

LESSON 8: Management of Arthropods through Individual Preventive Medicine Measures

TYPE OF INSTRUCTION: Lecture and field demonstration

TRAINING TIME: 4 Hours

TOOLS, EQUIPMENT, AND MATERIALS: None

PERSONNEL: One instructor, MOS 91S or AOC 72 series

INSTRUCTIONAL AIDS: Projection equipment, screen, PowerPoint presentation

REFERENCES: AR 40-5, Preventive Medicine; FM 21-10, Field Hygiene and Sanitation; FM 4-25.12, Unit Field Sanitation Team; FM 4-02.17, Preventive Medicine Services;

STUDY ASSIGNMENT: FM 4-25.12, Chapter 2

STUDENT UNIFORM AND EQUIPMENT: Duty uniform; Soldier's Guide and pencil/pen; FM 21-10; FM 4-25.12

TRANSPORTATION REQUIREMENTS: None

Section I. INTRODUCTION

Show Slide FSTCC0008-1: Title

OPENING STATEMENT: Manpower is the Army's most valuable asset. Everything possible must be done to conserve this asset. During recent wars, more deaths and illnesses have resulted from disease than from enemy action. Throughout the world, diseases carried by mosquitos, ticks, lice, and other arthropods threaten soldiers' health and combat effectiveness. Use of the Department of Defense, or DoD, Arthropod Repellent System is just one of the preventative systems emplaced that can help reduce or eliminate arthropod-borne disease in the field.

Show Slide FSTCC0008-2: Lesson Objectives (1)

NOTE: Inform the students of the enabling learning objectives for this lesson.

LESSON OBJECTIVES

After completing this lesson, you should be able to:

- 8-1. Identify the components of the DoD Arthropod Repellent System.
- 8-2. Select, in order, the steps required to treat uniforms using the IDAA kit.
- 8-3. Recognize the correct procedure to treat uniforms using the .5% aerosol can method.

Show Slide FSTCC0008-3: Lesson Objectives (2)

- 8-4. Recognize the correct procedure to treat uniforms using the 2-gallon sprayer.
- 8-5. Recognize the correct procedure to treat skin using DEET.
- 8-6. Recognize proper wear of the uniform in the field setting.
- 8-7. Identify the measures taken to protect “at risk” soldiers from arthropod-borne illness.

Section II: EXPLANATION

Show Slide FSTCC0008-4: DoD Arthropod Repellent System Components

8-1. THE DoD ARTHROPOD REPELLENT SYSTEM

The DoD arthropod repellent system is made up of three separate components:

- a. **The proper wear of the uniform.**
- b. **DEET on the skin.**
- c. **Permethrin on the uniform.**

Show Slide FSTCC0008-5: Permethrin on the Uniform

Permethrin is an insect repellent that is applied to your uniform, tentage, liners and insect netting. Permethrin **SHOULD NOT** be applied to the skin. There are three ways in which permethrin can be applied.

- (1) Individual Dynamic Absorption Application (IDAA) kit.
- (2) 5% aerosol can.
- (3) Applying permethrin using the 2-gallon sprayer.

d. When used in conjunction with one another these components provide excellent protection against a wide variety of arthropods and arthropod-borne diseases.

Show Slide FSTCC0008-6: IDAA Kit

8-2. INDIVIDUAL DYNAMIC ABSORPTION APPLICATION (IDAA) KIT

The IDAA kit is the most preferred method for treating the BDU.

a. The IDAA kit contains enough material to treat one BDU. It contains two individual bottles of 40% permethrin, two watertight zip lock bags, two sections of string, one pair of disposable plastic gloves, and a clothing marker.

b. The procedures for treating the BDU jacket. These instructions can be found on the back of the plastic bag marked A.

Show Slide FSTCC0008-7: Treating the BDU Jacket – Step 1

(1) Step 1. Lay the jacket flat and fold the sleeves across the front. Then fold the jacket shoulder to shoulder. Tightly roll the BDU jacket starting at the collar. Tie the roll tightly in the center with the string provided in the kit. Set aside.

Show Slide FSTCC0008-8: Treating the BDU Jacket – Step 2

(2) Step 2. Pour $\frac{3}{4}$ canteen cup of clean water into the plastic bag marked with an A.

Show Slide FSTCC0008-9: Treating the BDU Jacket – Step 3

(3) Step 3. Put on the disposable plastic gloves and empty the contents of one bottle of permethrin into the bag, drop the empty bottle and cap into the bag, and gently shake to mix.

Show Slide FSTCC0008-10: Treating the BDU Jacket – Step 4

(4) Step 4. Place the rolled jacket into the bag and zip lock.

Show Slide FSTCC0008-11: Treating the BDU Jacket – Step 5

(5) Step 5. Gently shake the bag twice and then let it rest for at least three hours.

c. The procedures for treating the BDU trousers. These instructions can be found on the back of the bag marked B.

Show Slide FSTCC0008-12: Treating the BDU Trousers - Step 1

(1) Step 1. Lay the trousers flat. Fold them leg to leg then roll them tightly. Tie the roll in the middle with the string provided in the kit.

