DEPARTMENT OF AGRICULTURE

2024 Nursery Certification and Plant Pest Regulatory Annual Report

Plant Protection Division

Prepared December 2024

Contents

Background

The Minnesota Department of Agriculture (MDA) is responsible for the administration of the Nursery Law, (Minnesota Statute Chapter 18H) and Plant Protection and Export Certification (Minnesota Statute Chapter 18G). These laws prevent the introduction and spread of harmful plant pests into the state. To accomplish this, nursery stock produced for sale must be inspected annually and certified free of harmful plant pests. Stock originating outside Minnesota must also be officially certified to be free from harmful pests and comply with all applicable quarantines at its origin.

The MDA Nursery Inspection and Certification Program provides a vital service to the nursery industry and protects consumers from purchasing plants that are not viable or contain pests. Annual inspections reduce losses from harmful plant pests by detecting and treating problems before they can cause more serious damage. Certified nursery stock can move freely within the U.S., and special certificates are issued for plants being exported. A standard of quality is maintained to assure the industry, as well as consumers, that the product they are purchasing is viable and healthy.

Anyone selling nursery stock in Minnesota for greater than 10 days with gross sales exceeding $2,000 must have a valid Minnesota Nursery Stock Dealer or Nursery Stock Grower Certificate. They must also sell only certified nursery stock and provide documentation verifying its certification.

Nursery Stock Certificates

The MDA Nursery Inspection and Certification Program issued two types of nursery stock certificates in 2024: grower and dealer. Nursery stock growers included businesses that grow more than half of the nursery stock they sell. Grower fees were based on the number of acres used to grow nursery stock. Nursery stock dealers included businesses that purchased more than half of the nursery stock they sold. Nursery stock dealers can also grow nursery stock. The dealer fees were based on gross sales of nursery stock from the previous year.

Starting in 2025 under legislative approval, a fee change will apply to all nursery certificate holders. Nursery stock includes trees, shrubs, vines, perennials, biennials, grafts, cuttings, and buds.

Nursery stock grower certificates increased from 2023 to 2024, while nursery stock dealer certificates decreased by 12 in 2024. This change may be the result of incorrect certification type in past years rather than a change in operational practices.

Table 1. Nursery Stock Certificates Issued

Certificate Type	2018	2019	2020	2021	2022	2023	2024
Nursery Stock Grower	248	286	232	236	224	224	226
Nursery Stock Dealer	1,951	2,158	1,819	1,837	1,852	1,845	1,833
Total Certificates	**2,199**	**2,444**	**2,051**	**2,073**	**2,076**	**2,069**	**2,059**

