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Sudden oak death: vigilance!

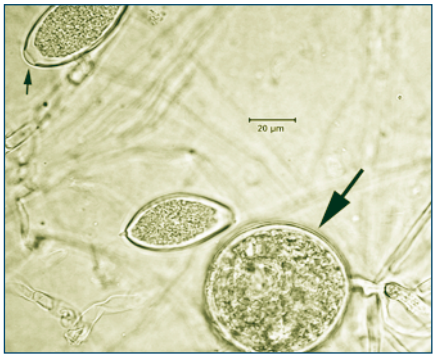
Sudden oak death (SOD) lives up to its dramatic name. It is a serious disease[1] that constitutes a real threat for the forests of Quebec and Canada.

Faced with this strong possibility, researchers from the Canadian Forest Service, at the request of the Canadian Food Inspection Agency (CFIA), combed through all of the reports, research results and observations available in 2005 in order to assess the risk that would be created by the presence of SOD in Canada.

First observed in Europe at the beginning of the 1990s, SOD was first detected in North America in 1995, in California. Since that time, the disease has destroyed numerous oak stands, sometimes very quickly after infection. Natural environment eradication represents an impossible mission: the spores survive for months in the ground or in plant debris and the wind can also transport them over several kilometres. In Canada, two warnings were launched in British Columbia, in 2003 and 2004, when infected ornamental plants from California were discovered. Through destruction, quarantine and disinfection, it was possible to avoid contamination on a larger scale.

Severely affected oak stands (California).
Photo: S. Sela (CFIA)

Canker caused by SOD.
Photo: D. Rioux



Phytophthora ramorum.
Photo: D. Rioux

Risk assessment made it possible to establish a clear picture of the extent of the problem and to consider adequate prevention and detection measures. The risk of the disease being introduced and establishing itself was assessed as high, as was the risk related to economic impact. However, the risk of the disease spreading would be medium or low. As for the environmental consequences of the disease, that level of risk is considered medium.

1 Sudden oak death is caused by *Phytophthora ramorum*, a microorganism that is half-fungus, half-algae.

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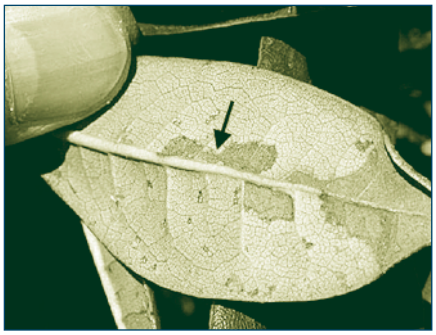
Lastly, taking into account the hosts present and climatic conditions, among other parameters, British Columbia and the southern parts of Quebec, New Brunswick and Ontario would be the most susceptible zones. Moreover, research is underway to better assess the susceptibility of certain trees in eastern Canada, including the red oak, white ash, sugar maple, yellow birch (wild cherry), balsam fir and larch.



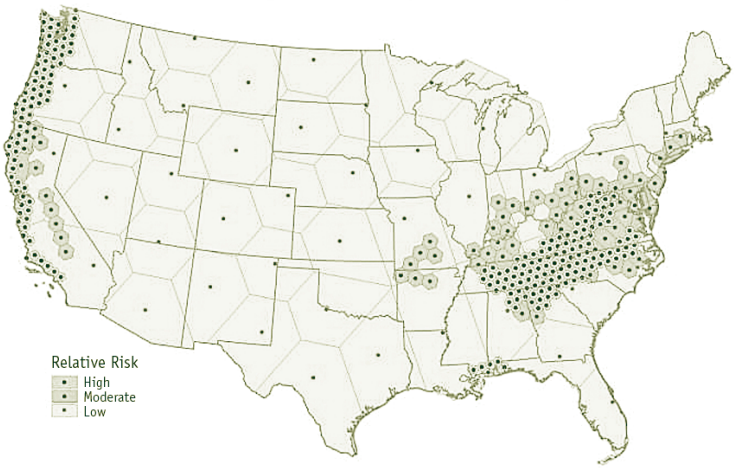
Symptoms of SOD on a rhododendron leaf.
Photo: S. Sela (CFIA)

Detection of this pathogen is complex, because SOD produces symptoms similar to those caused by other biotic or abiotic agents. In addition, certain plants without symptoms act as vectors (inoculum sources). It is therefore essential to remain vigilant for SOD. Prevention is paramount, first by keeping infected plant life from entering the country, horticultural plants in particular, as they constitute the most significant source of propagation. At the same time, raising awareness among forest workers and woodland owners and the application of proper nursery management practices constitute an essential addition to this preventive effort.

Disturbing economic impacts

- Once in Canada, SOD could cause serious economic damage in addition to environmental damage and place the horticultural industry in danger by closing off access to Canadian products by international markets.
- Christmas tree producers could also suffer the consequences of the presence of SOD. In fact, although the health of several coniferous species is not at issue, their needles could be infected and become an inoculum source.
- Although British Columbia's horticultural production sector generated sales of 152 million dollars in 2002, costs linked to the presence of SOD in Canada reached several million dollars, if we take into account sales lost due to the destruction of plants or their placement in quarantine, and financial and human resources dedicated to studying the disease and informing the public, in addition to the implementation of phytosanitary measures to prevent the introduction, establishment or spreading of SOD.

Preliminary SOD Risk/Hazard Map



SOD risk prediction model in the United States.
Photo: B. Smith (USDA Forest Service)

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