (i.e., requirements) are denoted by statements containing the term "shall." The terms "may" or "can" denote discretionary privilege or permission; "should" denotes a good practice and is recommended but not required; "will" denotes expected outcome; and "are/is" denotes descriptive material.

P.3 APPLICABLE DOCUMENTS AND FORMS

A User's Guide for Installation and Maintenance, *The '4-Poster'™ Deer Treatment System to Control Field Populations of Blacklegged and Lone Star Tick.*

P.4 CANCELLATION

250-WI-8500.1.6A

P.5 TOOLS, EQUIPMENT, AND MATERIALS

1. '4-Poster'™ Deer Treatment System with rollers;

2. '4-Poster'™ Tickicide;
3. '4-Poster'™ Tickicide applicator gun with applicator hood adapter;
4. Latex or Nitrile Gloves;
5. Eye protection;
6. Whole Kernel Feed Corn;
7. Zip top plastic gallon bags;
8. Container large enough to contain chemical and applicator gun;
9. Absorbent material for the bottom of the container;
10. Replacement rollers;
11. Logbook; and
12. Ink pen

P.6 SAFETY PRECAUTIONS AND WARNINGS

Tick control, with the pesticide '4-Poster'™ Tickicide, does not pose a threat to human health when proper protective equipment (i.e., gloves) is donned. The active ingredient in '4-Poster'™ Tickicide is permethrin, which is a synthetic pyrethroid. The pyrethroid family has low to moderate mammalian toxicity. It is considered to be a possible human carcinogen based on laboratory studies. Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after handling.

This pesticide is highly toxic to fish. Avoid contaminating water when applying '4-Poster'™ Tickicide or disposing of equipment that had contact with '4-Poster'™ Tickicide.

Use proper safety precautions and lifting procedures when moving and storing the stations.

P.7 TRAINING

Persons who apply the '4-Poster'™ Tickicide shall be trained and certified as a pest control applicator.

P.8 RECORDS

Record Title	Record Custodian	Retention
Tick Control Logbook	MEMD	NRRS 8/23.5A3a. Destroy 3 years after superseded or when no longer needed, whichever is later.
Annual Summary Report	MEMD	NRRS 8/23.5A3a. Destroy 3 years after superseded or when no longer needed, whichever is later.

** NRRS 1441.1 – NASA Records Retention Schedule*

P.9 MEASUREMENT/VERIFICATION

Measuring the amount of corn consumed weekly to determine if deer utilize the systems.

INSTRUCTIONS

1.0 Method Summary

Tick treatment is performed as a means to control the GSFC tick population for tick borne disease prevention. Ticks feed on the blood of animals in order to develop and lay eggs. While they feed on the host's blood, the tick may transmit a variety of zoonotic diseases, including Lyme disease. The adult ticks may feed on a variety of animals but the primary host at GSFC is the white-tailed deer. Applying a tick killing pesticide to the deer at GSFC will control the field population of ticks by killing the adults as they attempt to feed.

The '4-Poster'™ Deer Treatment System reduces the population of free-living ticks by killing ticks feeding on white-tailed deer. When the deer attempt to feed at the system they will rub against rollers coated with a tick killing pesticide, '4-Poster'™ Tickicide. This treatment will kill ticks already attached and feeding, and new ticks that crawl on the deer and attempt to feed.

2.0 Procedures

The following procedures shall be followed:

2.1 MEMD Responsibilities

MEMD shall be responsible for the following procedures.

2.1.1 Station Setup

1. MEMD shall determine where the '4-Poster'™ Deer Treatment System will be placed. The locations should be based on the previous year's data of corn consumption. The amount of corn consumed is a measurement of the number of deer frequenting the system. Systems should continue to be placed in areas where there is high corn consumption and removed from areas where there is little to no consumption. Systems also should be placed away from areas frequented by people.
2. Each system should be set up on nearly level ground and stabilized to ensure that it will not be knocked over, and the corn will be able to flow freely into the feed port.
3. Refer to the user's guide for help with assembly or other questions about the '4-Poster'™.
4. Fill the '4-Poster'™ with high quality, whole kernel corn only. Poor quality corn can cause more problems with the system than any other factor, besides running out of corn. Poor quality corn may swell or mold when moistened and will obstruct the feed port of the system. If corn cannot flow freely and/or a bad smell occurs from molding corn, deer will not use the device. In addition, surrounding small animals may start chewing on the system to get to the corn when it is not flowing.
5. Allow a minimal amount of corn to flow into the feed port at one time. This requires the deer to dip their heads more frequently thus applying more '4-Poster'™ Tickicide.