Show Slide FSTCC0008-13: Treating the BDU Trousers - Step 2

(2) Step 2. Pour $\frac{3}{4}$ canteen cup of water into the bag marked with a B.

Show Slide FSTCC0008-14: Treating the BDU Trousers - Step 3

(3) Step 3. Put on the disposable plastic gloves and empty the contents of one bottle of permethrin into the bag, drop the empty bottle and cap into the bag, and gently shake to mix.

Show Slide FSTCC0008-15: Treating the BDU Trousers - Step 4

(4) Step 4. Put the BDU trousers into the bag and zip lock.

Show Slide FSTCC0008-16: Treating the BDU Trousers - Step 5

(5) Step 5. Gently shake the bag twice and then let it rest for at least three hours.

Show Slide FSTCC0008-17: Hang the Treated Uniform to Dry

d. When the three hours has passed, put on the disposable plastic gloves and remove the jacket and trousers from the plastic bags. The BDU should then be hung in the shade for an additional three hours until it has had time to dry. Finally, consolidate all kit materials into one plastic bag and dispose of them in accordance with your unit's SOP.

NOTE: Hanging the uniform in the sunlight will decrease the effectiveness of the permethrin. Machine dryers, when available, may also be used to dry the uniform.

Show Slide FSTCC0008-18: Mark the Dry Uniform

e. Mark the inside of the uniform Permethrin Treated and the date. This method of treatment is good for the life of the uniform, however, it should be repeated if the uniform is ever dry cleaned.

Show Slide FSTCC0008-19: .5% Aerosol Can Method

8-3. 5% AEROSOL CAN

This method can treat one uniform and is effective for up to six weeks or six launderings. These instructions can be found on the label on the back of the can. This is the second best method for applying permethrin to the uniform.

Show Slide FSTCC0008-20: .5% Aerosol Can – Step 1

- a. Select a site outside that is protected from the wind.

Show Slide FSTCC0008-21: .5% Aerosol Can – Step 2

- b. Place the BDU flat on the ground.

Show Slide FSTCC0008-22: .5% Aerosol Can – Step 3

- c. Shake the can well before spraying. Then, while holding the can six to eight inches away from the uniform, spray it with a slow sweeping motion. Treat each side on the uniform, front and back, for a minimum of thirty seconds.

Show Slide FSTCC0008-23: Treating the Bed Net

NOTE: The treatment should moisten the uniform fabric just enough to cause a slight color change (approximately $\frac{3}{4}$ of the can). Use the remaining permethrin to treat your bed netting.

Show Slide FSTCC0008-24: .5% Aerosol Can – Step 4

- d. Hang the uniform and bed net in the shade for three hours or until dry.

Show Slide FSTCC0008-25: 2-gallon Sprayer Method

8-4. 2-GALLON SPRAYER

It is important to note that this method is the least preferred method for two reasons. First, it is very time intensive. Secondly, trained field sanitation team members or preventive medicine personnel should be the only persons to perform it. Safety is also a major concern. Be sure that whoever applies the permethrin wears goggles, gloves, and a properly fitted respirator.



Show Slide FSTCC0008-26: 2-gallon Sprayer – Step 1

a. After you gather the safety equipment, lay the uniform flat on the ground in an area protected from the wind.

Show Slide FSTCC0008-27: 2-gallon Sprayer – Step 2

b. Put on the gloves, goggles, and respirator. Then triple rinse the sprayer with clean water.

Show Slide FSTCC0008-28: 2-gallon Sprayer – Step 3

c. Add one gallon of clean water to the sprayer tank. Holding the permethrin bottle away from you, open it and empty the contents into the tank. Add the second gallon of clean water.

Show Slide FSTCC0008-29: 2-gallon Sprayer – Step 4

d. Close the sprayer. Lift the can and agitate it slightly to mix the contents. Pump the plunger handle forty to fifty times to pressurize the sprayer to about 50 psi.

Show Slide FSTCC0008-30: 2-gallon Sprayer – Step 5

e. Using a fan nozzle, spray the uniforms from about twelve to eighteen inches away. Spray the front and back of the uniform for approximately fifty seconds each.

Show Slide FSTCC0008-31: 2-gallon Sprayer – Step 6

f. Hang the uniform in the shade for about three hours, or until dry.

Show Slide FSTCC0008-32: Treating Bed Nets and Tentage

g. The 2-gallon sprayer can also be used to treat bed nets and tentage.

(1) To treat the bed net, spray both sides then allow the netting to dry completely. Retreat it every six months or six launderings.

(2) To treat tentage and liners, treat the entryways, inside surfaces, ceiling, walls, and floor. Allow the tentage to dry completely before occupying the tent. If you are deployed in a moderate climate, retreat the tentage every nine months. In tropical climates, retreat the tentage every six months.



Show Slide FSTCC0008-33: DEET on the Skin

8-5. DEET (N, N-diethyl-meta-toluamide)

DEET repels mosquitos, biting flies, chiggers, deer flies, fleas, and stable flies. In tropical areas DEET repels terrestrial leeches. DEET is preferred over commercial products because the long-term effects of commercial products on your health have not been evaluated. In addition, when compared to commercial products, DEET was found to be more effective.

