

## KEY TO SPECIES OF *CYPERUS* (GALINGALES) ESTABLISHED OR LIKELY TO ARRIVE IN BRITAIN

Many species of *Cyperus* have been recorded in Britain in the past; the overwhelming majority were wool aliens or dockland casuals, impersistent and mostly not seen for many years. A much smaller number of non-natives are already established in Britain, occur as natives or established aliens in nearby parts of Europe, or are becoming cosmopolitan weeds extending to temperate regions. The native and established species and most likely contenders for establishment are covered here.

- |    |  |                               |
|----|--|-------------------------------|
| 1  | Glumes inserted in 3 ranks, whitish with a green central stripe, prolonged into an awn-like point; dwarf plant; inflorescence in a subspheric corymb c. 10mm diameter; flowering stem generally longer than leaves; bracts broadened at base.....      | <b><i>C. michelianus</i></b>  |
| 1' | Glumes inserted in two ranks, or spiral; inflorescence with 0-25 rays; main stems 1-150(-200) cm.....  | 2                             |
| 2  | Nutlet lenticular or plano-convex; stigmas 2 or 3.....   | 3                             |
| 2' | Nutlet trigonous; stigmas generally 3.....   | 4                             |
| 3  | Nutlet with the broad (flatter) face towards the stem; annual tufted plant without rhizomes; glumes 0.5-0.8mm broad, dark to reddish brown with green 3-veined keel, usually with a mucro 0.1mm long; stigmas 2 or 3; nutlets white to pale brown..... | <b><i>C. fuscus</i></b>       |
| 3' | Nutlet with the narrow (more curved or ridged) face towards the stem; annual tufted plant with short or no rhizomes; glumes 1-1.5mm broad, yellowish with greenish 1-veined keel, obtuse; stigmas 2; nutlets brownish-black.....                       | <b><i>C. flavescens</i></b>   |
| 4  | Stamens 1.....   | <b><i>C. eragrostis</i></b>   |
| 4' | Stamens 2-3.....   | 5                             |
| 5  | Stems with brownish basal sheaths but without leaf blades, 60-200cm; inflorescence with 11-25 flat bracts exceeding the inflorescence and 20-25 rays up to 6cm long; glumes greenish becoming pale yellow or brown.....                                | <b><i>C. involucratus</i></b> |
| 5' | Plant with leaves.....   | 6                             |
| 6  | Axis of flowering spike not winged; annual plants lacking stolons.....   | 7                             |
| 6' | Axis of flowering spike winged; annual or perennial plants with stolons.....   | 8                             |
| 7  | Rhizomes absent; glumes 1-1.3mm long, ovate, acute or obtuse at apex, usually with a mucro 0.1mm long; nutlets white to pale brown; stems generally 2-35cm.....  | <b><i>C. fuscus</i></b>       |
| 7' | Rhizomes short; glumes 0.5-0.7mm long, obovate to suborbicular, obtuse at apex, not mucronate; nutlets pale yellow or yellowish-green; flowering stems 2-7.5cm.....  | <b><i>C. difformis</i></b>    |
| 8  | Glumes concave, pale yellow to yellowish-brown, with distinct veins.....   | <b><i>C. esculentus</i></b>   |
| 8' | Glumes keeled, reddish-brown or dark brown, with indistinct veins.....   | <b><i>C. longus</i></b>       |

***Cyperus michelianus* (L.) Link (Michaux's Galingale)** is a native plant of grassland and open habitats in alluvial flood plains. In France it is frequent along much of the Loire and has been recorded in Brittany. It has never been recorded in Britain, where most rivers in the lowland zone would probably be too heavily engineered to sustain it. Although not considered a weedy species, it is a good coloniser and might be introduced to wetlands by birds. It is a distinctive small species with keeled more or less plicate leaves.