6. Read, understand, and follow the '4-Poster'™ Tickicide label printed on the bottle. Use appropriately.
7. Wear protective gloves when handling '4-Poster'™ Tickicide.
8. Precondition new rollers with '4-Poster'™ Tickicide by placing one roller into a zipper top plastic bag and dispensing 40 ml of '4-Poster'™ Tickicide into the plastic bag.
9. Close the plastic bag and rub the '4-Poster'™ Tickicide into the roller until completely saturated. Leave in bag overnight to allow the '4-Poster'™ Tickicide to absorb into roller. Remove the roller from the bag and place it over one of the posts on the system.
10. The plastic bags shall be disposed of as described in section 2.2.

2.1.2 Station Maintenance

1. MEMD shall keep a logbook to document the date, days since last serviced, amount of corn used, amount of corn added, amount of '4-Poster'™ Tickicide applied, and all general observations. This will be used to determine the amount of '4-Poster'™ Tickicide needed to replenish the rollers.
2. To determine the number of deer visiting the '4-Poster'™, divide the number of pounds of corn consumed over several days by the number of days since it was last filled.
3. Determine the dosage of '4-Poster'™ Tickicide needed to replenish the rollers by calculating the amount of corn consumed between visits.
4. Read the '4-Poster'™ Tickicide label to determine how much to apply in comparison to the amount of corn consumed.
5. Record the number of pounds consumed and the amount of '4-Poster'™ Tickicide applied in the Tick Control Logbook.
6. Apply '4-Poster'™ Tickicide to the rollers using the applicator gun.
7. Attach the applicator hood adaptor to the spout of the applicator gun. Prime the gun.
8. Place the applicator hood over the top of the spindle and roller assembly until the hood touches the top of the retainer cap. Slowly depress the trigger until the appropriate amount of '4-Poster'™ Tickicide is applied to roller. It is important to do this slowly.
9. The '4-Poster'™ Tickicide shall be stored in a container large enough to hold both the chemical and the applicator gun. Absorbent material shall be placed on the bottom of the container to absorb any excess chemical.
10. Replace rollers that become heavily soiled or damaged.
11. Replace any broken posts.
12. Clean the feed port of any debris other than clean, high quality whole kernel corn. Ensure that corn flows freely.
13. Add sufficient corn to the feeder so that the feeder will not be emptied during one week of operation.

2.1.3 Station Storage

1. The systems shall be removed from the field and stored during cold winter months. During cold temperatures ticks become dormant, eliminating the need for the systems.
2. The systems shall be placed in storage in December and brought back out around the middle of March, unless there are unseasonably warm temperatures which may cause the stations to stay longer or be brought out earlier.
3. The systems should be thoroughly cleaned prior to placing in storage. Necessary repairs should be made so the systems are ready for the following season.
4. The systems and the chemicals shall be stored upright at room temperature. Avoid exposure to open flames and extreme temperatures.
5. The '4-Poster'TM Tickicide shall be stored inside a cabinet to avoid exposure to water, food, or feed

