

U.S. Department of Agriculture, Agricultural Research Service
Systematic Mycology and Microbiology Laboratory - Nomenclature Fact Sheets

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***Urocystis agropyri* (Preuss) A.A. Fisch. Waldh. 1867**

Preuss (1848) published the name *Uredo agropyri* for a smut occurring on a host plant labelled with the German common name "Quackengras"; authors have interpreted this as the grass currently named *Elytrigia repens* (= *Agropyron repens* = *Triticum repens*). Fischer von Waldheim (1867) transferred this fungus from *Uredo* to *Urocystis*, citing as basionym *Uredo agropyri* Pers., however, there is no record that Persoon ever published this name. Körnicke (1877) speculated that the author attribution was the result of a typographical error. The incorrect author citation does not invalidate the name (Art. 33.4), and it should be cited as *Urocystis agropyri* (Preuss) A.A. Fisch. Waldh. 1867.

When making the new combination *Urocystis agropyri*, Fischer von Waldheim (1867) added a description of a smut on the host *Carex acuta* (Cyperaceae); however, this smut is now considered to be a distinct species, *Urocystis fischeri* Körn. ex G. Winter 1881. Despite being applied by Fischer von Waldheim to the smut of *Carex*, the name *Urocystis agropyri* refers to the flag smut of Poaceae, typified by the type of its basionym, *Uredo agropyri* (Art. 7.4).

Schröter (1869) published the name *Urocystis agropyri* (also as (Pers.)), listing *Triticum repens* (= *Elytrigia repens*) as host. Körnicke (1877) argued that the name *Urocystis agropyri* (Preuss) A.A. Fisch. Waldh. 1867 should be rejected because the description refers to a different fungus than the basionym cited, and instead the name *Urocystis agropyri* (Preuss) J. Schröt. 1869 should be the accepted name for the flag smut of Poaceae, but this is counter to the Code (Art. 7.4), unless the type were to be conserved. *Urocystis agropyri* (Preuss) A.A. Fisch. Waldh. 1867 is frequently cited erroneously as *Urocystis agropyri* (Preuss) J. Schröt. 1869 in the literature.

Körnicke (1877) suggested that the smut described by Fischer von Waldheim on *Carex acuta* under the name *Urocystis agropyri* be named *Urocystis fischeri*, retaining the name *Urocystis agropyri* for the flag smut of Poaceae. He failed to provide a description, therefore, it fell to Winter (1881) to provide a description and validate the name, as *Urocystis fischeri* Körn. ex G. Winter 1881.

Using a morphological species concept, Fischer (1953) rejected species distinctions based on host specificity within the Poaceae and treated an extensive list of *Urocystis* species, including *Urocystis tritici*, as synonyms of *Urocystis agropyri*. This has not been accepted by most later authors (Purdy 1965, Scholz 1988, Vanký 1994, Denchev 2001, but see Mordue & Ainsworth 1984).

***Urocystis agropyri* (Preuss) A.A. Fisch. Waldh. 1867 (Ustilaginomycetes, Urocystales)**

≡ *Uredo agropyri* Preuss 1848

≡ *Polycystis agropyri* (Preuss) J. Schröt. 1877

≡ *Tuburcinia agropyri* (Preuss) Liro 1922

[*Urocystis agropyri* (Preuss) J. Schröt. 1869] Note: Isonym.

Tuburcinia agropyri-juncei Vienn.-Bourg. 1954 Note: Invalid name, no latin diagnosis (nom. nud.).

Urocystis agropyri-juncei (Vienn.-Bourg.) H. Zogg 1986 Note: Nom. inval.

= *Tuburcinia elymi* Cif. 1931

≡ *Urocystis elymi* (Cif.) Schwarzman 1960

[*Tuburcinia occulta* [var.] *agropyri* (Preuss) Cif. 1963] Note: Invalid via ICBN Art. 35.1.

= *Urocystis preussii* J.G. Kühn 1874

Notes: Isonym of (Preuss) J. Schröt. 1869. The basionym was originally attributed to Persoon, apparently due to a typographical error (Körnicke 1877). The original type specimen for *Uredo agropyri* is described from the host Quackengras (German) = *Elytrigia repens* (= *Agropyron repens* or *Triticum repens*). Fischer von Waldheim was the first to use the combination *Urocystis agropyri*, applying it to a fungus on *Carex acuta*, but citing as basionym *Uredo agropyri* on *Elytrigia repens*. The name *Urocystis agropyri* must be typified by the type of the basionym (i.e. the fungus on *Elytrigia*) despite being applied by Fischer von Waldheim to the fungus on *Carex* (Art. 7.4). Körnicke assigned the new name *Urocystis fischeri* to the fungus described by Fischer von Waldheim on *Carex acuta*, but did not provide a description (nom. nud.). The name was later validated by Winter, as *Urocystis fischeri* Körn. ex G. Winter 1881. Fischer (1953), using a morphological species concept, rejected species distinctions based on host specificity within the Poaceae and placed *Urocystis tritici* as a synonym of *Urocystis agropyri*, but this has not been universally accepted by later authors (e.g. Purdy 1965, Scholz 1988, Vanký 1994, Denchev 2001). *Urocystisocculta* is a partial synonym (auct. pro parte).