*Cyperus michelianus* Photo: Jacques Maréchal [CC BY-SA], via Tela Botanica

***Cyperus fuscus* L. (Brown Galingale)** is a rare British native of damp bare ground around ponds and ditches in a few counties of southern England, where it was once commoner on grazed "village green" commons. Most of the British population is on two sites in Hampshire. It is much commoner and more widespread on the near continent, especially in the main river basins, but even here has suffered declines.



*Cyperus fuscus* Photo: Martin Rand [CC BY-SA]

***Cyperus difformis* L. (Small-flowered Galingale)** is a pan-tropical species which is of rare occurrence in southern Europe, for instance around the Rhone delta where it is a weed of rice crops. It seems an unlikely candidate for naturalisation in Britain, except that there is a recent record from the Thames Estuary area. Apart from the difference in size of floral parts and glume shape, it differs from *C. fuscus* in the more densely packed, globular heads of spikes.



*Cyperus difformis* Photo: Mathieu MENAND [CC BY-SA], via Tela Botanica

***Cyperus (=Pycneus) flavescens* L. (Yellowish Galingale)** is sub-cosmopolitan and is widely distributed in France, but in huge decline there. Its ecology and habit are very similar to our native *C. fuscus*, and on the Continent it seems to have suffered the same fate as the latter species with us through loss of habitat. It has never been recorded in Britain but is included here because of its possible confusion with *C. fuscus* should an introduction occur. Apart from the characters given in the key, the yellowish colour of the flowering spikes and their narrowly elliptical, even more flattened shape will help to distinguish them.



*Cyperus flavescens* Photo: Marie-Reine DUBOIS [CC BY-SA], via Tela Botanica

***Cyperus eragrostis* Lam. (Pale Galingale)** is a native of tropical America grown widely in gardens, now appearing as an escape over the whole of the southern half of Britain and Ireland in usually moist rough ground and grassland. It is widely naturalised on the near Continent in grassland communities also found here, and may become something of a nuisance plant in time. The single stamen is a good technical distinction, but the fairly robust habit, combined with the presence of basal and lower stem leaves and greenish flowering spikes when young, is distinctive.



*Cyperus eragrostis* Photo: Mathieu MENAND [CC BY-SA], via Tela Botanica

***Cyperus involucratus* Rottb. (Umbrella Sedge)** originates from southern Africa and is frequently grown as a pond ornamental especially in larger parks and gardens. It is naturalising in southern Europe and has been recorded in Britain from a number of places as a garden outcast or escape as far north as North Lancashire. Since it is not covered in floras and field guides, it might be misrecorded as *C. eragrostis* but apart from the single stamen of the latter, the leafless stem of *C. involucratus* and its more numerous bracts (10-25 as against 10 or fewer), all more or less equal in length, will distinguish it. A similar species, *C. alterniflorus* L. from East Africa, is also grown as an ornamental, but more rarely. There seems to be some naming confusion between these two in horticultural circles.



*Cyperus involucratus* Photo: Yoan MARTIN [CC BY-SA], via Tela Botanica

***Cyperus longus* L. (Galingale)** is considered a native in coastal wetlands in SW and S England and in Wales, but is much more often recorded as an introduction, as far north as central Scotland. It is sold as a garden pond plant. Its stature (up to 1.5m) and long spikes with dark or reddish brown glumes are distinctive.



*Cyperus longus* Photo: Martin Rand [CC BY-SA]

***Cyperus esculentus* L. (Tiger Nut)** is a more or less cosmopolitan food plant in warm temperate to subtropical regions. It is grown in Spain and rarely elsewhere in southern Europe; the edible “nuts” are in fact the small tubers. There seems to be a single modern record in Britain, from the Gloucestershire side of the Avon in Bristol. It is fairly unlikely to establish itself in Britain even with climatic warming, as high sunshine levels are also important for growth. Its long linear spikes with yellowish glumes are distinctive.



*Cyperus esculentus* Photo: Daniela Longo