

Simplicia felix

SYNONYMS

None - first described in 2016

FAMILY

Poaceae

AUTHORITY

Simplicia felix de Lange, J.R.Rolfe, Smitsen et Ogle

FLORA CATEGORY

Vascular – Native

ENDEMIC TAXON

Yes

ENDEMIC GENUS

Yes

ENDEMIC FAMILY

No

STRUCTURAL CLASS

Grasses

CHROMOSOME NUMBER

$2n = 28$

CURRENT CONSERVATION STATUS

2017 | Threatened – Nationally Critical | Qualifiers: DP, RR

PREVIOUS CONSERVATION STATUS

2016 | Threatened – Nationally Critical

BRIEF DESCRIPTION

Feeble, inconspicuous mat-forming grass of shaded habitats. Plants rooting at nodes. Inflorescences inconspicuous, delicate; flowering branches scabrid, upper branches often tightly appressed to main stem, basal ones often reflexed and spreading. Spikelets one-flowered, bearing prominent scabrid lemma and much reduced, minute scale-like glumes.

DISTRIBUTION

Endemic. New Zealand: North Island (from near Taihape to Wairarapa), South Island (one occurrence in North Otago).

HABITAT

A species of eastern lowland to lower montane, often riparian, seasonally dry (drought prone) Podocarp forests overlying base-rich substrates such as limestone, calcareous mudstone and siltstone. It has been found once outside these habitats in North Otago growing within a limestone overhang.



Simplicia felix growing sparsely through a ground cover of *Australina pusilla*. Wairarapa. Photographer: Jeremy R. Rolfe, Date taken: 26/02/2014, Licence: CC BY.



Simplicia felix leaf base and ligule. Wairarapa. Photographer: Jeremy R. Rolfe, Date taken: 01/03/2014, Licence: CC BY.

DETAILED DESCRIPTION

Plants forming flaccid, diffuse, often much interconnected, sprawling patches up to 1 m across. **Culms** 0.25–0.65 m long, green to dark brown when fresh, wiry, initially decumbent, becoming ascendant with the apices weakly erect, culm internodes 5–8, elongated, glabrous; internodes longer than subtending leaf-sheaths. **Culm-nodes** conspicuously swollen when fresh, dark green-brown to brown-black 0.15–0.25 mm long, rooting freely on contact with ground. **Basal leaf-sheaths** dull dark brown, membranous, strongly ribbed, usually abaxially pubescent (sometimes glabrous) on ribs, hairs 0.10–0.15 mm long, patent to retrorse; mid stem and upper leaf-sheaths pale-green to green, membranous, strongly ribbed, glabrous (rarely abaxially ribs finely pubescent toward sheath apex). **Ligule** 2.0–2.6 mm, membranous, lanceolate, apex entire, or deeply lacerate; glabrous, or with both surfaces hairy; hairs 0.15–0.18 mm long. **Leaf-blade** (20)–40–(60) × (1.0)–1.2–2.4–(3.0) mm, yellow-green to dark green, flat, narrow linear-lanceolate, finely ribbed, ribs smooth (sometimes minutely scabrid); margins minutely scabrid. **Panicle** 20–40–(80) mm long, linear to ± pyramidal, usually with basal branch or branch pair reflexed (often unevenly so); rachis glabrous (sometimes bearing a few minute prickle-teeth), branches 20–30 mm long, scabrid, binate, initially contracted but as inflorescences mature, spreading to reflexed, devoid of spikelets in lower half to two-thirds; pedicels appressed to branchlets, 0.20–0.25–(0.30) mm long, finely pubescent. **Spikelets** 2.7–3.0 mm, 1-flowered, lanceolate, light green. **Glumes** pale green (± hyaline), glabrous, ovatelanceolate to ovate, acute, 1-nerved, nerve sometimes extending beyond apex as a minute mucro, margins initially entire, becoming erose near apex, very sparsely ciliate in upper third; lower glume 0.5–0.6 mm, upper glume 0.75–0.8–(0.9) mm. **Lemma** 2.0–2.8–(3.0) mm, light green to cream, ovate-lanceolate to lanceolate, acute, apex mucronate (mucro 0.1 mm long), 5-nerved, the inner 3 nerves conspicuous, the outer less prominent; nerves bearing evenly spaced minute (0.02–0.03 mm long), antrorse, appressed prickle-teeth, interstices usually densely (sometimes sparsely) covered with minute antrorse prickle-teeth. **Palea** 2.0–2.8 mm, lanceolate, green to purple-green, 1–2-nerved, nerves bearing evenly spaced minute prickle (0.02–0.03 mm long) teeth, interstices usually glabrous, sometimes sparsely covered with minute prickle-teeth. **Rachilla** prolongation 0.8 mm, filiform, hyaline, glabrous except for sparse cilia cresting prolongation apex. **Stamens** 3. **Filaments** 0.6–0.9 mm long, hyaline. **Anthers** 1.0–1.2 mm, yellow. **Ovary** narrowly ovoid to weakly trigonous 1.0 mm long, pale green, glabrous; styles apical, 1.0–1.2 mm, hyaline; stigmas plumose, white. **Caryopsis** 1.2–1.4–(1.5) mm long, laterally compressed, pale orange to orange-brown when mature.

