

Current status of pine wood nematode resistance breeding in Japan

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Coping with the severe damage of pines by pine wood nematode, *Bursaphelenchus xylophilus*, resistance breeding project against this nematode was started in 1978. Survived trees had been selected in the severely damaged forest as the candidate trees. Their grafts were inoculated with nematode to evaluate their resistance. At the end of this project 92 Japanese red pine, *Pinus densiflora*, clones and 16 Japanese black pine, *Pinus thunbergii*, clones were obtained. After then the damaged area has been expanded to the northernmost prefecture. According to expansion of the damaged area further selection has been proceeding. Present numbers of the resistant clones are 208 for Japanese red pine and 110 for Japanese black pine. To increase the efficiency of inoculation test some modifications have been adopted. The seedlings from the candidate tree have been used in inoculation test to cover the difficulty of grafting. The stronger nematode isolate has been used in the northern area to increase mortality. Second generation varieties have been developed after crossing the 1st generation varieties.

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