NOTE: Before using a commercial insect repellent, be sure to check with preventive medicine personnel.

Show Slide FSTCC0008-34: Applying DEET to the Skin – Step 1

a. Squeeze 2.5 milliliters of DEET into the palm of your hand. Note that 2.5 ml is approximately the length of the strip on the side of the tube, or about three inches.

Show Slide FSTCC0008-35: Applying DEET to the Skin – Step 2

b. Rub your hands together lightly, then apply a thin layer over your forearms, face, neck and ears. Be sure to apply DEET to ALL exposed skin. Apply the repellent two to three inches underneath the edges of your uniform.



NOTE: Be sure to apply DEET repellent to your skin before putting on your camouflage grease paint.

Show Slide FSTCC0008-36: Applying DEET to the Skin – Step 3

c. Wash your hands after applying DEET to avoid accidental contact with eyes or other sensitive areas.

NOTE: DEET is effective for up to twelve hours under normal training conditions. If training or deployed in a warm, humid climate where you might sweat a lot, you should reapply DEET more often to ensure proper protection. This also applies if you are working or training in the rain.

Show Slide FSTCC0008-37: Proper Wear of the BDU

8-6. PROPER WEAR OF THE UNIFORM

The Army uniform has been designed to protect you from many elements you are likely to encounter in a field setting. Therefore it is important to note that the wear of the uniform in the field is much different from what may be acceptable in garrison.

Show Slide FSTCC0008-38: BDU Jacket

a. Regardless of the season, during tactical field training exercises and deployments sleeves should be worn down and buttoned at the wrist. Keep every button on the BDU jacket buttoned.

(1) Wearing your sleeves down and keeping the buttons buttoned protects you from insect bites and poisonous plants.

(2) Wearing your sleeves down protects you from the harmful effects of the sun.

NOTE: DEET can not be applied to skin that is irritated or infected as a result of sunburn thus increasing your vulnerability to insects.

Show Slide FSTCC0008-39: BDU T-shirt

b. The T-shirt should be worn tucked into your BDU trousers at all times. This is especially important when your tactical situation requires that you lay on the ground or perform low crawls.

Show Slide FSTCC0008-40: Special Procedures

NOTE: If your situation requires tactical low crawling or lying on the ground in a defensive posture, you should apply a thin layer of DEET to your abdomen around your belt line to further protect you from insects.

Show Slide FSTCC0008-41: BDU Trousers

c. Keep the BDU trousers bloused loosely inside your boots.

Show Slide FSTCC0008-42: Overall Fit of the BDU

d. The BDU should fit loosely and should not be starched.

(1) Tight uniforms make it easier for biting insects to reach your skin.

(2) Tight uniforms decrease the body's ability to cool itself.

(3) Starch keeps the fabric from 'breathing.'

Show Slide FSTCC0008-43: Head Nets

e. When required, wear a head net to protect your face and neck from biting insects.

NOTE: Local command policy and medical intelligence reports will dictate the need for head nets.

Show Slide FSTCC0008-44: Protecting Soldiers 'At Risk'

8-7. PROTECTING SOLDIERS 'AT RISK'

Examples of times when a soldier is at increased risk of insect bites or arthropod-borne illness are during physical training exercises, while at rest, or while sleeping. This is especially true since you perform these activities in clothing other than the BDU. There are a few protective measures that can be taken to reduce your risk during these activities.

Show Slide FSTCC0008-45: Screen-in Billets

a. If possible, billets should be screened. While screened billets alone do not offer sufficient protection, they can reduce the insect population thus reducing your exposure to biting insects.

Show Slide FSTCC0008-46: Use Bed Nets

b. Use bed nets treated with permethrin while at rest. Be sure they are properly set up and tucked in at all times, even when you're not in bed.

NOTE: Inspect bed nets periodically for rips and tears. Repair small rips with a sewing kit. Bed nets with large rips should be turned in to your supply section for replacement.

Show Slide FSTCC0008-47: Apply DEET

c. Apply DEET to all exposed skin.

(1) DEET should be applied to the areas of the skin that may come in contact with the insect netting while resting in your cot.

(2) DEET should be applied to all areas of exposed skin when not in uniform, even if you are running a quick errand or placing a quick phone call. Remember to apply DEET three inches below the hemline of the clothes you are wearing.

(3) Reapply DEET more often if you are participating in an activity that causes you to get wet or sweat.

NOTE: The highest incidence of arthropod-borne illness occurs when soldiers are not in their BDU.

Show Slide FSTCC0008-48: Avoid Insect Habitats

d. Avoid areas where high populations of insects are prevalent.

Section III. SUMMARY

Show Slide FSTCC0008-49: Summary

NOTE: Review the main points with the audience. Ask and answer questions to ensure understanding of the material presented in this lesson.

CLOSING STATEMENT: Remember that manpower is the Army's most valuable asset. During this lesson you learned about the DoD Arthropod Repellent System – a system that the Army has in place to protect this asset. Knowing the components of this system and implementing the procedures to use these products are the first steps in the management of arthropods through individual PMM.