Couchgrass

Species (Family)

Agropyron repens (L.) Beauv. (Gramineae)

Synonym(s)

Agropyron, Dogs Grass, Quackgrass, Triticum, *Triticum repens* L., Twitchgrass

Part(s) Used

Rhizome

Pharmacopoeial and Other Monographs

BHP 1996[G9]
BP 2001[G15]
Complete German Commission E[G3]
Martindale 32nd edition[G43]
PDR for Herbal Medicines 2nd edition[G36]
Ph Eur 2002[G28]
WHO volume 1 1999[G63]

Legal Category (Licensed Products)

GSL (Agropyron)[G37]

Constituents[G2,G7,G40,G41,G53,G64]

Carbohydrates Fructose, glucose, inositol, mannitol, mucilaginous substances (10%), pectin, triticin.

Cyanogenetic glycosides Unspecified.

Flavonoids Tricin and other unidentified flavonoids.

Saponins No details documented.

Volatile oils 0.05%. Agropyrene (95%). Presence of agropyrene has been disputed,[1] with the oil reported to consist mainly of the monoterpenes carvacrol, *trans*-anethole, carvone, thymol, menthol, menthone and *p*-cymene and three sesquiterpenes.

Other constituents Fixed oil, vanillin glucoside.

Food Use

Couchgrass is listed by the Council of Europe as a natural source of food flavouring (category N2). This category indicates that couchgrass can be added to foodstuffs in small quantities, with a possible limitation of an active principle (as yet unspecified) in the final product.[G16] In the USA, couchgrass is listed as GRAS (Generally Recognised As Safe).[G41]

Herbal Use

Couchgrass is stated to possess diuretic properties. It has been used for cystitis, urethritis, prostatitis, benign prostatic hypertrophy, renal calculus, lithuria, and specifically for cystitis with irritation or inflammation of the urinary tract.[G2,G7,G64]

Dosage

Dried rhizome 4–8 g or in decoction three times daily.[G7]

Liquid extract 4–8 mL (1 : 1 in 25% alcohol) three times daily.[G7]

Tincture 5–15 mL (1 : 5 in 40% alcohol) three times daily.[G7]

Pharmacological Actions

In vitro and animal studies

Couchgrass is stated to exhibit diuretic and sedative activities in rats and mice, respectively.[G41] Broad antibiotic activity has been documented for agropyrene and its oxidation product.[G41] An ethanolic extract was found to exhibit only weak inhibition (14%) of carrageenan-induced inflammation in the rat paw.[2]

Couchgrass has been reported to be phytotoxic with flavonoid components implicated as the active constituents.[3]

Side-effects, Toxicity

None documented for couchgrass. An unspecified cyanogenetic glycoside has been reported as a constituent of couchgrass, although no further details were located.[G7]

Contra-indications, Warnings

In view of its reputed diuretic action, excessive or prolonged use of couchgrass should be avoided since this may result in hypokalaemia.

Pregnancy and lactation In view of the limited pharmacological and toxicological data, the use of couchgrass during pregnancy and lactation should be avoided.

Pharmaceutical Comment

Limited chemical data are available for couchgrass and little scientific evidence was located to justify the traditional herbal uses. Agropyrene is regarded as the main active principle in couchgrass on account of its antibiotic effect, although the presence of agropyrene in the volatile oil has been disputed.[1] In view of the lack of toxicity data, excessive ingestion should be avoided.

References

See also General References G2, G3, G9, G10, G15, G16, G31, G36, G37, G40, G41, G43, G48, G53 and G64.

1 Boesel R, Schilcher H. Composition of the essential oil of *Agropyrum repens* rhizome. *Planta Med* 1989; 55: 399–400.

2 Mascolo N. Biological screening of Italian medicinal plants for anti-inflammatory activity. *Phytother Res* 1987; 1: 28–29.

3 Weston LA *et al.* Isolation, characterization and activity of phytotoxic compounds from quackgrass [*Agropyron repens* (L.) Beauv.]. *J Chem Ecol* 1987; 13: 403–421.