

## BEST MANAGEMENT PRACTICES FOR PINE TREES

- **Proper planting procedure:** The health of a tree begins with the planting process. Poorly planted trees often perform poorly throughout their entire life. Plant trees at the correct depth and mulch to avoid drought stress.
- **Buy certified disease free stock:** Always purchase trees that are certified disease free. The State of Kansas requires all trees to meet specific pest freedom standards.
- **Plant a mix of tree species:** Do not over plant pine trees. Mix the trees with hardwoods or shrubs. Almost all trees have some insect and disease problems. By planting a mix of species then you avoid a potential disaster.
- **Avoid Scotch pine and look at Ponderosa:** Scotch pine is highly susceptible to pine wilt and likely will harbor the nematode and beetle. Ponderosa pine is preferred for planting since there is scientific evidence pointing to some tolerance or resistance to the disease complex in Ponderosa.
- **Avoid stress:** The beetles are attracted to drought stressed trees. Provide water during dry periods for trees of all ages. It is also important to inspect on a regular basis for early symptoms of insect or disease damage. Early detection is critical for controlling insects and diseases and avoiding additional stress. Stressed or declining trees can attract the pine sawyer beetle.
- **Sanitation:** The most important step is sanitation. Sample pines that die in the late summer or fall for pine wilt. Bring a sample to your County Extension office for submission to the K-State Plant Disease Diagnostic lab. A branch that is at least 2 inches in diameter and 6-8 inches long taken next to the trunk is adequate. Another option is a wedge or cross-section of trunk. If the test is positive, cut the tree down as soon as possible, or by May 1 *at the latest*, before the beetles emerge. In fact, April 1 might be a better deadline just to make sure no beetles emerge. Cut the tree to the ground—do not leave a stump. Chip, bury, or burn the wood immediately to destroy the beetles and nematodes. **Break the cycle of infection** and do not save the wood for firewood. Trees that are in a state of decline or dead should be removed regardless of the cause.
- **Prevent new infestations (especially in western half of Kansas):** Do not import pine firewood from contaminated areas. Be wary of pine nursery stock from infested areas, and monitor nursery stock carefully for a year after planting. If pine wilt is introduced, then remove the tree and continue to monitor surrounding pines for the next two years. Careful scouting and sanitation can eliminate sporadic outbreaks before they get out of control. Contact immediately K-State, the Kansas Forest Service, or the Kansas Department of Agriculture for assistance.
- **Proper Pruning and eliminate competition:** Conduct pruning during the dormant season (December thru February). Pruning during the growing season may attract the pine sawyer beetle. Tree roots and grass roots are not compatible. A tree will have a healthier and more fibrous root system if it does not have to compete with grass roots for space, water, and soil nutrients. Eliminating grass competition and mulching an area as large as possible under the tree is advisable.
- **Preventative injections:** There are several products available now for preventative injections for highly valuable individual pine trees. While they do not provide 100% control, they significantly decrease the likelihood that a tree will be infected with pine wilt. These materials provide no curative activity. That is, once a tree is infected there is no way to stop the disease. The materials need to be applied by a trained tree care professional. Contact your local Extension office or the K-State Diagnostic Lab for more information.
- **Employ professionals when seeking help with trees:** Whether it is a nurseryman, pesticide applicator, or arborist they all have professional organizations and credentials. Talk with them and determine who is the best qualified. Get something in writing regarding costs, treatments, and expected results. A cheap deal is not always the best deal.
- **Keep educated:** Consult with your local extension agent, conservation board, tree board, garden club or others who might help. The internet contains much information at your fingertips regarding tree health. Be aware of the major insect and disease problems in your area. Pines that die over the summer and fall are suspects for pine wilt.