Table 2. Nursery Stock Growing Acres

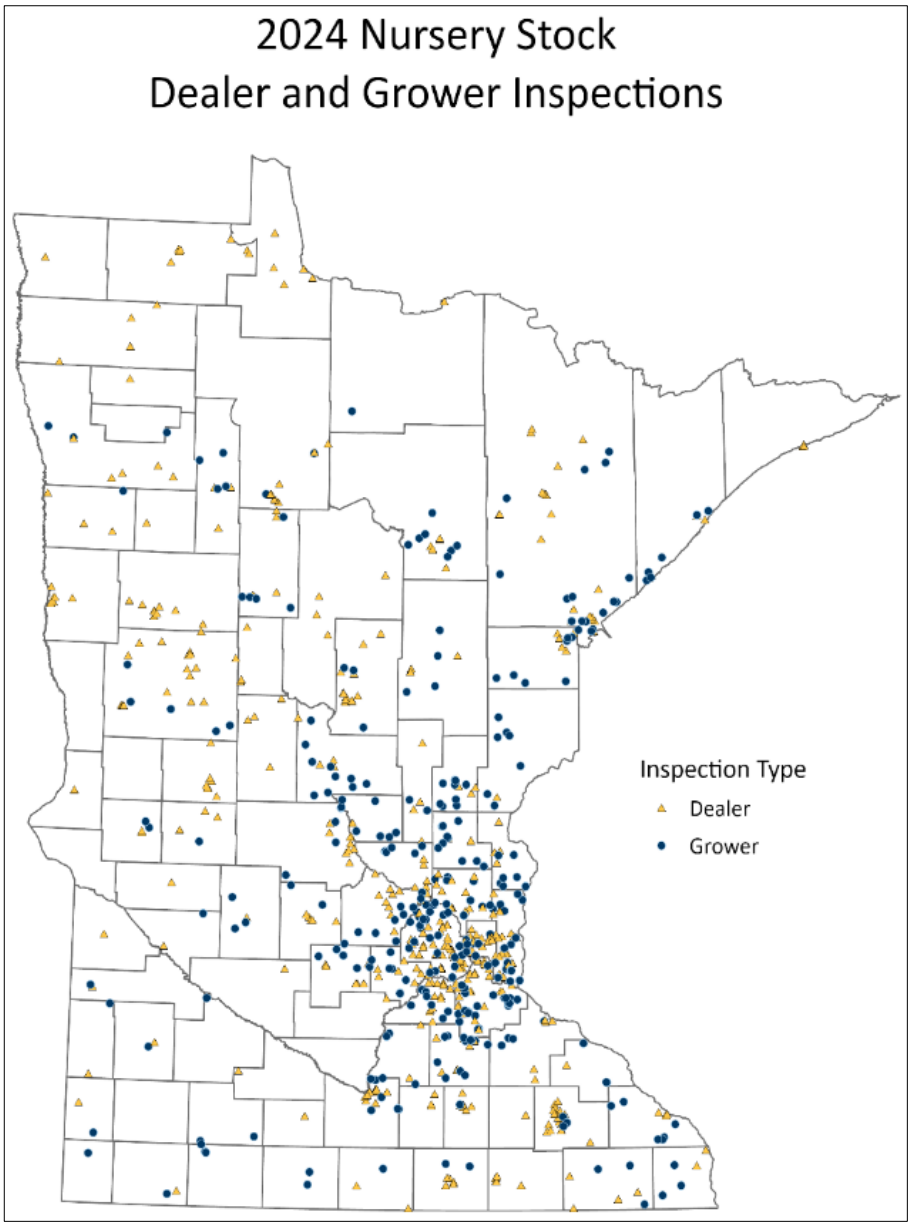
Certificate Type	2018	2019	2020	2021	2022	2023	2024
Nursery Stock Grower	-	-	3,954	3,804	4,116	4,022	4,031
Nursery Stock Dealer	-	-	2,204	995	1,319	1,050	973
Total Acres	**5,312**	**5,378**	**6,158**	**4,799**	**5,435**	**5,072**	**5,004**

Nursery Stock Inspections

The Nursery Inspection and Certification Program employed five regional staff members based in Brainerd, Perham, Rochester, and the Twin Cities. Staff completed 600 nursery inspections in 2024 including 322 mandatory inspections of growers and dealers with growing stock. A mandatory inspection is done on all nursery stock grown in Minnesota that is for sale.

Inspections at dealers without growing stock are prioritized to focus on out-of-state sources of stock and sales volume. Dealers who purchase stock from outside Minnesota and have gross sales of nursery stock above $20,000 are classified as high priority. Inspectors completed 239 high-priority dealer inspections. Low-priority dealers purchase stock from within Minnesota and have annual gross sales below $20,000.

Figure 1. Locations of 2024 nursery stock dealer and grower inspections.



Plant Pest Incidents

The purpose of an inspection is to identify plants that are not certified for sale due to a plant insect, disease, noxious weed, or other plant health condition. Each inspection where a plant pest is found is considered a single incident of that specific pest or pathogen. The term “incidents” is used in reporting 2024 findings to show the general spread of the pest or pathogen throughout the state, while the number of plants indicates overall volume and is noted separately in the data below. Plants may be restricted until the appropriate regulatory response is completed, allowing plants to be offered for sale. In 2024, inspectors reported 1,181 incidents involving 13,473 plants requiring regulatory action. That is an increase from 2023, when 1,067 incidents were reported involving 19,819 plants.

Insect Pests

The most common insects encountered during the 2024 season were boring insects, adelgid, bark beetles, and scale (Table 3). Borer and scale insects were the most significant, as they are detrimental and impactful to the nursery industry. A small population of wood-boring insects can feed, tunnel, and kill a large number of trees. Early detection of borers can be difficult to find, and infested trees are removed and destroyed. A breakout of boring insects is reported below; the term “general” was used when a specific species was not identified. Scale are sap sucking insects, and in large numbers cause stunting, branch dieback, and, in rare occasions, plant death. Scale may also spread viruses and are often difficult to manage and eradicate. Plants are held off sale until treated. Eastern spruce gall adelgid feeds on a variety of spruce hosts, including Norway, white, red, and Colorado blue. Feeding stimulates the formation of galls at the base of the current year’s growth. These galls seldom kill the trees but they can reduce the aesthetics of an infested tree.