Distribution: Cosmopolitan.

Substrate: Leaf blades, sometimes glumes and rhizomes.

Disease Note: Flag smut.

Host: *Urocystis agropyri* sensu stricto is restricted to wheatgrasses; *Agropyron* spp., *Elytrigia* spp. *Urocystis agropyri* in the broader concept of Fischer (1953) includes the flag smuts on other grasses (Poaceae).

Supporting Literature:

Denchev, C.M. 2001. Class Ustomycetes (Orders Tilletiales, Ustilaginales, and Graphiolales). Fungi Bulgaricae 4: 1-286.

Fischer, G.W. 1953. Manual of the North American Smut Fungi. Ronald Press Company, New York, 343 pages.

Mordue, J.E.M., and Ainsworth, G.C. 1984. Ustilaginales of the British Isles. Mycol. Pap. 154: 1-96.

Purdy, L.H. 1965. Flag smut of wheat. Bot. Rev. (Lancaster) 31: 565-606.

Scholz, H., and Scholz, I. 1988. Die Brandpilze Deutschlands (Ustilaginales). Englera 8: 1-691.

Vanký, K. 1994. European Smut Fungi. Gustav Fischer Verlag, Stuttgart, 570 pages.

Vanký, K. 2011. Smut Fungi of the World. APS Press, St. Paul, Minnesota, 1458 pages.

Zogg, H. 1985. Die Brandpilze Mitteleuropas unter Besonderer Berücksichtigung der Schweiz. Cryptog. Helv. 16: 1-277.

Verified By: Drew On Dec 21, 2011

***Urocystis tritici* Körn. 1877 (Ustilaginomycetes, Urocystales)**

≡ *Tuburcinia tritici* (Körn.) Liro 1922

= *Tuburcinia hispanica* Syd. 1924

≡ *Urocystis hispanica* (Syd.) Zundel 1953

Distribution: Cosmopolitan in warmer areas.

Disease Note: Smut.

Host: *Aegilops*, *Triticum* (Poaceae).

Supporting Literature:

Vanký, K. 2011. Smut Fungi of the World. APS Press, St. Paul, Minnesota, 1458 pages.

Verified By: Drew On Jan 06, 2012

Urocystis fischeri Körn. ex G. Winter 1881 (Ustilaginomycetes, Urocystales)

≡ *Tuburcinia fischeri* (Körn. ex G. Winter) Liro 1922 Note: Genus rejected; *Urocystis* g. cons.

Urocystis fischeri Körn. 1877 Note: Originally intended to serve as a replacement name for *Urocystis agropyri* (Preuss) A.A. Fisch. Waldh., but without description, invalid name (nom. nud.).

= *Tuburcinia rigida* Liro 1939

≡ *Urocystis rigida* (Liro) Zundel 1953

Notes: The invalid name *Urocystis caricis* Ule 1884 (nom. nud., no description) has also been applied to this fungus. Fischer von Waldheim was the first to use the combination *Urocystis agropyri*, applying it to the flag smut on *Carex acuta*, but citing as basionym *Uredo agropyri*, the flag smut on *Elytrigia repens*. The name *Uromyces agropyri* must be typified by the type of the basionym (i.e. the smut of *Elytrigia*) despite being applied by Fischer von Waldheim to the *Carex* smut (Art. 7.4). Körnicke assigned the new name *Urocystis fischeri* to the fungus described by Fischer von Waldheim on *Carex acuta*, but did not provide a description (nom. nud.). Winter later provided a description and validated the name *Uromyces fischeri* Körn. ex G. Winter 1881.

Distribution: Europe, Asia, North America, Africa (Kenya).

Substrate: Leaves.

Disease Note: Flag smut.

Host: *Carex* spp. (Cyperaceae).

Supporting Literature:

Lindeberg, B. 1959. Ustilaginales of Sweden. Symb. Bot. Upsal. 16: 1-175.

Scholz, H., and Scholz, I. 1988. Die Brandpilze Deutschlands (Ustilaginales). Englera 8: 1-691.

Vanký, K. 2011. Smut Fungi of the World. APS Press, St. Paul, Minnesota, 1458 pages.

Zogg, H. 1985. Die Brandpilze Mitteleuropas unter Besonderer Berücksichtigung der Schweiz. Cryptog. Helv. 16: 1-277.

Verified By: Drew On Jan 13, 2012

Written by Erica Cline, December 2005