

BREEDING FOR RESISTANCE TO PATHOGENIC PINE WOOD NEMATODES

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We conducted an inoculation test using 231 open pollinated families (total 6,869 seedlings) of *Pinus densiflora* Sieb. et Zucc. and 301 open pollinated families (total 9,020 seedlings) of *Pinus thunbergii* Parl. to evaluate their susceptibility and mortality with pathogenic nematodes, *Bursaphelenchus xylophilus*. The 2-year-old seedlings were inoculated with the 3,000 nematodes/seedling in a nursery bed from July 5 to 20, 2017. The susceptibility of pine species to infection by *B. xylophilus* varied between pine species and among families. The average survival rate of *P. densiflora* at the time of the final sampling (about 60 days after inoculation) was 48.3 percent, and that of *P. thunbergii* was 12.5 percent. The average number of *B. xylophilus* recovered from 11 stems of *P. densiflora* and 12 stems of *P. thunbergii* was ranged from 40 to 398 and from 59 to 470 at 60 days after inoculation, respectively. Additional inoculation tests are suggested to identify tolerant families and individuals, particularly those that prevent nematode reproduction.

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