

# PREPARING YOUR SCOUTING PLAN FOR 2022

HEIDI LINDBERG AND JILL O'DONNELL

**Cover photo:** Shaking branches over a white piece of paper will help identify smaller insect pests such as aphids and mites. Photo by Jill O'Donnell, Formerly MSU Extension.

There may still be snow on the ground, but spring is just around the corner, and it is never too early to begin planning your integrated pest management (IPM) plan for the year. You've probably heard the term "IPM," but what is it? IPM is managing pests by scouting, prevention, and chemical and biological control in order to keep pests below damaging levels. By implementing IPM, growers no longer spray for a certain pest based on a calendar date but seek to spray for pest insects when control will be most effective. This reduces environmental impacts and often saves growers money and effort by avoiding unneeded applications.

In addition, IPM programs can reduce the use of broad-spectrum pesticides that can also kill beneficial insects. When beneficial insects, such as lady beetles (Photo 1 on next page), are also killed after a pesticide application, growers can get into a continuous cycle of spraying for insects that would have been otherwise controlled with natural enemies in the environment.

## What tools do I need?

Regularly monitoring (scouting) is the cornerstone of an effective IPM program. Checking your fields throughout the growing season will help you detect any problems early and avoid damage. The equipment you will need to scout Christmas trees are a hand lens (10x to 15x), scouting board, a clipboard and paper, pest ID materials,

colored flagging tape, knife, bags or bottles, and a pair of hand pruners.

Another handy tool used to scout the bottom of branches is a mirror attached to a pole to reduce the amount of bending when scouting (Photo 2 on next page). The "IPM Basics for Christmas Trees" guide from PennState Extension provides an excellent overview of these tools.

## Why am I scouting?

Growers should scout their Christmas trees in order to look for potential insect, disease, weed and nutritional problems along with beneficial insects. Scouting enables you to catch problems more quickly so that you can take action to correct or remediate the problem more quickly. You will also be able to see if previous treatments in an affected area were effective.







**Photo 1.** Lady beetle is one example of a natural enemy in Christmas tree plantations that serve to regulate the populations of aphids. Photo: Steven Katovich, Bugwood.org.



**Photo 2.** Using a mirror on a pole can be helpful when scouting the undersides of branches in conifers. Photo by Bert Cregg, MSU Extension.

## What am I scouting for?

First, it is essential to know the tree species that are present in your field as some insects or diseases affect some species and not others. For example, Cooley spruce gall adelgid is an insect pest of Douglas-fir and spruces but is not a pest on true firs (Fraser, balsam and concolor) or pines. In contrast, spruce spider mite is a pest of spruces and true firs but not Douglas-fir or pines. With respect to diseases, Douglas-fir are susceptible to Rhabdocline or Swiss needlecast while spruces are susceptible to Rhizosphaera and Stigmina needlecasts. Learn more about which pests affect which plant species by accessing the “Michigan Christmas Tree Pest Management Guide” which can be found on MSU Extension’s Christmas tree website ([www.canr.msu.edu/christmas\\_trees](http://www.canr.msu.edu/christmas_trees)).

While an IPM program doesn’t promote calendar-based spray programs, you can use a calendar as a general rule of thumb to know when to be on the lookout for certain pests (Photo 3).

For Michigan Christmas tree growers, there is a seasonal pest calendar in the “Michigan Christmas Tree Pest Management Guide” based on the time of year and tree species. For example, growers should be on the lookout for the following pests and diseases in their fields in early April:

- **Douglas-fir:** Cooley spruce gall adelgid (Photo 4 & 5)
- **Pine:** Pales weevil, white pine weevil and Zimmerman pine moth
- **Spruce:** Admes mite, Cooley spruce gall adelgid, Eastern spruce gall adelgid, spruce spider mite, spruce gall midge, Diplodia tip blight and Phomopsis tip blight
- **True fir (Fraser, balsam and concolor):** Balsam twig aphid, eriophyid mites, spruce spider mite and fir needle rust



## How much pest damage is acceptable?

Every farm manager has a tolerance or a threshold for damage for pests on their Christmas trees, but in general, the tolerance for damage decreases as the Christmas trees get closer to their harvest date. For example, you might be able to accept damage from spruce spider mites when trees are not close to harvest, but it will be imperative to find and treat trees as they are nearing harvest. The acceptable level of damage or aesthetic appearance of your Christmas trees will also depend on your market and price point.

## How do I scout Christmas trees?

### Based on age and size

Scouts should pay attention to different potential problems of trees at different ages. For example, during the first growing season, transplants should be evaluated for color, root rots and weeds. If growers experience widespread seedling mortality, it is essential to determine the cause and try to address the issue early. A Christmas tree nearing harvest should be frequently scouted (i.e., weekly) and be assessed for issues that will affect needles and retention such as needlecasts, spider mites and aphids. Growers should examine 40 to 50 trees per acre.

