

SURVIVAL IN NEMATODE-RESISTANT PINES

Tolerant families
^78,01%
61,04% average for all evaluated families



PLANTATION SITE RECOMMENDATION

Seed from these resistant parents of families is suitable for developing plantations throughout Galicia and beyond, provided that the climate and soil characteristics are similar. It should be noted generally that optimal growth of this species is limited by frost, droughts, flooded soils and limestone soils.



Pinus pinaster
 resistant to the
Pine Wood Nematode
(Bursaphelenchus xylophilus)

XUNTA DE GALICIA

EARNINGS FROM A NEMATODE-RESISTANT PINE PLANTATION

Expected income per hectare and year, after the final cut, in a medium-productivity plantation.

Tolerant families
^278€ / year

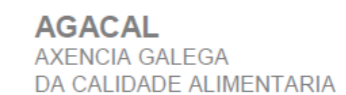
240€ / year Galician commercial pines

Estimates based on measurements in 12-year-old plots, after a 30-year growth cycle, at a standing timber price of 30 € / m³.



WHERE TO OBTAIN SEED

The research to develop these resistant pines was done at the Lourizán Forest Research Center. The Viveiros Xunta de Galicia-Semfor forest seed center of the Dirección Xeral de Planificación e Ordenación Forestal (Consellería do Medio Rural), located in Bertoa, s/n - 15100 Carballo, provides this seed to nurseries and producers with a guarantee of strict phytopathological control.



INDITEX



D.L.: C 1408-2020

Genetic breeding is one of the most important strategies for combatting pine wilt disease.

Lourizán Forest Research Center works to select and breed PWD-resistant pines.

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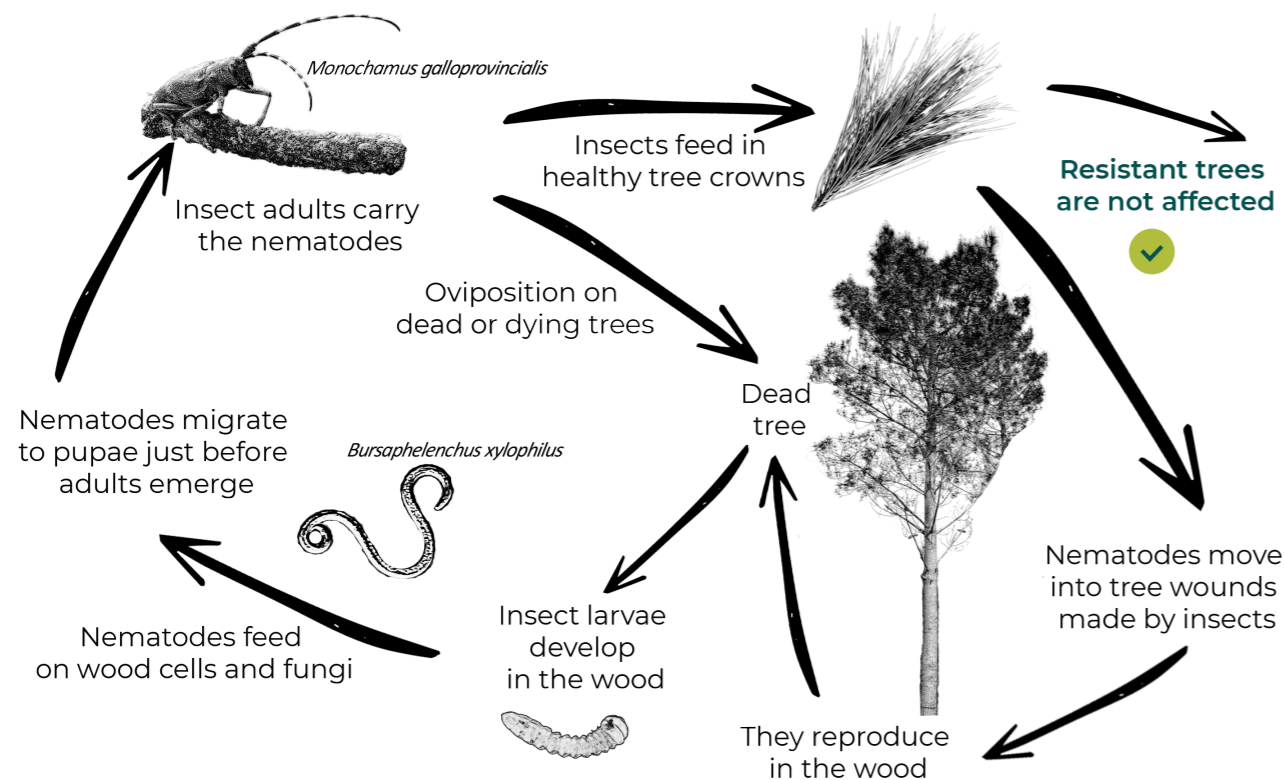