Table 3. Top Insect Pests

Most Reported Insects	Number of Times Reported	Number of Plants Reported
General Borer	20	37
Eastern Spruce Gall Adelgid	18	131
General Bark Beetle	11	81
Bronze Birch Borer	9	22
General Scale	5	57
Pine Needle Scale	5	28
White Pine Weevil	5	5
General Spider Mite	4	97
Zimmerman Pine Moth	3	13
Pine Bark Adelgid	3	8

Table 4. Top Boring Insect Pests

Reported Borers	Number of Times Reported	Number of Plants Reported
General Borer	20	37
Bronze Birch Borer	9	22
Pitch Mass Borer	2	3
Honeylocust Borer	2	6

Disease Pests

The most significant diseases for 2024 inspections included canker and general virus. Cankers can be caused by living organisms, weather, or mechanical wounds. Trees with cankers must be removed and destroyed. In many cases, the specific identity of the canker organism is not determined and is reported as general canker. Nectria, Cytospora, and Eutypella canker are listed in Table 6. Viral infections can manifest in a variety of symptoms, including leaf discoloration, wilting, necrosis, deformities, stunted growth, reduced vigor, and poor fruit quality. Because viruses cannot be cured, plants suspected of having a virus are submitted for laboratory testing. A negative laboratory test result is required prior to sale. In total, 602 plants were suspected of having a virus in 2024, along with 2,381 spirea removed for having spirea yellow leaf spot virus. Due to the wet spring and sudden heat in the summer, many other plant fungal issues were observed. Powdery mildew, all fungal leaf spots, peony leaf blotch, septoria leaf spot, and rose black spot were commonly found but due to disease severity and ubiquitous nature were not included below.

Table 5. Top Significant Diseases

Most Reported Diseases	Number of Times Reported	Number of Plants Reported
Various Canker	134	314
Suspected Virus	107	602
Pseudomonas	91	961
Spirea Yellow Leaf Spot Virus	17	2381
Aster Yellows	16	220
Various Rust Fungi	15	286
Phytophthora Root Rot	13	134
Daylily Rust	12	362
Apple Scab	11	35
Spruce Needlecast Complex	10	62

Table 6. Top Cankers

Reported Cankers	Number of Times Reported	Number of Plants Reported
Various Canker	134	314
Nectria Canker	3	4
Cytospora Canker	2	4
Eutypella Canker	1	1

Abiotic Causes

Along with insects and disease organisms, inspectors encountered a number of conditions where stock was not handled or cared for properly. Stock is considered non-viable if it is determined that stock will not grow with normal vigor, even with reasonable care. These conditions, referred to as abiotic causes, are listed in Table 7 below. Nonviable plants were removed from sale.

Table 7. Top Abiotic Incidents

Most Reported Abiotic	Number of Times Reported	Number of Plants Reported
Nonviable	187	630
Moisture Stress	57	199
General Chlorosis / Nutrient Deficiency	19	111
General Animal Damage	7	17
Herbicide Injury	6	317
Frost Injury	2	11

Elm Zigzag Sawfly

The elm zigzag sawfly (EZS) (*Aproceros leucopoda*) was found for the first time in Minnesota in July of 2024. A student in North Carolina working on EZS saw a citizen report on iNaturalist and notified her professor, who then notified the Minnesota Department of Natural Resources (MN DNR). A MN DNR forest health specialist went out to the site and entered it into EDDMaps, which is how the MDA was notified. The larvae were sent to a taxonomic specialist at the Smithsonian Institution's National Museum of Natural History for confirmation. The MDA verifies first finds in the state confirmed by a trained taxonomist.

EZS belong to the Agridae family in the order Hymenoptera. They feed exclusively on elm trees (*Ulmus spp*.) and can complete several generations per year. They are easily identified by the zigzag pattern they leave while feeding on the leaves. The impact of EZS and effective management strategies are currently unknown. This insect has been found in several states on the east coast and as close as Ohio.

Figure 2. Zigzag feeding pattern on an elm leaf caused by elm zigzag sawfly.

Pseudomonas

Lilac bacterial blight (*Pseudomonas syringae* pv. *Syringae*) is a disease seen in Minnesota nearly every season. It is endemic in the environment and can overwinter in tissue, which is why it is not typically a disease of note. However, the spring of 2024 was one of the wettest on record in Minnesota, creating perfect conditions for fungal and bacterial diseases. With plants recovering from a 3 year drought, many became susceptible to the disease as it spread through the plant tissues. The wet conditions incredibly favored the disease causing many plants to become blighted enough to have stunted blooms and lose their leaves in the remaining season. Some entities lost large portions of their crops to this disease as the bacteria can spread easily on tools or in water droplets.

