

ARISTIDA ARMATA

Branched Wiregrass

A strongly tufted, wiry perennial. *Culms* up to 90 cm tall, erect, smooth and hairless, wiry and somewhat reed-like, sometimes branched at the lower nodes. *Nodes* 3-4, hairless, darkly pigmented, not swollen. *Leaves* sparse, mostly on the culms. *Leaf sheaths* generally longer than the internodes, loose, becoming gaping, rather persistent, smooth, hairless, very firm. *Ligule* a short, hairy rim with some longer hairs on the lateral margins. *Leaf blades* flat only at the very base, up to 20 cm long and 2.5 mm wide, becoming rolled inwards above, firm, smooth or almost smooth, the nerves prominent.

Inflorescence an open panicle, 30-50 cm long and up to 15-20 cm wide, erect but rather lax and interrupted, the branches rather flexuous, at first more or less erect but later spreading out from the axis; spikelets few, the pedicels fine, straight and of varying length, flattened and rough along the margins. *Spikelets* (S) 10 mm long (excluding the awns), pale-yellowish, at maturity breaking up with the floret falling free from the glumes, the glumes usually falling separately, the lower glume first. *Florets* 1, bisexual. *Glumes* (G₁, G₂) firmly membranous, slightly keeled, slightly unequal, yellowish; the lower glume (G₁) 10-14 mm long, 1-nerved, narrow, tapering to a fine point; the upper (G₂) shorter than G₁, 8-12 mm long, 1-3-nerved, the tip almost 2-lobed with the central nerve produced into a short point between the lobes. *Lemma* (L) about 8-11 mm, 3-nerved, mottled with brown-purple spots, firm in texture, scabrous with inrolled margins enclosing the flower, the callused base densely bearded, the tip produced into 3 long, rough awns, which spread out at maturity, the central one up to 20 mm, the lateral ones slightly shorter and finer. *Palea* (P) reduced to a membranous, nerveless structure about 1 mm long, rounded at the tip. *Anthers* 3, 1 mm long.

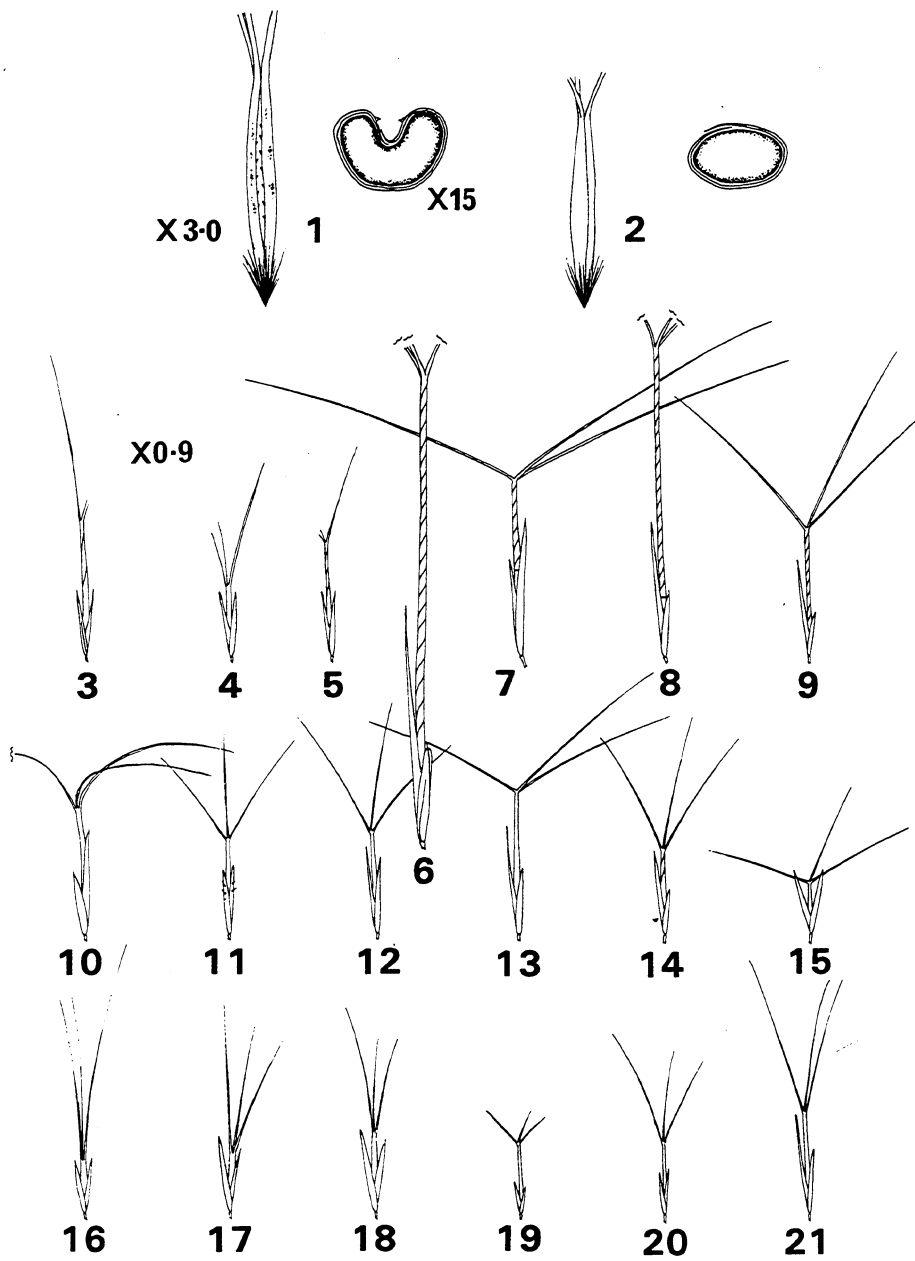
This is one of the many wire or 3-awned grasses that are particularly abundant in Queensland. Like this species, these grasses often inhabit rather poor or dry sites and provide only poor grazing. Most species are stemmy and produce little useful forage. Their sharp, barbed "seeds" are both unpleasant and undesirable, often afflicting both man and beast.

