

GROWING KNOWLEDGE

Series content is coordinated by Dr. Jay Pscheidt, professor of botany and plant pathology at Oregon State University in Corvallis, Oregon.



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Protecting healthy plants

Improving plant knowledge and skills in plant production is the key to healthy crops. The certification program emphasizes the critical role of education in adopting and enhancing best management practices. PHOTO COURTESY OF OREGON STATE UNIVERSITY

Program equips growers with knowledge to prevent and diagnose nursery crop diseases

BY LUISA SANTAMARIA

IMPLEMENTING EFFECTIVE MANAGEMENT PRACTICES to prevent plant diseases has been a central objective within the educational framework of the Plant Pathology Program, also known as the Healthy Plants and Bilingual Education Program, at the North Willamette Research and Extension Center (NWREC) in Aurora.


This initiative started by first conducting a comprehensive assessment. It included identifying educational needs, understanding the diverse audience, and gaining insights into the complexities of plant production at various nurseries across Oregon.

During the past decade, the program has thoroughly conducted three comprehensive surveys. These surveys aimed to discern the specific areas of interest among nursery owners, man-

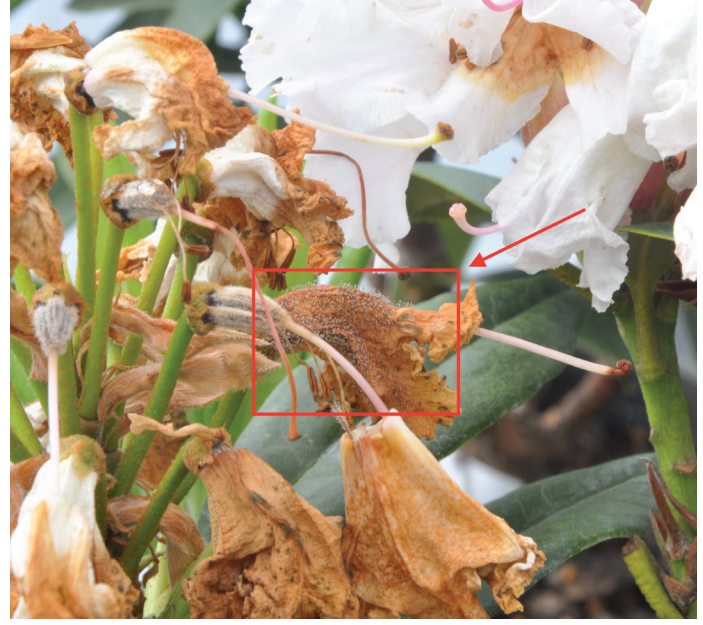
agers, and frontline workers, ensuring that the educational efforts remain well-aligned with their priorities.

The survey findings revealed a distinct interest among our grower community. A strong emphasis on plant disease identification and diagnostics was at the forefront. This topic obviously mattered to our participants.

Additionally, the concept of integrated pest management came out as a major priority. These insights confirm our program's commitment to addressing these critical challenges in an extensive and comprehensive approach.

Our mission is to provide nurseries and their teams with the information and resources they need to protect and improve plant health. This ongoing commitment to responsive education 

Growing Knowledge



Recognizing symptoms and signs of plant diseases is the crucial first step towards accurate diagnosis and effective treatment. Symptoms caused by *Agrobacterium* spp (top left), *Botrytis* spp (top right) and *Phytophthora* spp (bottom photos). PHOTOS COURTESY OREGON STATE UNIVERSITY

ensures that the Healthy Plants program remains a shining example of excellence in the field of plant disease management.

Why a certification program?

The beginning of the certification program idea can be traced back to interactions with workshop and educational event attendees.

These interactions revealed a pressing desire among workers to have a tangible document validating their knowledge and skills, especially after dedicating several years to the industry. Simultaneously,

nursery owners sought a solution that would permit growers to access continuous education without disrupting their work schedules — essentially, an education program custom-made to the individual's pace.

The development of this idea into a comprehensive certification program was a labor-intensive process. It spanned several years and required substantial funding. It culminated in a significant achievement in 2020, when the program successfully launched a bilingual certification initiative. Titled “Disease Prevention

and Diagnosis for Nursery Crops,” it falls under the umbrella of the Professional and Continuing Education (PACE) platform at Oregon State University.