Signs and symptoms of *Pseudomonas* include water-soaked lesions, leaf distortion, and tip dieback when plants are stressed. A total of 961 plants were written up for symptoms too severe to be sold without treatment or control. The nursery unit's regulatory response to *Pseudomonas* is: Restricted - prune out infected plant parts and treat and control before sale. Other plant hosts for *Pseudomonas* include callery and common pears, rhododendrons, forsythias, and magnolias.

Lab Sampling

The Nursery Inspection and Certification program uses three labs to test for different types of plant pest issues. Two are external program labs, and the other is the MDA Plant and Seed Analysis Unit laboratory (MDA-PSA lab). The MDA entomologist is also utilized in identifying insects of concern. Staff took a total of 87 samples during the 2024 field season.

The MDA-PSA lab tests for diseases of concern that are not currently known to be established in Minnesota. Eleven samples were submitted to the MDA-PSA lab, with three testing positive for daylily rust.

Inspectors also submitted samples to the Plant Disease Clinic (PDC) at the University of Minnesota. Forty-six samples were submitted, with 31 testing positive for various viruses, diseases, and other plant pests. The PDC has added a new virologist to their lab, allowing for more in-depth testing on plants showing viral symptoms that may not be detected by the PDC's standard virus testing. A 'Mr. Goodbud' sedum tested positive for an uncharacterized Cytorhabdovirus, which had not been previously documented. This virus group is known to spread via insects such as aphids, leafhoppers, and whiteflies. Five varieties of spirea tested positive for a suspected spirea Emaravirus, also not previously documented. The varieties included 'Neon Flash', 'Little Princess', 'Japanese White', 'Little Spark', and 'Magic Carpet'. Three thousand spirea were removed from sale at two separate locations.

To help protect pollinators, Minnesota Statute 18H.14 Labeling and Advertising of Nursery Stock prohibits the advertisement or labeling of plants as beneficial to pollinators if they have been treated with a systemic insecticide and have a concentration of insecticide in its plant parts above the Environmental Protection Agency's (EPA) level established for mortality of adult honeybees. When advertising is found, the inspector may take a sample and send it to a third-party lab to test for eight different systemic insecticides, each with its own threshold of toxicity to honeybees. Inspectors took 25 samples for analysis. Nine of the samples were found to contain a level of systemic insecticide above the EPA's levels deemed lethal to honeybees.

Violations

The Nursery Inspection and Certification program issued 174 reports of violation to nursery stock dealers and grower certificate holders in 2024. The enforcement of Minnesota's Noxious Weed Law resulted in the highest incidents of violations. Amur, Norway, and Tatarian maples are specially regulated noxious weeds in Minnesota and must be labeled with instructions to plant only in areas where seedlings will be controlled and at least 100 yards from natural areas. The lack of proper labeling accounted for 77 incidents.

Minnesota regulations require all nursery stock to be labeled with the correct hardiness zone as defined by the United States Department of Agriculture (USDA). Fifty-five violations were due to mislabeling of cold hardiness, a decrease from 2023, which had 142 reports of violation.

Twenty-seven violations were for dormant-packaged plants that had not been stored properly and were nonviable. Packaged plants are sold in early spring and must be kept dormant to maintain viability. Once they break dormancy, they must be planted immediately, or they will likely not survive. The retail value of plants removed from sale in 2024 was $12,330, down from 2023 which had more than $31,000 in nonviable packaged plants removed from sale.

Minnesota regulations also require all nonhardy nursery stock to be labeled for proper hardiness or be labeled "nonhardy". One violation was issued, and five plants were corrected based on the Cold Hardiness List on the MDA website.

The sale of restricted noxious weeds, including winged burning bush (*Euonymus alatus*), Siberian pea shrub (*Caragana arborescens*), and fernleaf buckthorn (*Rhamnus frangula*) was documented at six locations, resulting in a stop sale of 36 plants. It is in violation of the Minnesota Noxious Weed Law to offer for sale or propagate restricted plants. The current Minnesota Noxious Weed List can be viewed on the MDA website.

