

CHLORIS GAYANA

Rhodes Grass

A tufted, stoloniferous perennial, up to 1 m tall. *Culms* usually branched, slightly kneeed at the base, smooth, the leafy stolons flattened, tough and wiry, readily rooting and shooting at the nodes. *Nodes* hairless, numerous, often branched and sometimes also rooted. *Leaves* well distributed. *Leaf sheaths* smooth, hairless, striate, flattened and keeled, about as long as the internodes. *Ligule* reduced to a membranous rim with hairs on the edges. *Leaf blades* up to 50 cm long, 0.5–1 cm wide when flattened; pointed, folded towards the base and tapering gradually to a fine point, bearing sparse, long hairs on the upper surface, especially towards the base, slightly rough on the upper surface.

Inflorescence a panicle of 6–15 spikes, 5–10 cm long, arranged digitately in one or two whorls, brown, becoming straw-coloured at maturity, the spikelets arranged in two overlapping rows on either side of the rachis. *Spikelets* (S) all sessile and similar, breaking up at maturity and falling entire. *Florets* 2–3, the lower floret bisexual and fertile, the upper usually male, rarely bisexual, a third remnant floret sometimes present. *Glumes* (G_1 , G_2) persistent, very unequal; the lower glume (G_1) 1–1.5 mm long, about $\frac{1}{2}$ the length of the spikelet; the upper (G_2) 2–3 mm long, about $\frac{3}{4}$ to equal the length of the spikelet, 1-nerved, strongly keeled. *Lemma* (L_1) of the lower male floret slightly 2-toothed, 3-nerved, the lateral nerves marginal, minutely hairy along the marginal nerves and bearded on the margin near the apex, the callus short, blunt and minutely bearded, the awn half to equal the length of the lemma, rough, straight. *Palea* (P_1) narrow, membranous, 2-keeled and slightly 2-toothed at the apex. *Anthers* 3, 1.5 mm long. *Lemma* (L_2) of the upper bisexual floret shorter than L_1 , markedly truncate, 3-nerved, with a very short awn or bristle, hairless. *Palea* (P_2) similar to P_1 , but smaller. *Anthers* 3, 1–1.5 mm long.

This grass is naturalized and cultivated widely in eastern Queensland, but has its origin in southern Africa. It is highly valued as an agronomic species. In Queensland, there are several cultivars recognized: Commercial, Samford, Callide and Katamboora. Rhodes grass grows on a wide variety of soils in the 700–1000 mm rainfall zone. However, it achieves its best performance on the more fertile, soft-wood scrub, red loams and brigalow soils. It is moderately drought-hardy, withstands heavy grazing and is very tolerant of burning. Several other species of *Chloris* are important as native forage grasses or weeds. Clifford and Everist (1964) have reported the occurrence of a *Chloris* x *Cynodon* hybrid (x *Cynochloris macivorii*) that has some potential as a turf grass. Another recently described putative hybrid is *C. reynoldensis* (Simon, 1980a, p. 36).

REFERENCES

- Bailey (1902),¹ pp. 1893-96; Everist (1935, 1937, 1938),² (Key to Queensland species); Hitchcock (1950),³ p. 527; Gardner (1952),⁴ pp. 216-22; C.S.I.R.O. Australia (1967),⁵ pp. 94-95; Commonwealth Bureau of Pastures and Field Crops (1968c);⁶ Bogdan (1969);⁷

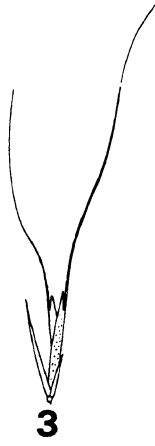
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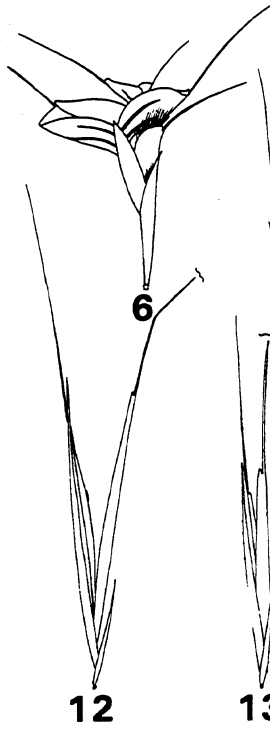
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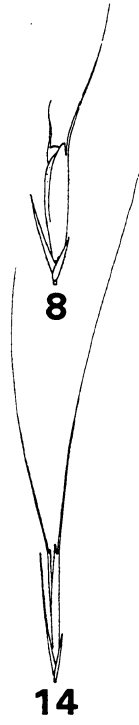
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Burbidge and Gray (1970),⁸ p. 60; Lazarides (1970),⁹ pp. 82-89; Willis (1970),¹⁰ pp. 163-64; Beadle *et al.* (1972),¹¹ pp. 645-46; Lazarides (1972);¹² Black (1978),¹³ pp. 203-7; Jessop (1981),¹⁴ pp. 464-65.