MANAAKI WHENUA ONLINE INTERACTIVE KEY

Key to the grasses of New Zealand

SIMILAR TAXA

Most similar to *Simplicia laxa* from which it is distinguished by the culm internodes which are longer than the subtending leaf sheaths and consistently glabrous; and by the strongly ribbed, dull dark brown basal sheaths, whose ribs are glabrous or pubescent (if pubescent then with the hairs 0.10–0.15 mm long). The mid-stem and upper-stem leaf sheaths of *Simplicia felix* are strongly ribbed and usually glabrous. The leaf surfaces and margins are mostly smooth though the ribs and leaf margins may be minutely scabrid. The inflorescences of *Simplicia felix* are smaller (up to 80 mm long rather than 150 mm long as in *S. laxa*), and the branches are scabrid rather than antrorsely hairy. Although the lemma of both species overlap in range, those of *S. felix* tend to be shorter (2.0–3.0 mm long) than those of *S. laxa* (2.8–3.4 mm long) and minutely scabrid rather than pubescent. The rachilla prolongation of *S. laxa* is narrowly lanceolate, 1.25–1.30 mm long and with the margins minutely ciliate, while that of *S. felix* is filiform, 0.8 mm long and bearing sparse cilia only near the apex. *Simplicia felix* is not closely allied to *S. buchananii* from which it is distinguished by the lax, sprawling, rather than erect culms; linear-pyramidal rather than linear inflorescences with binate branching, and by the lower branch or branches usually reflexed rather than appressed to the rachis. The pedicels of *S. felix* are also pubescent rather than glabrous (rarely minutely scabrid). For more information see de Lange et al. (2016).

FLOWERING

December–February

FLOWER COLOURS

Green

FRUITING

January–April

PROPAGATION TECHNIQUE

Easily grown from rooted pieces and stem node cuttings. Does best in shaded sites. Difficult to maintain. Dislikes competition.

THREATS

Simplicia felix occupies a very small area of only a few square metres wherever it occurs. It appears to have quite specific light requirements and tolerates only limited competition from other ground-cover species. The healthiest populations occur at sites where competition is reduced by grazing from cattle and sheep. While grazing apparently benefits *S. felix*, it will ultimately lead to the collapse of the forest canopy necessary for *S. felix* to survive.

Collectively, *Simplicia felix* occupies <1 ha, so meeting the criteria for Threatened—Nationally Critical B2 (Townsend et al. 2008), qualified 'DP' (Data Poor) and 'RR' (Range restricted).

ETYMOLOGY

felix: Taken from the Latin word for 'lucky' .

ATTRIBUTION

Fact Sheet prepared for NZPCN by P.J. de Lange (12 December 2016). Description adapted from de Lange et al. (2016).

REFERENCES AND FURTHER READING

de Lange PJ, Smitsen RD, Rolfe, JR, Ogle CC. 2016. Systematics of *Simplicia* Kirk (Poaceae: Agrostidinae)—an endemic, threatened New Zealand grass genus. *PhytoKeys* 75: 119–144.

<http://dx.doi.org/10.3897/phytokeys.75.10328>

Townsend AJ, de Lange PJ, Norton DA, Molloy J, Miskelly C, Duffy C. 2008. New Zealand Threat Classification manual. Department of Conservation, Wellington, NZ. 35 p.

<https://www.doc.govt.nz/globalassets/documents/science-and-technical/sap244.pdf>.

NZPCN FACT SHEET CITATION

Please cite as: de Lange, P.J. (Year at time of access): *Simplicia felix* Fact Sheet (content continuously updated). New Zealand Plant Conservation Network. <https://www.nzpcn.org.nz/flora/species/simplicia-felix/> (Date website was queried)

MORE INFORMATION

<https://www.nzpcn.org.nz/flora/species/simplicia-felix/>