Table 8. Reports of Violation

Violation Type	Sites	Incidents	Number of Plants Affected
Specially Regulated Noxious Weed: Amur, Norway, and Tatarian Maple	42	77	321
Mislabeled Cold-Hardiness Plants	33	55	442
Dormant Packaged Plants	13	27	1,116
Pollinator Friendly Labeled Plants with Lethal Levels of Systemic Insecticides	6	9	162
Missing Nonhardy Labeling	1	1	5
Totals	95	169	2,046

Table 9. Reports of Restricted Noxious Weed Violation

Restricted Noxious Weed	Sites	Incidents	Number of Plants Affected
Winged Burning Bush (*Euonymus alatus*)	4	4	17
Fernleaf Buckthorn (*Rhamnus frangula*)	1	1	18
Siberian Peashrub (*Caragana spp.*)	1	1	1
Totals	6	6	36

Regulated Noxious Weeds

The MDA also inspects for invasive plants offered for sale. Plants found on the Minnesota Noxious Weed List must be removed from sale and may result in fines or penalties. There are four separate categories of noxious weeds in Minnesota: prohibited-eradicate, prohibited-control, restricted, and specially regulated. Prohibited-eradicate, prohibited-control, and restricted noxious weeds cannot be sold or propagated within the state of Minnesota. Specially regulated plants are noxious weeds that have specific management criteria and may be sold, but have restrictions within the nursery trade.

Prohibited-Eradicate Noxious Weeds

No prohibited-eradicate noxious weeds were found during routine nursery inspections in 2024.

Prohibited-Control Noxious Weeds

No prohibited-control noxious weeds were found during routine nursery inspections in 2024.

Restricted Noxious Weeds

During routine inspections in 2024, inspectors found the following restricted noxious weeds being offered for sale at dealer and grower locations:

- Winged burning bush (*Euonymus alatus*) was added to the restricted list in 2023. In 2024, four sites were found offering winged burning bush for sale. A total of 17 plants received stop sale orders, requiring the plants to be removed from sale.
- Fernleaf buckthorn (*Rhamnus frangula*) was placed on the Restricted noxious weeds list in 1999. In 2024, one site was found offering 18 plants for sale, which were issued an order to stop sale.
- Siberian pea shrub (*Caragana arborescens*) was added to the restricted list in 2020. In 2024, one site was found offering for sale one plant for sale and the plant was ordered off sale.

Specially Regulated Noxious Weeds

Amur maple (*Acer ginnala*), Norway maple (*Acer platanoides*), and Tatarian maple (*Acer tataricum*) are specially regulated plants. They have demonstrated economic value, but also have the potential to cause harm in uncontrolled environments. Specific rules or management plans, developed by the MDA under Minnesota Statute 18.771(e), require these plants be accompanied by a label detailing how to distance planting from native areas and be controlled by mowing or other means to avoid further disbursement. Each plant must have the specially regulated language affixed as an instruction tag for the consumer. A Report of Violation is issued if this information is absent, plants are removed from sale until the labeling is corrected, and fines or penalties may apply. In 2024, 42 sites with 321 plants were found without proper labeling.

Wildflower Permits

To protect the state flower and other endangered wildflowers, Minnesota Statute 18H.18 Conservation of Certain Wildflowers prohibits the sale of certain wildflowers without written permission from the property owner and a permit from the MDA. Protected plants must be cultivated for a minimum period of one growing season and cannot be sold directly after being collected. In 2024, three permits were issued.

Figure 3. Lady slipper wildflowers.

Nursery Exports

Nursery stock and plants being exported must meet certain phytosanitary conditions for entry into foreign countries, including an inspection and the witnessing of official treatments. The MDA issued 167 Federal Phytosanitary Certificates for nursery stock.

2024 Phytosanitary Certificates for Exports

- 788,697 plants
- 225,700 bulbs/roots/tubers (mainly re-exports from Amsterdam going to Canada)
- 11 unrooted plant cuttings

Japanese Beetle Certification

Japanese beetle (*Popillia japonica*) is a regulated plant pest. Beetles can be very destructive as beetle grubs in the soil feed on roots and are attracted to managed turf, such as athletic fields and golf courses. Adult beetles damage a wide variety of trees, shrubs, and fruit plants. Once established, Japanese beetles can be very difficult to control.

To regulate the movement of Japanese beetle infested plant material, the U.S. Domestic Japanese Beetle Harmonization Plan (JBHP) was established designating infested and non-infested areas. Generally, states west of Minnesota maintain non-infested status. The JBHP details certification requirements to allow shipping regulated articles from infested states, including Minnesota, to uninfested areas. Some west coast and Rocky Mountain states have stricter requirements.

The MDA conducts a survey program to certify Minnesota-grown nursery stock and sod for shipping to uninfested states. Certification methods include a trapping program targeting adult beetles using a floral lure and a sex pheromone. In 2024, traps were placed at five sites across the state, with a total of 37 traps in place by June 1. The final trap check was done after September 30, with no new infested sites found in 2024. These sites

are isolated from areas in Minnesota that are generally infested with Japanese beetles. Negative results of trapping allow growers to ship to uninfested Category 2 states.

