MISSISSIPPI STATE UNIVERSITY EXTENSION

A Checklist of Disease Management Recommendations for Pecan Production

Various diseases threaten pecan production throughout the growing season in Mississippi. While some diseases may not cause severe damage, others may cause significant yield losses. To minimize the impact of diseases, commercial producers and home gardeners should implement a disease management program.

Various disease management practices are available, but every practice will not be effective against every disease. Deciding which disease management practices to use depends on several factors. These include the biology of the pathogen(s) causing the disease(s), the options available and preferences for effective disease management, and the feasibility of available practices for producers/gardeners. The best approach is integrated disease management, which uses a combination of biological, cultural, physical, and chemical practices.

Below are general practices that can be incorporated into a disease management program at different times in the growing season. These practices help prevent the introduction of pathogens into new areas, reduce the spread of pathogens to new plants or plantings, decrease pathogen buildup in a field, lessen the severity or occurrence of disease, and make conditions for disease development less favorable. Specific disease management recommendations for a particular disease can be found in various MSU Extension resources or by contacting your local Extension agent or plant pathologist.

The following steps can also help producers and gardeners improve their ability to manage diseases:

- Know the plant; be able to recognize normal plant growth as well as the symptoms of common nutritional deficiencies.
- Know the common diseases of the pecan in Mississippi and their signs and symptoms.
- Know what information to collect when assistance with plant problems is needed.
- Know where to look for information and who to contact for help.

Before Planting and/or At Planting

- ☐ Choose an appropriate planting site that provides good sunlight, airflow, and drainage.
- ☐ Collect and submit soil samples to the MSU Soil Testing Lab to obtain appropriate fertility recommendations.
- ☐ Collect and submit soil samples to the MSU Extension Plant Diagnostic Lab for nematode identification and quantification. If the pecan root-knot nematode is detected in a potential planting site, nematode treatment options must be implemented prior to planting or a different site should be chosen.
- ☐ Avoid planting near trees or orchards known to have pecan bacterial leaf scorch (PBLS).
- ☐ Avoid planting near plantings of trees (e.g., peach, citrus, and crape myrtle) that attract xylem-feeding insects (e.g., glassy-winged sharpshooter) known to spread the PBLS pathogen.
- ☐ Follow planting recommendations for tree spacing.
- ☐ Select recommended cultivars for commercial or home garden production for your area.
- ☐ **Select cultivars that have resistance to pecan scab**.
- ☐ Purchase disease-free trees from reputable sources; if possible, examine trees for disease symptoms when leaves are present, prior to purchase.
- ☐ Plant only healthy-looking trees; discard trees with signs or symptoms of disease.
- ☐ Plant during the recommended seasons for planting.

Before the Growing Season

- ☐ Calibrate and maintain sprayer equipment; arrange nozzles on sprayers for appropriate coverage, as needed.
- ☐ Determine a tentative spray-program plan and identify fungicides to use in your spray program; follow resistance management guidelines (e.g., rotation or tank-mixing of products with different modes of action [FRAC groups]).

During the Growing Season

- ☐ Follow recommendations for fertilization (soil and plant tissue analysis); do not overfertilize.

- ☐ Avoid practices that leave foliage wet for long periods (e.g., use drip irrigation or adjust the timing of overhead irrigation); do not overwater.
- ☐ Maintain short groundcover in orchards to allow for good airflow.
- ☐ Apply effective fungicides, as needed, when susceptible tissue is present (from when there is 1 inch of growth on trees until nuts stop increasing in size); follow label directions and resistance management guidelines (e.g., rotation or tank-mixing of products with different modes of action [FRAC groups]).
- ☐ Maintain separate sprayers for fungicides/insecticides and herbicides.
- ☐ Remove trees with PBLS or bunch disease when disease is first detected and limited in incidence in an orchard and trees are 3 years old or younger.
- ☐ Remove limbs with PBLS or bunch disease from large, mature trees, when disease is first detected and limited in incidence in an orchard. Infected branches will have decreased yield, but mature trees will not succumb to these diseases; it is not economically beneficial to remove branches or trees when disease is common or widespread in an established orchard.
- ☐ Scout regularly for diseases and insects; some diseases are best identified at certain times of the season (e.g., bunch disease and PBLS).
- ☐ Monitor local disease epidemics; sign up for newsletters or alerts from county Extension agents, specialists, or disease monitoring programs.
- ☐ Monitor and manage insect vectors known to transmit pathogens, if warranted by specific disease management recommendations.
- ☐ Collect and submit plant samples to the MSU Extension Plant Diagnostic Lab for disease identification and appropriate disease management recommendations.
- ☐ Collect and submit plant tissue and/or soil samples to the MSU Soil Testing Lab to obtain appropriate fertility recommendations for the following year and if potential nutrient issues are observed.

During and/or After Harvest

- ☐ Avoid injuring tree trunks and branches when harvesting.
- ☐ Collect nuts shaken or fallen from trees in a timely manner to prevent nuts from remaining on the ground for too long.
- ☐ Practice proper handling and storage of harvested nuts.
- ☐ Remove fallen, diseased plant tissue (e.g., shucks and leaves) from around trees.

Throughout the Year

- ☐ Keep detailed disease and disease management records.
- ☐ Avoid injuring tree trunks and roots with lawn equipment (e.g., mowers, trimmers, etc.).
- ☐ Avoid practices that may cause soil compaction around trees.
- ☐ Avoid moving soil infested with the crown gall pathogen or the pecan root-knot nematode between orchards; clean equipment between fields.

Thinning, Pruning, and Propagation

- ☐ Follow recommendations for orchard thinning to allow for good airflow.
- ☐ Remove broken branches using proper pruning techniques.
- ☐ Collect graft wood from trees that do not exhibit symptoms of PBLS or bunch disease; if the source of graft wood is unknown or if graft wood must be collected from trees known or suspected to have PBLS, treat scions with the recommended hot-water treatment prior to grafting.

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