

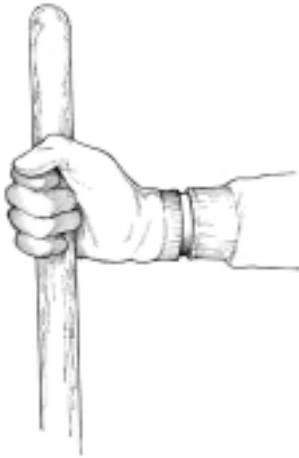


# MSI PREVENTION BULLETIN 6

## Tree Planting

**Tree planters** repetitively plant trees into the ground. This bulletin provides information regarding the typical musculoskeletal issues faced by tree planters and some possible risk controls to either eliminate or minimize the risk of MSI. This information is only a guideline, and the employer must still complete an MSI risk assessment to accurately determine the risks and appropriate control measures applicable to their worksite.

MSI Issue: Digging with Shovel	Possible Risk Control Measures
<ul style="list-style-type: none"><li>The planter grips the shovel handle when digging into hard ground and receives a jarring impact in the wrist and forearm. Using a D-handle, the forearm is placed in an awkward position and the wrist may be bent backwards during the impact.</li></ul> 	<ul style="list-style-type: none"><li>Use a staff or straight handle in compact or rocky soil to reduce the jarring impact in the wrist and arm when pounding the shovel into the ground.</li></ul>   <ul style="list-style-type: none"><li>Keep the grip loose on the shovel handle.</li><li>Probe the ground first. Use the foot (and body weight) to drive the shovel into the ground.</li></ul>



MSI Issue: Digging with Shovel <i>(continued)</i>	Possible Risk Control Measures
<ul style="list-style-type: none"> <li>• The planter continually grips the shovel as it is carried over terrain.</li> <li>• The planter grips too tightly when hands are cold.</li> <li>• The planter grips too tightly when using a smooth staff handle.</li> <li>• The planter cannot get a good grip if the handle diameter is too large for the hand. The thumb and finger should be able to overlap into the knuckle of the thumb.</li> </ul>	<ul style="list-style-type: none"> <li>• Take regular pauses from constantly gripping the shovel, such as alternating hands to carry it.</li> <li>• Stretch the hand and forearm muscles frequently to minimize tightening of the muscles.</li> <li>• Keep hands warm—for example, wear an extra pair of dry gloves, take a break in a heated shelter or vehicle, and carry hand warmers.</li> <li>• Wrap a smooth, compressible gripping surface, such as athletic tape or durable foam, over the gripping area. Avoid ripples that may lead to blisters.</li> <li>• Shave down the gripping surface of the handle.</li> </ul>
MSI Issue: Carrying Seedling Bags	Possible Risk Control Measures
<ul style="list-style-type: none"> <li>• The planter carries seedling bags weighing up to 23 kg (50 lb.) over long distances. The weight of the bags may not be distributed evenly. The bags may ride on the shoulders instead of the hips.</li> </ul>	<ul style="list-style-type: none"> <li>• Adjust the straps so that most of the weight is supported on the hips.</li> <li>• Load and unload bags so that weight is evenly distributed. This is a good practice when carrying seedlings and planting them.</li> </ul> <div> </div>



## MSI Issue: Planting Seedlings

- The planter spends most of the day bent forward when planting at ground level and when preparing or closing the hole for a seedling. This awkward posture creates unequal stresses on the discs in the spine, stretches the ligaments, and may contribute to back pain.




## Possible Risk Control Measures

- Use the shovel as a support when stooping and standing up.
- Keep the arm in close to the body if using the shovel to rise up from a bent-over position.
- To minimize time bent over, have the seedling ready to insert in the ground before bending down.
- Bend from the hips, do not round the back, and keep the knees bent.
- Consider if the shaft of the handle is too high for the planter, causing the arm to be away from the side of the body. Staff handles should be cut down to about elbow height. Educate planters to:
  - Avoid looking at the seedling; look ahead to the planting spot instead.
  - Keep the arm in beside the body.
  - Avoid reaching behind the body.
- Educate planters in exercises to offset the forward bending:
  - Abdominal strengthening: Do partial sit-ups (shown below).



- Trunk extension: Lie down on your stomach and push up with your arms (shown below).



<p><b>MSI Issue: Reaching into the Seedling Bag</b></p>	<p><b>Possible Risk Control Measures</b></p>
<ul style="list-style-type: none"> <li>• The neck twists and bends forward while the arm works behind the body when the planter reaches into the rear seedling bag.</li> </ul> 	<ul style="list-style-type: none"> <li>• Always take seedlings from the front of the pouch.</li> <li>• Take some time to keep seedlings pushed toward the front of the pouch.</li> </ul>
<p><b>MSI Issue: Pace of Work</b></p>	<p><b>Possible Risk Control Measures</b></p>
<ul style="list-style-type: none"> <li>• Planters paid on a piece rate system may work without taking breaks for rest or recovery in order to plant more trees.</li> </ul>	<ul style="list-style-type: none"> <li>• Set realistic goals—new workers should not attempt to keep up with experienced planters.</li> <li>• Take regular rest breaks before fatigue is noticed.</li> <li>• Implement a schedule such as four days of work followed by one day of rest to prevent fatigue accumulation.</li> </ul>