For sites in the generally infested areas in Minnesota, or those where trapping results are positive, a soil survey targeting Japanese beetle grubs in the soil can be done for certification. This year, seven nurseries, some with multiple sites, were soil sampled. A total of 782 acres were sampled and all seven soil sampling sites were free from Japanese beetle grubs. To be eligible for this certification method, plants must be maintained in a weed-free zone.

In addition to trapping and soil survey, the JBHP allows for certification of nursery stock based upon approved insecticide treatments, including the incorporation of granular insecticide into potting media or pre-harvest treatment for field-grown stock. Regular treatments to manage adult beetles during flight periods and monitoring for beetles when loading stock are also required to minimize beetles from hitchhiking on plant material.

Certification can also be based on certain production and handling protocols. Production in an approved screen house or outside the adult beetle flight period allows certification to Category 1 states. Container-grown nursery stock produced on an impervious surface meets the conditions of the JBHP container accreditation protocol for Category 2 states. Bare root stock is exempt from JBHP requirements.

Thirty-one Minnesota nurseries and one sod farm participated in the 2024 Japanese beetle certification program. Compliance agreements were sent once trapping and soil sampling were completed in October. Once signed and returned, the agreements were signed by Minnesota State Plant Health Director.

Upon completion of the compliance agreement, Certificates of Quarantine Compliance (CQC) are issued, detailing the certification methods used. These certificates must accompany shipments to Japanese beetle-regulated states.

Figure 4. Japanese beetles in a trap.

Spongy Moth

Spongy moth (*Lymantria dispar*) is a federally regulated plant pest in the eastern United States and Canadian provinces. Populations exist in the far northeastern region of Minnesota. Cook and Lake counties are quarantined for spongy moth, where it is considered established but populations have not yet reached outbreak levels. Spongy moth is not established in the rest of the state. Annually the MDA's Spongy Moth Survey program places approximately 20,000 early detection traps to monitor for isolated populations.

The MDA regularly reviews and audits spongy moth quarantine compliance throughout Minnesota by assuring nursery stock received from spongy moth quarantine areas arrive with proper certification to assure it is free from spongy moth prior to entering non-quarantined areas of Minnesota. Nursery dealers and growers that report stock sources from areas in a spongy moth quarantine are considered high-risk. Nurseries and Christmas tree lots are inspected for proper spongy moth certification and documentation through the MDA's Nursery Inspection and Certification program ro ensures compliance with the federal spongy moth quarantine.

In 2024, no violations were reported for non-certified stock arriving without proper certification. However, in rare circumstances, certified product can arrive infested, so careful inspections should occur when nursery operations receive regulated stock before unloading. There are currently no nursery stock growers located within the Minnesota spongy moth quarantine area.

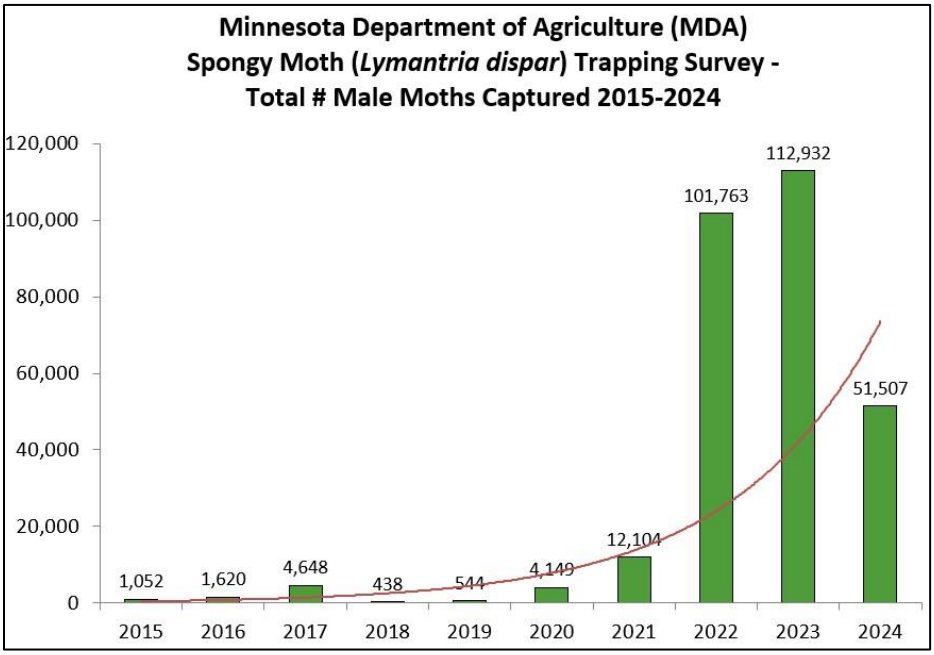
In 2024, the MDA placed 424 survey traps at 127 nurseries across the state. Thirty-seven percent of these locations had positive male moth detections. While inspections were conducted as needed, no females or additional life stages were identified, indicating no established populations. Many of these nursery sites were in areas surrounded by low-level male moth findings.