KEY TO SPECIES

(incl. *Austrochloris*, *Enteropogon* and *Eustachys* spp.)

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| 1. Head usually with more than 30 spikes; lemmas awnless (evergreen chloris) | <i>Eustachys distichophylla</i> (11)* ^{1,2,12} |
| Head always with less than 30 spikes; lemmas awned. | 2 |
| 2. Lemma of fertile floret laterally compressed, keeled on back. | 3 |
| Lemma of fertile floret dorsally compressed, flat to rounded on back. | 11 |
| 3. Spikelets narrowing towards tip. | 4 |
| Spikelets broadening towards tip. | 5 |
| 4. Perennial. Spikes 7-20 cm long (slender chloris) | <i>C. divaricata</i> (3) ^{1,2,11,12} |
| Annual. Spikes 4-7 cm long (comb chloris) | <i>C. pectinata</i> (5) ^{1,2,4,9,12,13,14} |
| 5. Prominent hairs along edge of first lemma. | 6 |
| Hairs, if present on edge of first lemma, not prominent. | 9 |
| 6. Spikelets 2-awned. | 7 |
| Spikelets 3-5-awned; awns purple-pigmented. | 8 |
| 7. Spikelets straw-coloured; awns twice lemma length. Common annual (feathertop Rhodes grass) | <i>C. virgata</i> (9) ^{2,4,9,11,12,13,14} |
| Spikelets brown; awns less than lemma length. Rarely encountered North American perennial. | <i>C. ciliata</i> (2) ³ |
| 8. Spikelets 6 mm long (excluding awns) with a well-developed, 2.5 mm callus; second and third lemma sharply recurved at maturity (winged chloris) | <i>C. scariosa</i> (6) ^{9,12} |
| Spikelets 3 mm long (excluding awns); callus less than 0.5 mm; lemmas not recurved at maturity (purpletop chloris) | <i>C. barbata</i> (1) ^{1,2,9,12} |
| 9. Fertile lemma broad, embracing second floret (tall chloris) | <i>C. ventricosa</i> (8) ^{1,2,10,12} |
| Fertile lemma truncate, not embracing second floret, which is clearly visible. | 10 |
| 10. Second lemma truncate; awns generally exceeding spikelet length (windmill grass) | <i>C. truncata</i> (7) ^{1,2,4,8,10,11,12,13,14} |
| Second lemma not truncate; awns generally shorter than spikelet (Rhodes grass) | <i>C. gayana</i> (4) ^{1,4,5,6,7,10,11,12,13} |
| 11. Glumes about twice length of florets, nearly equal; awns on lemmas not obvious | <i>Austrochloris dichanthiodes</i> (10) ¹² |
| Lower glume always shorter than floret, about ½ length of upper glume; awns conspicuous | 12 |
| 12. Basal leaf sheaths distinctly keeled; leaves fine, less than 1.5 mm wide, usually rolled. | <i>Enteropogon unispiceus</i> (15) ^{1,2,12} |
| Basal leaf sheaths rounded on back; leaves usually flat, more than 1.5 mm wide. | 13 |

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| <p>13. Lemma of lower floret 3–6 mm long; spikes usually 1–6.
 Lemma of lower floret 7–9 mm long; spikes usually 4–14
 (curly windmill grass)</p> | <p>14
 <i>E. acicularis</i>(12)^{1,2,4,9,10,12,14}</p> |
| <p>14. Lemma of lower floret 3–3.5 mm long; spikes more or less
 flaccid.
 Lemma of lower floret 3.5–6 mm long; spikes stiff.</p> | <p><i>E. minutus</i>(14)¹²
 <i>E. dolichostachyus</i>(13)¹²</p> |

* Numbers in parentheses refer to spikelet illustrations on page 156.