

Mini data sheet on 'Candidatus Phytoplasma australiense'

Added in 1998 - Deleted in 2004

**Reasons for deletion:**

The pest '*Candidatus Phytoplasma australiense*' has been included in EPPO Alert List for more than 3 years (first added as strawberry lethal yellows disease) and during this period no particular international action was requested by the EPPO member countries. In 2004, it was therefore considered that sufficient alert has been given and the pest was deleted from the Alert List.

'Candidatus Phytoplasma australiense'

Why	At first, strawberry lethal yellows disease associated with ' <i>Candidatus Phytoplasma australiense</i> ' came to our attention because it appeared to us as a 'new' and severe disease of strawberry in New Zealand. Later, it was felt more appropriate to revise the Alert List to include the pathogen as such and all diseases which have been associated to it.
Where	Australia, New Zealand. It is hypothesised that the phytoplasma originates from New Zealand and may have been introduced into Australia.
On which plants	<i>Cordyline australis</i> (cabbage tree - Agavaceae): ' <i>Candidatus Phytoplasma australiense</i> ' is associated with sudden decline of cabbage tree in New Zealand. <i>C. australis</i> is common in forest margins and wetlands and also widely cultivated as an ornamental. <i>Fragaria ananassa</i> (strawberry - Rosaceae): strawberry lethal yellows which occurs in New Zealand, in propagation beds in Kitikati district, Bay of Plenty. <i>Carica papaya</i> (papaya - Caricaceae): papaya die-back, can be devastating in Queensland but occasional in Northern Territory and Western Australia. <i>Phormium tenax</i> and <i>P. cookianum</i> (New Zealand flax - Phormiaceae): yellow leaf disease, occurs in New Zealand where a vector has been identified ( <i>Oliarus atkinsoni</i> , Homoptera: Cixiidae, monophagous species feeding on New Zealand flax). <i>Vitis vinifera</i> (grapevine - Vitaceae): Australian grapevine yellows, it occurs in south Australia. It is also suspected in <i>Coprosma robusta</i> (Rubiaceae), a common shrub in New Zealand.
Note	In New Zealand, Padovan <i>et al.</i> (2000) have also observed that phytoplasmas found in strawberry plants showing symptoms of green petal or lethal yellows were indistinguishable. The fact that the same phytoplasma is associated with two distinct diseases on the same host cannot yet be explained. In addition to New Zealand, it can be recalled that green petal symptoms are seen sporadically in Europe, North America and Australia. In North America, another(?) phytoplasma disease called strawberry lethal decline was reported first in the north western US and then in British Columbia (CA). The pathogen can be transmitted by the leafhopper <i>Aphrodes bicincta</i> . Experimental transmission of western X-disease to strawberry produced symptoms similar to those of lethal decline. Reported to be of minor importance. The only reported control measure is to rogue infected plants. In Australia, another lethal yellows had been associated in the past with a rickettsia-like-bacterium. But this disease has apparently not been seen again. More studies are needed to understand better the aetiology and epidemiology of phytoplasma diseases of strawberry.
Damage	Symptoms usually include leaf yellowing, followed by more or less severe plant decline. Plant mortality has been reported at least on strawberry (severe decline, in field conditions plants may die and in glasshouse conditions they rapidly die), on papaya and <i>Cordyline australis</i> .
Pathway	Infected plants for planting (see host plants above) from New Zealand and Australia.
Possible risks	Among host plants of ' <i>Candidatus Phytoplasma australiense</i> ', grapevine and strawberry are important crops in the EPPO region. <i>Cordyline australis</i> is also a

widely grown ornamental plant (mainly pot plant, but also garden plant in southern parts). Insect vectors are suspected but so far only one New-Zealand species *Oliarus atkinsoni* has been identified (it does not occur in Europe). The phytoplasma can cause lethal diseases in particular on strawberry, although it is probably of a limited extent (apparently restricted in one region). On grapevine, more data is needed on the impact of the disease in the field.

Source(s)

Andersen, M.T.; Longmore, J.; Liefting, L.W.; Wood, G.A.; Sutherland, P.W.; Beck, D.L.; Forster, R.L.S. (1998) Phormium yellow leaf phytoplasma is associated with strawberry lethal yellows disease in New Zealand. *Plant Disease*, 82(6), 606-609.

Andersen, M.T.; Beever, R.E.; Sutherland, P.W.; Forster, R.L.S. (2001) Association of '*Candidatus Phytoplasma australiense*' with sudden decline of cabbage tree in New Zealand. *Plant Disease*, 85(5), 462-469.

Liefting, L.W.; Padovan, A.C.; Gibb, K.S.; Beever, R.E.; Andersen, M.T.; Newcomb, R.D.; Beck, D.L.; Forster, R.L.S. (1998) '*Candidatus Phytoplasma australiense*' is associated with Australian grapevine yellows, papaya dieback and Phormium yellow leaf diseases. *European Journal of Plant Pathology*, 104(6), 619-623.

Padovan, A.; Gibb, K.; Persley, D. (2000) Association of '*Candidatus Phytoplasma australiense*' with green petal and lethal yellows diseases in strawberry. *Plant Pathology*, 49(3), 362-369.

Padovan, A.C.; Gibb, K.S. (2001) Epidemiology of phytoplasma diseases in papaya in Northern Australia. *Journal of Phytopathology*, 149(11/12), 649-658.

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