The MDA establishes compliance agreements with entities wishing to move regulated articles out of spongy moth quarantine areas. Most regulatory activities occur in Cook and Lake counties, which were quarantined in 2014. Cook and Lake counties are also under a parallel federal quarantine for spongy moth. Since there are currently no nursery growers, only nursery dealers in these counties, much of the MDA's focus is on the timber and holiday greenery industries.

The MDA's trapping survey yielded 51,507 male spongy moths in 2024, about half of the numbers in 2023 or 2022. Without additional context, the reduction in this year's statewide male moth catch as compared to the last two seasons may give the impression that Minnesota had a big reprieve in population growth, but that is not the case as the 2024 survey project area no longer extended into Cook and Lake counties as it had in the past, it only covered the west side of Lake County. Cook and Lake counties accounted for 47% of the 2023 moth catches. If the MDA had surveyed these two quarantined counties in 2024, it's likely the total 2024 statewide moth catch may have exceeded 2023 numbers.

As spongy moth populations continue moving forward, more areas on the eastern side of Minnesota will "fall out" of the trapping survey project area. However, that is anticipated to continue to be a gradual progression, and those areas will typically have been quarantined well in advance of that occurring. It is important for the nursery trade to stay vigilant to ensure this pest does not become established in Minnesota.

Figure 5. MDA annual trapping survey male spongy moth catch 2015-2024.



Nursery and Christmas Tree Farm Survey

The introduction of pests through the nursery industry and Christmas tree farms is a threat to urban forests, natural ecosystems, and agricultural crops in the United States. In recent years, multiple interceptions of invasive species to Minnesota and/or neighboring states have occurred through these industries. These introductions have led to trace forward events, delimit surveys, and regulatory actions such as stop sales and collect and destroy events, demonstrating the need for a comprehensive survey to monitor for invasive insects and pathogens in the nursery industry and Christmas tree farms in Minnesota.

2024 was the third year of survey funded by the Plant Protection Act 7721. There were 17 insect pests and 13 pathogens of concern included in the surveys, selected for their potential to damage crops and native plant communities in Minnesota. Survey staff conducted surveys at 24 nurseries and 20 Christmas tree farms in 18 counties. Survey locations were visited multiple times throughout the growing season to monitor for pest targets.

Red star rust, caused by the fungus *Gymnosporangium yamadae*, is native to Japan, China, and Korea. The disease was first identified in the U.S. in 2009 in several northeastern states and was reported in Wisconsin in 2021 and Minnesota in 2022. In 2024, the MDA identified red star rust in Carver, Scott, McLeod, and Washington counties. Infected apple trees were present in commercial apple orchards and nurseries. This was the first detection in McLeod County.

In 2024, the MDA collected soil and water samples from all nursery survey sites to look for invasive *Phytophthora* species. Samples were collected in the spring and fall from nurseries in 12 counties. Spring samples came from 24 locations, while fall samples came from 20 locations. Soil was also collected from 20 Christmas tree farms in 15 counties in both the spring and the fall. The USDA priority invasive *Phytophthoras* (*P. ramorum* and *P. kernoviae*) were not found at any site in Minnesota, though results from soil testing are still pending.

A more detailed report about this survey can be found on the MDA's Pest Survey webpage.

Holiday Greenery

Holiday greenery and Christmas tree inspections are conducted annually by the MDA throughout the state of Minnesota under the authority of Minnesota statute 18G.03. The purpose of these inspections is to prevent the introduction and spread of plant pests within the state and to aid in pest suppression and control. Holiday greenery inspections take place from the week before Thanksgiving to the week before Christmas. However, at the end of October to prepare for the season, inspectors will begin to call and survey large wholesale and retail locations to determine when out of state stock will be delivered.

Holiday greenery inspections include cut Christmas trees, spruce tips and other cuttings, porch pots, wreaths, tabletop décor, swags, garland, birch poles, and other woody stems and branches. Audits of shipping documents are conducted at the beginning of each inspection to determine federal quarantine compliance. If stock arrives from a federally quarantined area, it is required under federal/state requirements that the receiving facility have certification documents at the site. Emphasis is placed on federally regulated or federally quarantined plant

pests such as boxwood blight and spongy moth, as well as unestablished non-native plant pests like elongate hemlock scale and spotted lantern fly.