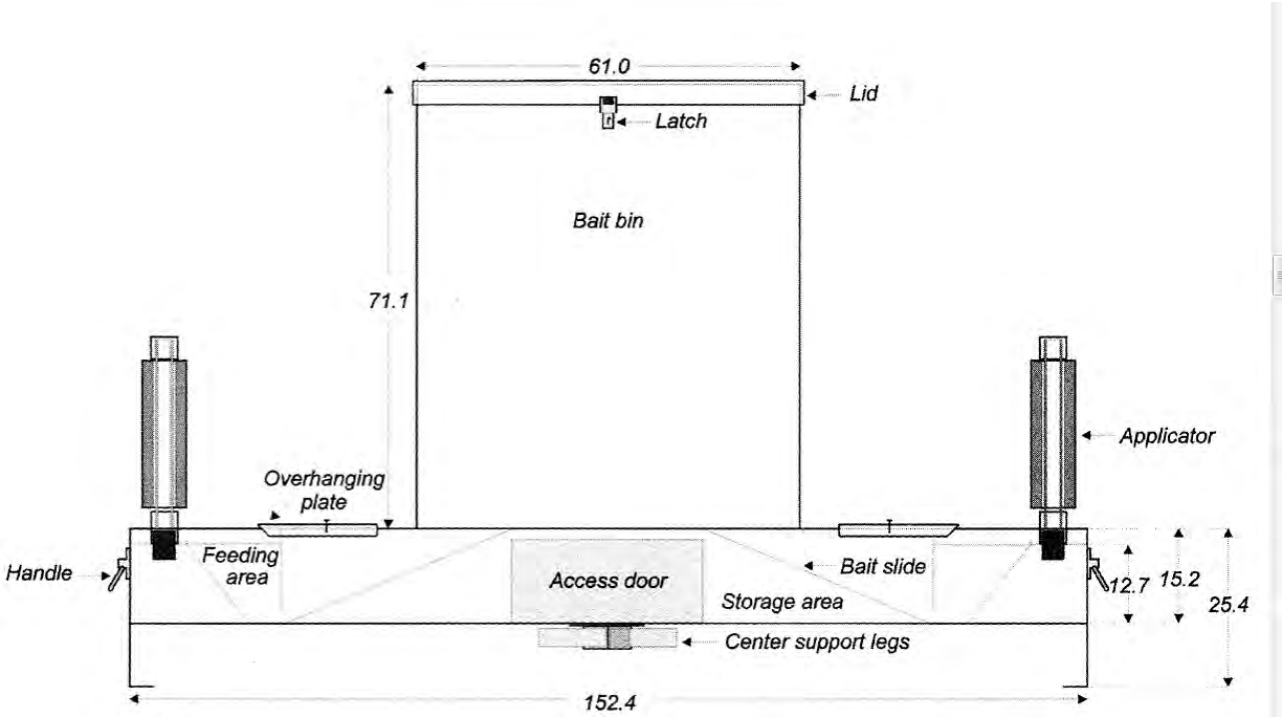
2.2 Pesticide Disposal

1. Empty containers, one gallon and smaller, and materials that contain no free liquid '4-Poster'™ Tickicide, may be placed in trash.
2. Any containers greater than one gallon and any containers or materials that contain free liquid '4-Poster'™ Tickicide shall be disposed of through GSFC's <90-day Waste Accumulation Facility.

2.3 Reports

MEMD shall submit an annual summary report at the end of the season. This report summarizes the total usage of corn and '4-Poster'™ Tickicide for the season, the location of the most active and least active feeders, if any feeders were moved and the dates the feeders were brought in from the field and put in storage.

Flow Diagram



Appendix A – Definitions

A.1 Tickicide – a pesticide used in controlling ticks.

Appendix B – Acronyms

GSFC	Goddard Space Flight Center
MEMD	Medical and Environmental Management Division
PPE	Personnel Protection Equipment
WI	Work Instruction

CHANGE HISTORY LOG

Revision	Effective Date	Description of Changes
Baseline	1/11/2011	Initial Release
A	3/12/15	Updated form to the latest WI template. P5 Added list of tools, equipment and materials. P7 Changed to read, "No formal training is required for this activity." P8 Updated records retention schedule and added the Annual Summary Report to the records retained. 2.1.2 Item 6 changed to delete training reference. 2.1.2 Line 11 changed to a more generic description for the applicator posts. 2.3 Added description of the annual report. Appendix A Tickicide was added to the list of definitions.
B	04/11/2018	**P8 Updated records retention schedule** **P7 Added required pesticide license** **2.1.3 Added the requirement to keep tickicide separate from feed.** **Updated to latest WI template.**