

# Strigula oleistrata

## COMMON NAME

Pizza lichen

## FAMILY

Strigulaceae

## AUTHORITY

M. Ford, Blanchon et de Lange

## FLORA CATEGORY

Lichen – Native

## ENDEMIC TAXON

Yes

## ENDEMIC GENUS

No

## ENDEMIC FAMILY

No

## STRUCTURAL CLASS

Lichens - Crustose

## CURRENT CONSERVATION STATUS

2019 | At Risk – Naturally Uncommon | Qualifiers: DP, RR, Sp.

## BRIEF DESCRIPTION

Characterised by rounded, almost circular, thalli and pycnidia that are often clumped or scattered rather than present in lines radiating out from the thallus centre.

## DISTRIBUTION

**North Island:** Currently the species is only known from Kerikeri south to Hauraki Gulf, northern Waikato and Coromandel Peninsula within the northern North Island of New Zealand. This is within an area bounded by the natural distribution of its principle phorophyte taraire (*Beilschmiedia tarairi*).

## HABITAT

The species mostly inhabits the canopy foliage of taraire (*Beilschmiedia tarairi*), a large, widespread forest tree of northern New Zealand coastal to montane forests. *Strigula oleistrata* has so far only been collected from coastal and lowland indigenous forest remnants dominated by taraire and titoki (*Alectryon excelsus* subsp. *excelsus*). In these habitats it has been found on the leaves of taraire and, less commonly titoki in association with the lichens *Byssoloma subdiscordans*, *Calopadia subcoerulescens*, *Strigula delicata*, *S. nitidula*, *S. orbicularis*, *S. novae-zelandiae* and *S. smaragdula* and occasionally the liverwort *Siphonolejeunea nudipes*.



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## DETAILED DESCRIPTION

**Thallus** foliicolous, epiphyllous, subcuticular, almost never growing near the margins and scars of leaves, scattered to gregarious typically and almost circular, but not commonly oval,  $3\text{--}9 \times 3\text{--}7$  mm in diam. (mean  $4.9 \times 4.3$  mm), usually very abundant, pale green to ash green (white when dead), shiny but without any metallic tint, with smooth or slightly irregular surface; margins undulate to slightly scalloped. Individual lobes not apparent, thallus appears to grow radially rather than as digitate lobes.  $20\text{--}40$   $\mu\text{m}$  thick, without prothallus. **Photobiont** a species of *Cephaleuros* (Trentepohliaceae), with  $\pm$  rectangular cells,  $7.5\text{--}15.0 \times 2.5\text{--}12.5$   $\mu\text{m}$ , yellow-green to green,  $\pm$  arranged in rows or sheets. **Perithecia** few in collections examined, slightly flattened but with rather hemispheric or slightly conic apex, single or rarely aggregated in groups of 2(–3), typically arranged in circle, at first immersed in thallus but soon with more than half of the outer surface exposed, black or greenish when still covered by thallus, smooth, rather shiny,  $0.175\text{--}0.375$  mm in diam. and ca  $0.25$  mm high, with central, usually distinct ostiole. Outer wall and involucrellum carbonaceous black in section, expanding laterally under thallus and thus reaching  $0.5\text{--}0.75$  mm in diam.,  $20\text{--}30$   $\mu\text{m}$  thick near ostiole; inner wall pale brown to colourless,  $7.5\text{--}10.0$   $\mu\text{m}$  thick; perithecial cavity rather flattened,  $0.30\text{--}0.40$  mm in diam. and  $0.1$  to  $0.125$  mm high; hamathecium of simple paraphyses,  $0.6\text{--}2.5$   $\mu\text{m}$  thick, with several transverse septa; asci bitunicate, obclavate, with thickened apex,  $37.5\text{--}50.0 \times 9.0\text{--}12.5$   $\mu\text{m}$  when young,  $50\text{--}60 \times 10\text{--}12$   $\mu\text{m}$  when mature; ascospores colourless, 8 per ascus, biserial, fusiform, with acute to rounded ends, 1-septate, with distal cell enlarged and swollen in mature stages, slightly constricted at septum but not breaking into pieces and without any mucoid appendage,  $15.0\text{--}19.0 \times 4.5\text{--}6.0$   $\mu\text{m}$ . Pycnidia producing abundant macroconidia, even on thalli producing perithecia and sometimes overgrowing them, **Pycnidia** scattered or clustered in groups of 2–23, sometimes arranged densely in concentric rings with clear areas of thallus surface between, and sometimes lacking from the margin; subcuticular in origin, hemispheric to subglobose in cross-section, orbicular to oval in outline,  $65\text{--}120$   $\mu\text{m}$  in diameter, unilocular, glabrous, shiny, black with grayish-brown central area (c.  $25$   $\mu\text{m}$  in diameter) and a punctiform centre, ostiolate, ostiole centrally located, oval to circular, papillate,  $5\text{--}8$   $\mu\text{m}$  in diameter. **Conidiophores** reduced to conidiogenous cells, mainly present at the bottom of the pycnidial chamber, cylindric or somewhat inflated at the base; Conidiogenous cells phialides, subcylindrical to lageniform, hyaline, smooth walled,  $6.0\text{--}12.5 \times 3.0\text{--}5.0$   $\mu\text{m}$ . **Macroconidia** abundant, colourless, blastic-phialidic, didymosporous, subcylindric (ellipsoid to almost bacilliform) with rounded ends, proximal end occasionally with a sublateral protuberance and distal end rarely with cap-shaped mucoid appendage, 1-septate, with septum typically thickened ( $0.6\text{--}1.7$   $\mu\text{m}$ ) but not polarilocular, not constricted at septum  $7\text{--}15.0 \times 2.5$   $\mu\text{m}$ . Pycnidia producing microconidia not found.