### Scouting path

When scouting, you can scout the block in a few different ways:

- **Block scouting:** Scout all trees within the same row, and once you reach the end you can move six to eight rows away (depending on the size of the trees) and continue.
- **Random walk scouting:** Pick trees randomly throughout the field in a zig zag pattern and always scout trees that look to be a problem from a distance.
- **Hot spot scouting:** Perform scouting in specific areas where

		SEASONAL PEST CALENDAR																	
		Michigan Christmas Tree Pest Calendar																	
Insect pest	Disease	April			May			June			July			August			September		
		early	mid	late	early	mid	late	early	mid	late	early	mid	late	early	mid	late	early	mid	late
Cooley spruce gall adelgid																			
Douglas-fir needle midge																			
Pales weevil																			
	Rhabdocline needlecast																		
	Swiss needlecast																		

**Photo 3.** Example of pest scouting and control calendar for Douglas-fir from MSU Christmas Tree Pest Manual.



**Photos 4 & 5.** Cooley spruce gall adelgid is a pest of spruce and Douglas-fir. The larvae develop in galls formed on twigs (Photo 4 above) and cause twig dieback (Photo 5 below). Photos: Whitney Cranshaw, Bugwood.org.





problems have been observed and keep readdressing that area repeatedly throughout the season. Pay specific attention to low lying or shaded areas of the field that are prone to stay damp longer in the spring, making the trees in those areas more prone to root rots and diseases.

## Treatment thresholds

The treatment threshold depends on the pest, tree species, age of the tree and if the pest in question is a quarantine pest. For example, pests that require preventative treatment include white pine weevil, gypsy moth and Pales weevil. You should be scouting and only spray as needed for mites, aphids and bagworms.

Also, in some cases, pest treatments may be required by regulations. In Michigan, the Michigan Department of Agriculture and Rural Development has a Christmas Tree Inspection and Quarantine Program. Quarantines regulate the movement of host species into and out of areas to prevent the spread of pests, such as gypsy moth, that could be damaging to the local ecosystem. Michigan is under a U.S. Department of Agriculture (USDA) federal quarantine for gypsy moth quarantine. Thus, there is zero tolerance for the presence of gypsy moth and spruce, fir and Douglas-fir trees that may be shipped out of state must be treated during the appropriate treatment window.

## Symptoms

Scouts should be looking for a variety of tree issues when scouting fields: crooked tops, galls, stunted growth, missing branches, dead trees, browning/bronzing, curled or lost needles. Scouts should use a scouting board to shake shoots and observe any pests or predators that fall onto the board; this method is especially useful for small pests such as mites and aphids.

Growers new to scouting Christmas trees should check out the "Scouting Fraser Fir Christmas Tree Guide" (Publication AG-573) from North Carolina (NC) State University that provide excellent recommendations on scouting method, frequency and treatment thresholds for individual pests.

## Soil sampling

Fertility is important for trees of any size. Fertility issues will become more apparent as trees become larger and have more needles. Fertility should be addressed before planting a new field with Christmas trees and readdressed yearly in order to plan fertilizer applications. Standard labs check pH, cation-exchange capacity (CEC), micronutrients and provide generic recommendations. The "Soil Testing and Interpretation of Results for Christmas Tree Plantations" website from NC State Extension is an excellent resource to understand soil sampling in Christmas trees.

## Trapping

Traps can be used to monitor insect emergence or determine populations. Two common trapping systems used in Christmas trees include tether traps for white pine weevil and yellow sticky cards for Douglas-fir and spruce gall midge.

## Summary

Scouting is essential to an effective IPM program for Christmas trees. Scouting allows for early detection and treatment of insect pests but can also allow growers to forego applications when pests are absent or below threshold levels. For growers in Michigan and nearby states, the MSU Enviroweather site (<https://enviroweather.msu.edu/>) and associated MSUE web-based resources can help to guide growers to know which pests are likely to be active throughout the growing season. ▲

# MANKAR

ULV - SPRAYERS  
ROUNDUP® APPLICATION  
*UNDILUTED*




Mankar Two Flex

Mankar  
HQ-451L

---



**T-BRO-FAB**  
Custom 3 pt.  
Weedsprayers

---



**MASCHIO**

Model B (Many models available)

---

## Thomas Bros.

**Equipment Sales, Inc.**  
41764 Red Arrow Hwy.  
Paw Paw, MI 49079  
Ph. 269-657-3735 • Fax 1-269-657-2110  
"Since 1936"  
Toll Free 1-866-214-6135  
[www.thomasbrosequipmentsales.com](http://www.thomasbrosequipmentsales.com)  
"Specialists" in "Out-of-the-Ordinary" Farming Needs