

# Occurrence of Rust Disease Caused by *Puccinia oxalidis* on *Oxalis triangularis* in the Czech Republic – Short Communication

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## Abstract

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This is the first report of *Puccinia oxalidis* causing leaf spot diseases on ornamental *Oxalis triangularis* subsp. *papilionaceae* cv. *Atropurpurea* in Moravia, Czech Republic. The macroscopic symptoms and microscopic features are described.

**Keywords:** leaf spot; ornamental plants; Purple Shamock

*Oxalis triangularis* A. St.-Hil. (syn. *Oxalis regnellii*) is a bulbous perennial with a low, moderate growth habit. The cultivated variety *O. triangularis* subsp. *papilionaceae* cv. *Atropurpurea* with purple-black, triangular-shaped leaves is highly popular as an ornamental pot plant. In October 2012, rust-infected leaves were sampled from 50 plants of *O. triangularis* subsp. *papilionaceae* cv. *Atropurpurea* in a garden centre in Brno in South Moravia.

## Description

Infected leaves with light green spots, later with sporadic pustules in the middle, on the adaxial surface. The abaxial surface of the infected leaves covered with powdery golden yellow to orange yellow pustules (0.2–0.5 mm in diameter) often arranged in circles. Heavily infected leaves dying.

Uredinia paraphysate, urediniospores globose (15–17 µm in diameter) or elliptical (length 15–20 µm, width 11–14 µm), sometimes elongate (length 20–22 µm, width 11–13 µm). Spore walls very thin, finely echinulate, colourless. Telia sporadically present (0.2–0.4 mm in diameter) on abaxial leaf side, waxy, pale cream. Teliospores slightly yellowish pigmented, ellipsoid

to oblong, length 16–22 µm, width 9–12 µm, occasionally apiculate, slightly constricted or not at the septum, with a hyaline pedicel up to 5–34 µm long. Spore walls thin, colourless, smooth.

Based on the morphological characters and the host genus *Oxalis*, this rust pathogen was identified as *Puccinia oxalidis* Dietet & Ellis (1895). *Puccinia oxalidis* is a heteroecious long-cycled rust with uredinia and telia on *Oxalis* spp. and spermogonia and aecia on various species of *Beberis* L. (Berberidaceae). It is native in the southern part of the United States of America, Mexico, and South America, and has been reported in Australia, West Indies, Macaronesia, Morocco, Japan, in south Europe and the UK (LONG & HARSCH 1918; GJAERUM & DENNIS 1976). The rust has been reported e.g. on *Berberis aquifolium* Pursh, *B. repens* Lindl. (syn. *Mahonia repens*), *B. trifoliolata* Moric, *O. articulata* Savigny, *O. bowiei* Lindl., *O. corniculata* L., *O. debilis* Kunth., *O. debilis* var. *corymbosa* (DC.) Lourteig, syn. *O. corymbosa*), *O. drummondii* A. Gray (syn. *O. amplifolia*), *O. griffithii* Edgeworth et Hook. f., *O. latifolia* Kunth., *O. hirta* L., *O. incarnata* L., *O. intermedia* Rich (syn. *Ionoxalis intermedia* (A.Rich.) Small), *O. latifolia* Kunth. (syn. *O. martiana* Zucc., *Ionoxalis martiana* (Zucc.)

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Small), *O. pes-caprae* L., *O. pupurea* L., *O. rubra* A. St.-Hill., *O. spiralis* G. Don, *O. triangularis* A. St.-Hill. (syn. *O. regnellii* Mig.), *O. tuberosa* Molina, *O. violacea* L. (syn. *Ionoxalis violacea* (L.) Small (GJAERUM & DENNIS 1976; VERSLUYS 1977; FARR & ROSSMAN 2013).

Because *O. triangularis* subsp. *papilionaceae* cv. *Atropurpurea* does not grow in outdoor conditions, this rust pathogen does not pose a pathogen threat in the Czech Republic and for the time being it is not necessary to consider suitable methods of control. *Puccinia oxalidis* may occasionally occur in garden centres where it can be treated with fungicides if necessary. To my knowledge, this is the first report of *Puccinia oxalidis* on *Oxalis triangularis* subsp. *papilionaceae* cv. *Atropurpurea* in the Czech Republic.

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