This innovative certification program not only demonstrates the plant pathology program's commitment, but it also fills a significant educational need in the nursery sector.

It provides individuals with formal acknowledgement of their competence, while also giving a flexible and accessible outlet for continued education to nursery workers, plant enthusiasts, and garden professionals. This promotes a culture



The course explores the relationships between plant production practices and the effects of these interactions on plant health and growth. PHOTO COURTESY OREGON STATE UNIVERSITY

of constant improvement and excellence within the industry. This innovative approach emphasizes the adaptability and responsiveness of educational programs to the ever-changing demands of the field.

One of the primary objectives of establishing this certification program for disease diagnostics in nursery crops is to comprehensively address critical aspects that strengthen its importance:

Protection of investments: Nursery businesses invest significant resources in cultivating and selling plants. Plant diseases can lead to crop loss, reduced product quality, and decreased marketability. Certification helps nursery workers identify and manage diseases promptly, protecting these investments.

Preventive measures: This training was designed to help nursery growers understand effective disease prevention and management strategies. Nursery employees can learn about good cleanliness, plant selection, and cultivation procedures that can help decrease disease outbreaks while saving time and money.

The course explores the relationships between plant production practices and the effects of these interactions on plant health and growth. The course promotes a sense of responsibility in each participant at any level of production. Growers will recognize that all processes in plant production are crucial and complement each other to obtain a healthy and sellable product.

Early disease detection: Early detection of plant diseases is crucial for effective management. Certified workers are trained to recognize the signs and symptoms of diseases in their early stages, allowing for timely intervention. See Figure 1. This can prevent the spread of diseases to other plants and reduce the need for costly treatments.

Reduced risk of disease spread: Diseases in nursery plants can spread to other nurseries or landscapes when infected plants are sold or planted. Certified nursery workers are more likely to follow protocols that minimize the risk of spreading diseases, contributing to overall disease management efforts in the industry.

Help with licensing preparation: In addition, those who complete the course will be more confident and better prepared to take the pesticide licensing exam.

That's because the information on pathogens, disease, and management presented in this course is the foundation on which the licensing exam material is built. Our online, interactive Disease Prevention and Diagnosis for Nursery Crops Certification Course has been approved for four core Oregon Department of Agriculture (ODA) pesticide recertification credits.

Market competitiveness: Nurseries that employ certified workers can market themselves as knowledgeable and committed to plant health. This can attract more customers who are concerned about the health and longevity of the plants they purchase, giving certified nurseries a competitive edge.

Environmental responsibility: Disease management practices often involve reducing the use of pesticides and adopting more sustainable and environmentally »

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The mission of the program is to provide nurseries and their teams with the information and resources they need to protect and improve plant health. PHOTO COURTESY OREGON STATE UNIVERSITY

friendly approaches. Certification encourages nurseries to be responsible stewards of the environment, which can appeal to environmentally conscious consumers.

Overview of disease prevention and diagnosis for Nursery Crops Certification Course:

The course consists of five online modules and is self-paced. There is an assessment at the end of each module that students should complete before proceeding to the next module. The instructor is available via email to answer questions and address concerns.

First module — Provides a broad overview of plant diseases and the various microorganisms that can cause them.

Second module — Introduces important plant pathology concepts such as the disease triangle and disease cycles.

Third module — We discuss best management practices (BMPs) that can be executed to manage and prevent plant diseases.

Fourth module — This covers the signs, symptoms, and management of specific nursery crop diseases. In this module, we highlight diseases caused by different groups of plant pathogens and include examples of relevant diseases in the nursery industry, such as boxwood blight, botrytis, and diseases caused by *Phytophthora* spp.

Fifth module — The course will finish with a module that introduces Integrated Pest Management and includes scouting and record-keeping procedures as well.

Students will need to pass a final exam before receiving their Plant Health Certificate. A cumulative grade of 70% or more is required to pass. At the end of the course, students will be well-equipped and able to apply their newly-gained knowledge of plant health to create an environment where healthy plants can grow and thrive.

The creation of this initiative dem-

onstrates the Extension Plant Pathology Program's commitment to protecting investments, supporting sustainability, and upholding the highest standards of plant health. The nursery industry acknowledges the vital role of education. By endorsing this program, the nursery sector can consolidate its position as a cornerstone of healthy horticultural practices by committing to knowledge and excellence while promoting a culture of continuous progress and growth. ©

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