
Zymoseptoria verkleyi

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Zymoseptoria verkleyi Crous, Videira & Quaedvlieg, *sp. nov.*

Etymology. Named after Gerard J.M. Verkley, for the contribution that he has made to further our understanding of the genus *Septoria*.

On sterile barley leaves on water agar: *Conidiomata* pycnidial, substomatal, immersed to erumpent, globose, dark brown, up to 200 µm diam, with central ostiole, 10–15 µm diam; wall of 3–4 layers of brown *textura angularis*. *Conidiophores* reduced to conidiogenous cells, or with one supporting cell, lining the inner cavity. *Conidiogenous cells* hyaline, smooth (in older cultures on malt extract agar becoming brownish, verruculose), tightly aggregated, subcylindrical to ampulliform, straight to curved, 7–15 × 3–4.5 µm, with inconspicuous, percurrent proliferations at apex, but also proliferating sympodially. Conidia of all three types present. *Type I conidia* (pycnidial conidia) solitary, hyaline, smooth, granular, acicular to narrowly obclavate, tapering towards subacutely rounded apex, with truncate or obconically truncate base, straight to flexuous, 1–6(–12)-septate, (30–)40–65(–80) × (2–)2.5(–3) µm; hila not thickened nor darkened, 1–2 µm. On synthetic nutrient-poor agar, yeast-like growth and microcyclic conidiation (*Type III conidia*) present, as well as aerial hyphae and older conidia disarticulating into phragmoconidia (*Type II conidia*).

Culture characteristics — (in the dark, 25 °C after 2 wk): Colonies erumpent, with even to feathery margins and sparse aerial mycelium. On potato-dextrose agar and malt extract agar surface pale olivaceous-grey to olivaceous-grey; reverse iron-grey, colonies reaching 12 mm diam.

Typus. Netherlands, Utrecht, Houten, on leaves of *Poa annua* (*Poaceae*), 2012, *S. Videira*, holotype CBS H-21085, cultures ex-type S657 = CBS 133618, ITS sequence GenBank KC005781 and LSU sequence GenBank KC005802, MycoBank MB801779.

Notes — Based on a megablast search of NCBIs GenBank nucleotide database, the closest hits using the LSU sequence are *Zymoseptoria brevis* (GenBank JQ739832; Identities = 862/865 (99 %), Gaps = 2/865 (0 %)), *Zymoseptoria tritici* (GenBank GU214436; Identities = 862/865 (99 %), Gaps = 2/865 (0 %)) and *Zymoseptoria passerinii* (GenBank JQ739843; Identities = 855/863 (99 %), Gaps = 0/863 (0 %)). Closest hits using the ITS sequence had highest similarity to *Zymoseptoria passerinii* (GenBank AF181699; Identities = 494/508 (97 %), Gaps = 5/508 (1 %)), *Zymoseptoria tritici* (GenBank FN428877; Identities = 473/479 (99 %), Gaps = 3/479 (1 %)) and *Zymoseptoria halophila* (GenBank JF700876; Identities = 461/475 (97 %), Gaps = 5/475 (1 %)). Although phylogenetically closely related to *Z. passerinii* (conidia 1–3-septate, 21–52 × 1.5–2.2 µm; Quaedvlieg et al. 2011, Stukenbrock et al. 2012), conidia of *Z. verkleyi* are much larger.

Table 1 Comparison of hosts, distribution and micromorphology of currently described *Zymoseptoria* species.

Species	Host	Origin	Morphology		Reference
			Conidial dimensions (µm)	Conidial septation	
Z. ardabiliae	*Lolium*	Iran	(15–)20–25(–30) × 2(–3)	(0–)1	Stukenbrock et al. (2012)
Z. brevis	*Phalaris*	Iran	(12–)13–16(–17) × 2(–2.5)	0–1	Quaedvlieg et al. (2011)
Z. halophila	*Hordeum*	Iran	(30–)33–38(–50) × 2(–3)	1(–3)	Quaedvlieg et al. (2011)
Z. passerinii	*Hordeum*	Italy	21–52 × 1.5–2.2	1–3	Quaedvlieg et al. (2011)
Z. pseudotritici	*Dactylis*	Iran	(7–)10–12(–22) × 2.5(–3)	0(–1)	Stukenbrock et al. (2012)
Z. tritici	*Triticum*	France	28–85 × 1.5–2	(0–)3	Quaedvlieg et al. (2011)
Z. verkleyi	*Poa*	Netherlands	(30–)40–65(–80) × (2–)2.5(–3)	1–6(–12)	Present study

Colour illustrations. *Poa annua* growing next to the roadside in Houten; colony sporulating on synthetic-nutrient poor agar; conidiogenous cells and conidia with microcyclic conidiation and phragmoconidia. Scale bars = 10 µm.

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