**Chemistry:** TLC nil

## SIMILAR TAXA

Although *Strigula oleistrata* is morphologically similar to other species in the *S. smaragdula* complex (sensu Jiang *et al.* 2017) it most closely resembles *S. novae-zelandiae*. From that species it differs by having a rounded, non-digitate thallus, with weakly scalloped margins, and notably by the pycnidia, which in *S. oleistrata* are scattered across the thallus surface or occur in clusters with the clusters often densely aggregated in the centre of the thallus or in concentric rings. This contrasts with the presentation of the pycnidia of *Strigula novaezelandiae* which are in radial lines. *Strigula oleistrata* has perithecia whereas these appear to be absent in *S. novae-zelandiae*. A feature of *Strigula novae-zelandiae* that was first recognised by Sérusiaux (1998) is the presence of polarilocular macroconidia; these are absent in *S. oleistrata*. There is also a size difference in the macroconidia of both species, those of *S. oleistrata* are smaller ( $7.5\text{--}15.0 \times 2.5$   $\mu\text{m}$ ) whereas those of *S. novaezelandiae* are larger ( $12.5\text{--}15.0 \times 2.5\text{--}4.0$   $\mu\text{m}$ ). Other than *Strigula novae-zelandiae*, the only other superficially similar *Strigula* to *S. oleistrata* found in New Zealand is *S. smaragdula*. This species differs from *S. oleistrata* in that it has a thicker thallus ( $20\text{--}80$   $\mu\text{m}$ ) and larger macroconidia ( $14\text{--}24 \times 4.5\text{--}5.5$   $\mu\text{m}$ ). Of the similar foreign species, *S. guanxiensis* has a smaller ( $1\text{--}2(3)$  mm diameter) thallus and larger macroconidia ( $12.5\text{--}17.5 \times 2.5\text{--}5.0$   $\mu\text{m}$ ); *S. acuticonidiarum* has a smaller ( $0.5\text{--}4.0$  mm diameter) and thinner thallus ( $10\text{--}25$   $\mu\text{m}$ ) and larger macroconidia ( $15.0\text{--}22.5 \times 3.0\text{--}4.0$   $\mu\text{m}$ ) (Jiang *et al.* 2017); and *S. sinoaustralis* a white punctate thallus, and smaller ( $4.0\text{--}6.0 \times 1.8\text{--}2.3$   $\mu\text{m}$ ) macroconidia (Jiang *et al.* 2016)

## THREATS

Sites where this species has been confirmed from appear to have both *S. oleistrata* and *S. novae-zelandiae* in similar abundances. Under these circumstances a conservation assessment comparable to that of *S. novae-zelandiae* is justified. Therefore, *Strigula oleistrata* has been provisionally assessed as 'At Risk-Naturally Uncommon' (Ford *et al.* 2019).

## SUBSTRATE

Foliicolous

## ETYMOLOGY

**oleistrata:** ‘strewn with olives’

## ATTRIBUTION

Fact sheet prepared by Marley Ford (29 July 2021). Information in the Brief description, Distribution, Habitat, Features and Similar taxa sections copied from Ford et al., (2019)

## REFERENCES AND FURTHER READING

- Ford M., Blanchon D.J., Veale A., Doyle E.J., Rolfe J.R., and de Lange P.J. 2019: Hidden in plain sight—a new *Strigula* species segregated from *Strigula novae-zelandiae* (Lichenized Ascomycota: Strigulaceae). *Phytotaxa*, 424(5): 267–281.
- Sérusiaux E. 1998: Further observations on the lichen genus *Strigula* in New Zealand. *The Bryologist* 101: 147–152. [https://doi.org/10.1639/0007-2745\(1998\)101\[147:FOOTLG\]2.0.CO;2](https://doi.org/10.1639/0007-2745(1998)101[147:FOOTLG]2.0.CO;2)
- Jiang S.H., Wei X.L. and Wei J.C. 2016: *Strigula sinoaustralis* sp. nov. and three *Strigula* spp. new to China. *Mycotaxon* 131: 795–803. <https://doi.org/10.5248/131.795>
- Jiang S.H., Wei X.L. and Wei J.C. 2017: Two new species of *Strigula* (lichenised Dothideomycetes, Ascomycota) from China, with a key to the Chinese foliicolous species. *Mycotaxa* 19: 31–42

## MORE INFORMATION

<https://www.nzpcn.org.nz/flora/species/strigula-oleistrata/>