

**NOTE: Any yellow text shading or red text annotations have been added by ORNL Subject Matter Experts (SMEs). The annotations have been made in order to document (1) certain Forest Service requirements that have been waived or (2) where some requirements for the ORNL participants have been clarified or established within the ORNL Research Safety Summary (RSS) instead. The RSS 7728 is the work control document that governs the ES&H the activities/actions of the ORNL participants doing work at the Marcell Experiment Station.**

U.S. Department of Agriculture Forest Service	1. WORK PROJECT/ACTIVITY <b>Working in environments that harbor ticks</b>	2. LOCATION <b>Grand Rapids, MN</b>	3. UNIT <b>RWU 4101/4351</b>
JOB HAZARD ANALYSIS (JHA) <b>References-FSH6709.11 and -12 (Instructions attached)</b>	4. NAME OF ANALYST	5. JOB TITLE	6. DATE PREPARED

8. HAZARDS	9. ABATEMENT ACTIONS
<ul style="list-style-type: none"> <li>• <b>Hazard Vector:</b> Deer Ticks (<i>Ixodes scapularis</i>) <ul style="list-style-type: none"> <li>○ Vector ID: Deer ticks have no white markings and are only one quarter the size of wood ticks.</li> </ul> </li> <li>• <b>Hazard Location:</b> Anywhere vegetation grows and animals roam. This includes everything from a mouse on a residential lawn to a deer in a remote, wilderness area. <ul style="list-style-type: none"> <li>○ Between April and October, ticks are found on vegetation and animals in grassland, marshland, and woodland habitats.</li> </ul> </li> <li>• <b>Disease Hazard:</b> Lyme, Ehrlichiosis, and Babesiosis are diseases that can be serious if not treated. All cause similar symptoms.</li> <li>• <b>Disease Risk:</b> A low percentage of ticks transmit the disease. Of the ticks that do transmit the disease, 70 to 90 percent were from nymphal ticks. Nymphs are much smaller than adult deer ticks and thus are harder to spot on clothing or skin. In addition, tick must have been attached to you for 24-48 hours for disease transmittal.</li> <li>• <b>Disease Signs &amp; Symptoms:</b> <ul style="list-style-type: none"> <li>○ Early Lyme Disease: The early stage of Lyme disease is usually marked by one or more of the following symptoms and signs: <ul style="list-style-type: none"> <li>▪ fatigue, chills and fever, headache, muscle and joint pain, swollen lymph nodes, a characteristic skin rash, called erythema migrans. Erythema migrans is a red circular patch that appears usually 3 days to 1 month after the bite of an infected tick at the site of the bite.</li> </ul> </li> <li>○ Late Lyme Disease: Some symptoms and signs of Lyme disease may not appear until weeks, months, or years after a tick bite: <ul style="list-style-type: none"> <li>▪ Arthritis is most likely to appear as brief bouts of pain and swelling, usually in one or more large joints, especially the knees. Nervous system abnormalities can include numbness, pain, Bell's palsy (paralysis of the facial</li> </ul> </li> </ul> </li> </ul>	<p>Engineering Controls * Substitution * Administrative Controls * PPE</p> <p><b>ENGINEERING CONTROLS – AVOID HAZARD</b></p> <p>1) When possible, stay indoors during tick season.</p> <p><b>ADMINISTRATIVE CONTROLS – KNOW ABOUT THE HAZARD</b></p> <p>1) Education</p> <ul style="list-style-type: none"> <li>a. Recommended reading: (<a href="http://www.cdc.gov/ncidod/dvbid/lyme/lyme_brochure.pdf">http://www.cdc.gov/ncidod/dvbid/lyme/lyme_brochure.pdf</a>)</li> <li>b. Know how to ID tick, prevent bites, and recognize signs &amp; symptoms</li> </ul> <p><b>PERSONAL PROTECTION EQUIPMENT – PREVENT THE HAZARD</b></p> <p>1) <b>Clothing</b></p> <ul style="list-style-type: none"> <li>a) Long-sleeved shirt with tight cuffs and long pants with the cuffs tucked into socks and taped securely are recommended</li> </ul> <p><b>ORNL SME: Instead, See RSS LAST Question for field clothing requirements and guidance.</b></p> <ul style="list-style-type: none"> <li>b) Light-colored clothing so ticks will be easier to spot are recommended.</li> <li>c) Brushing off clothing before entering buildings is recommended.</li> <li>d) Check for ticks after undressing. A daily shower or swim followed by a thorough toweling off is recommended as well.</li> <li>e) Remove any ticks that are found. To remove an attached tick, use thin curved forceps, small tweezers, or a tick removal device. Wash &amp; disinfect the bite area.</li> </ul> <p>2) <b>Tick Repellents</b> are recommended. Products containing DEET or permethrin are almost 100% effective in repelling ticks. Follow manufacturer's directions.</p>

<p>muscles, usually on one side), and meningitis (fever, stiff neck, and severe headache).</p> <ul style="list-style-type: none"><li>• <b><u>Disease Diagnosis:</u></b> If you suspect signs or symptoms, see a doctor.</li></ul>	<p><i>The information presented here is for information only. Under no circumstances should it replace the expert care and advice of a qualified physician.</i></p>
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10. LINE OFFICER SIGNATURE	11. TITLE	12. DATE
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