Elongate Hemlock Scale (EHS)

Elongate hemlock scale (*Fiorina externa*) is believed to have been introduced from Japan and is currently established in the eastern United States. It is reported to develop and reproduce on 43 species of conifers, primarily hemlock, fir, and spruce. Currently, Minnesota does not have any documented established populations of elongate hemlock scale, but the movement of cut holiday greenery and Christmas trees from infested regions of the U.S. poses a risk of transporting this pest to Minnesota.

Holiday greenery inspections over the past several years have identified multiple locations that receive shipments of Christmas trees and wreaths infested with elongate hemlock scale. Infested trees may be resold if they are properly reconditioned by removing infested branches or returned to the sender or destroyed.

After finding over 1,000 cut Christmas trees infested with elongate hemlock scale in 2019, the MDA began an intensive outreach campaign to retailers reminding them that elongate hemlock scale and other invasive pests can be transported on holiday greens and Christmas trees. Retailers are targeted with information as they prepare to order for the holiday seasons. The MDA also reached out to partner agencies and stakeholders to communicate a clear, consistent message regarding early detection and proper disposal options.

The MDA created a holiday greenery best management practices webpage as a one stop shop for early detection and disposal guidance. Typically, holiday greenery buyers from chain stores are contacted by the MDA before stock begins to move to provide plant pest quarantine documents for stock they plan to ship. Inspectors also hand out an outreach packet to the survey sites that they visit which include information on elongate hemlock scale, spongy moth, and other pests of concern along with the appropriate way for consumers to dispose of their holiday greeneries.

Table 10. 2024 Holiday Greenery Inspections

Holiday Greenery Inspection Sites	2022	2023	2024
Box stores	78	104	62
Certified nursery sites	44	62	17
Other sites – temporary tree lots, grocery, hardware, craft, etc.	37	76	57
Totals	159	242	136

In 2024, six MDA staff conducted holiday greenery inspections between November and December, which included 136 surveys/inspections of approximately 64,700 Christmas trees and countless wreaths, swags, porch pots, and other cut greens. Within the 136 survey sites, 62 were big box stores like Home Depot, Walmart, and Menards, and 17 were certified nursery sites representing the highest number of inspection visits. Other sites visited were grocery stores, temporary Christmas tree sales lots, hardware, and craft stores. Elongate hemlock scale was found at five locations and 637 pieces of holiday greenery were infested with elongate hemlock scale and removed from sale. Infested products included 628 cut Christmas trees and nine table-top pieces. Only 13 articles were officially destroyed; the rest were released due to phytosanitary certificates and assessment of pest viability. This is a reduction from 2023 when 1,774 items were taken off sale. Survey results show that

almost equal amounts of product were purchased from Minnesota suppliers and out-of-state suppliers, with Wisconsin, Michigan, and North Carolina being the largest out of state sources.

Overall, significant, and beneficial changes are taking place in the holiday greenery industry where stakeholders have an interest in limiting holiday greenery pest introductions. Growers, distributors, and retailers are more aware of the problems holiday greenery pests present. More retailers are sourcing their materials locally and have fewer problems and pest risks.

Table 11. 2024 Holiday Greenery Inspections

Holiday Greenery Inspections	2022	2023	2024
Christmas trees inspected	22,000	42,000	64,700
Elongate Hemlock Scale (EHS) on Christmas trees	317	1,618	628
Elongate Hemlock Scale (EHS) on wreaths, porch pots, tabletop pots, and tree boughs	364	156	9

Table 12. 2024 Elongate Hemlock Scale Incidents During Holiday Greenery Inspections

Elongate Hemlock Scale Incidents	2022	2023	2024
Articles with Elongate Hemlock Scale	681	1,774	637
Sites with Stop Sales Issued	13	25	5

Firewood Heat Treatment Certification

The MDA offers a fee-based Firewood Certification program for businesses or individuals interested in selling pest-free firewood that meets the USDA heat treatment standards for wood boring pests. This heat treatment certification kills a wide variety of plant pests that are commonly transported in firewood, including emerald ash borer, which is regulated in 53 of Minnesota's 85 counties as of December 2024. Heat treatment certification allows hardwood firewood to move freely between counties with and without emerald ash borer restrictions. There are 14 MDA-certified companies within Minnesota with 18 kilns. A list of Certified Firewood Producers is available on the MDA website.

For More Information

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