

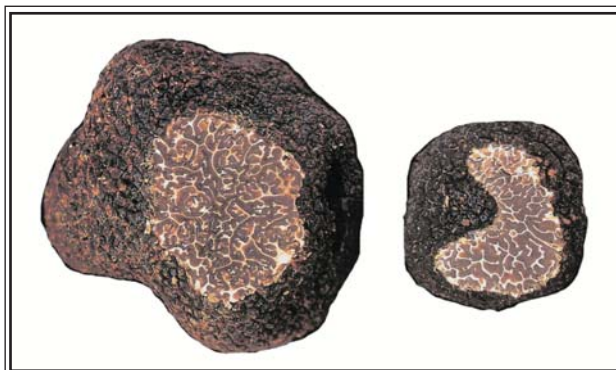
TUBER BRUMALE (WINTER TRUFFLE)

What is *Tuber brumale* (Winter Truffle)?

It is an edible truffle which is associated with oak and hazel trees. It occurs naturally in France and Italy and in other parts of Europe.

How did it get here?

MAF Biosecurity New Zealand (MAF BNZ) does not know for sure how *T. brumale* arrived in New Zealand. However, the possibility that it arrived in New Zealand as a low level contaminant on imported truffles cannot be ruled out. Modern DNA tests are becoming capable of determining the presence of very small quantities of such contaminants.



White veins in the gleba (eg. internal truffle tissue) of *T. brumale* are often wider and more spaced than in *T. melanosporum* (Périgord Black). Périgord Black also has reddish nuances on its peridium (skin).

Photo courtesy of Truffle and Truffle Cultivation by Olivier Savignac and Souzaï (Faniac, Périgueux, France 2002, ISBN 2-86577-28-4)

While MAF BNZ investigations have revealed that it has been present since at least 1995, MAF BNZ cannot discount the possibility that *T. brumale* was present before this date.

What is being done about it?

T. brumale was not known to occur in New Zealand and MAF BNZ initiated a response to determine; how it got here, how long it has been here, its distribution and potential impacts. As a precautionary action a number of seedlings found to be infected with the Winter Truffle were destroyed while investigations were conducted. MAF also declared *T. brumale* to be an unwanted organism under the Biosecurity Act 1993 while the investigations were undertaken.

To determine whether *T. brumale* was already present in the New Zealand environment a sample of three North Island truffières were tested for *T. brumale*. A small number of these trees tested positive for *T. brumale*. The results were confirmed by DNA testing. MAF BNZ has not destroyed further trees due to the confirmed presence of *T. brumale* in New Zealand.

Given the number of truffières established in recent years that may contain *T. brumale*, and the technical unfeasibility of eradicating *T. brumale* over large areas, MAF BNZ will not be attempting eradication of this truffle or imposing movement controls on truffle growers. This decision is supported by the New Zealand Truffle Association (NZTA).

How long has it been here?

We don't know. Oaks and hazels have, since European settlement, been brought in from Europe and the tools to detect the presence of small amounts of *T. brumale* on seedlings have only become available in recent years. It is possible that *T. brumale* arrived long ago, but we know for certain that it is present in trees planted in the mid 1990s, and potentially other trees as well.



For more information visit:
www.biosecurity.co.nz or www.southern-truffles.co.nz

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Is it a risk for human health, the environment or for native plants?

It is not a risk to human health. *T. brumale* truffles are edible and traded in France and other European countries. This truffle species, like other truffle species, exists in non-harmful, symbiotic relationship with hazels and oaks. It is not considered a threat to New Zealand's native fauna and flora but can compete with the Perigord black truffle for space on the roots of host plants.

MAF BNZ has now removed the unwanted organism status of *T. brumale*. Its status as a new organism is yet to be determined by the Environmental Risk Management Authority.

How can I tell if I have it in my truffière?

Without testing your tree roots, it is difficult to determine whether you will have *T. brumale* in your truffière. It should be noted that negative test results do not guarantee that a truffière is free of *T. brumale*. To be absolutely sure, every tree would have to be tested.

How can I find out if I have it?

It is possible for a skilled mycologist to identify *T. brumale* mycorrhizae on root samples using a microscope, and DNA testing can be used to confirm its presence. The NZTA is investigating options to help growers establish if they have *T. brumale* in their truffières.

How do I manage it?

If you don't have *T. brumale*: you should source seedlings that have been tested and certified as being free from *T. brumale*.

If you do have *T. brumale*: many truffle growers are familiar with mycorrhizal species such as *Scleroderma sp.* and *Tuber maculatum* which compete with more valuable truffle species. The skills needed to manage *T. brumale* are similar and *T. brumale* has the advantage of being a marketable edible species.

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