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THE DISEASE: PINE WILT DISEASE (PWD)

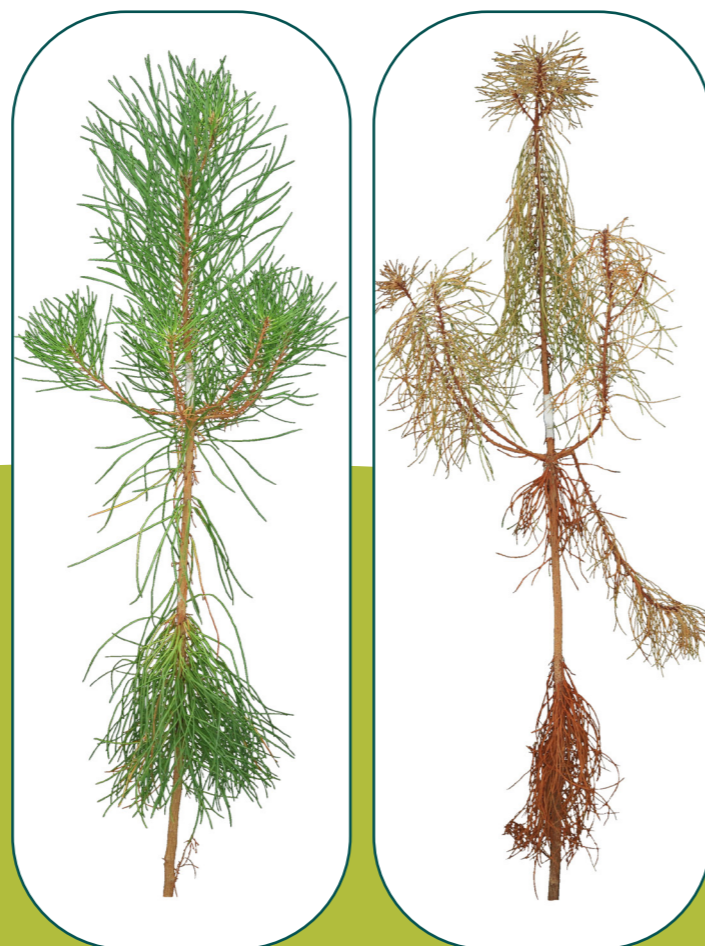


Nematode: the 0.4-1 mm worm that causes the disease.

Monochamus: beetle vector that transmits the nematode while feeding on young twigs or when reproducing on decaying trees.

Susceptible trees: some conifer species.

Specific environmental conditions.



“
The pine wood nematode can cause rapid wilting of needles and tree death within a few months or even weeks.”

PWD-RESISTANT *Pinus pinaster* COMMERCIALY AVAILABLE TO NURSERIES

The Lourizán Forest Research Center has selected a group of maritime pine families with high PWD survival rates in greenhouse tests.

These 6 families have been registered as parents of families in the National Catalogue of Base Materials, with the codes PF-Q-26/15/001, PF-Q-26/15/002, PF-Q-26/15/003, PF-Q-26/15/004, PF-Q-26/15/005, PF-Q-26/15/006, to guarantee the quality of their seed for use in forest plantations.

Besides being tolerant to the nematode, these families have good wood producing qualities.

**ASK AT YOUR NURSERY FOR
THESE GALICIAN PINES WITH
THE PINK LABEL!**



EVALUATION AND SELECTION OF RESISTANT MATERIAL



Selection of 116 *Pinus pinaster* plus trees from Galician coastal areas

10 field trials

Height and diameter measurements



5 greenhouse tests

Periodic evaluation of symptoms and mortality in 91 families



Selection of families with lower mortality from *B. xylophilus* and higher than average volume growth