REFERENCES

Bailey (1902),¹ pp. 1873-75; Henrard (1929, 1932);² Blake (1940d)³ pp. 169-78; Blake (1944a),⁴ pp. 16-18; Gardner (1952),⁵ pp. 163-169; Blake (1969b),⁶ p. 2; Burbidge and Gray (1970),⁷ p. 54; Lazarides (1970),⁸ pp. 40-57; Willis (1970),⁹ pp. 179-80; Beadle *et al.* (1972),¹⁰ pp. 657-58; Black (1978),¹¹ pp. 130-34; Lazarides (1980b),¹² (Key to Australian species); Jessop (1981),¹³ pp. 448-53.

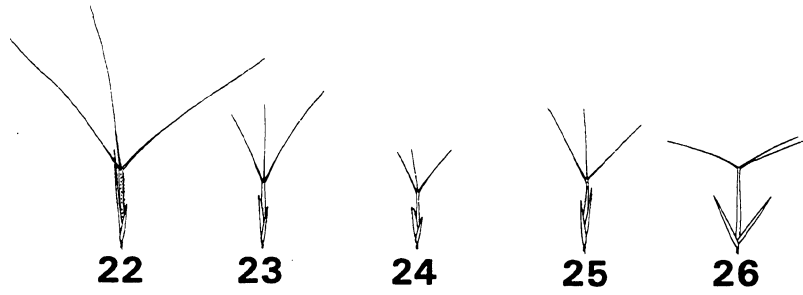
KEY TO SPECIES

Note: It is necessary to work with mature spikelet material when using this key. When measuring lemma lengths, the callus should be included.

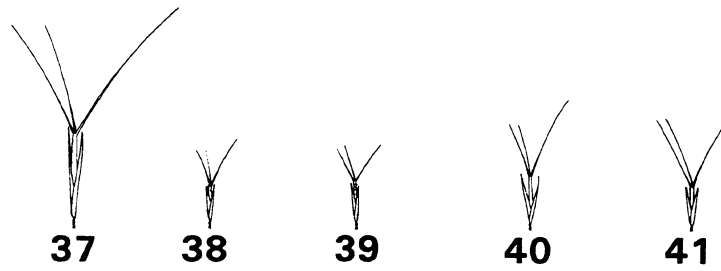
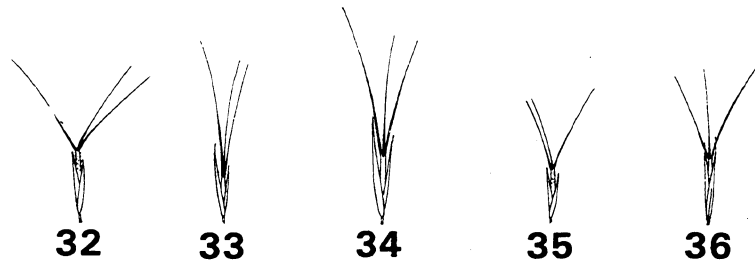
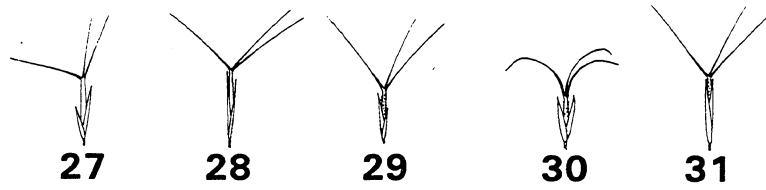


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|-----|---|---|
| 1. | Lateral awns $\frac{1}{2}$ or less than $\frac{1}{2}$ as long as and considerably finer than central awn. | 2 |
| | Lateral awns more than $\frac{1}{2}$ as long as or equal to central awn, not markedly finer. | 4 |
| 2. | Lower internodes more or less densely hairy or woolly. Leaf blades flat. | 3 |
| | Internodes always hairless. Leaf blades fine, pointed. | <i>A. spuria</i> (3)* ^{2,4,12} |
| 3. | Internodes more or less covered with wool, shedding at maturity. Lateral awns $\frac{1}{3}$ to $\frac{1}{2}$ length of median awn. | <i>A. queenslandica</i> (4) ^{2,12} |
| | Internodes (at least lower ones) densely hairy. Lateral awns less than $\frac{1}{4}$ length of median awns, bristle-like or sometimes absent. | <i>A. utilis</i> (5) ^{2,4,12} |
| 4. | Pronounced twisted column at apex of lemma. | 5 |
| | Column absent (in <i>A. longicollis</i> , lemma is extended into a 2 mm long, barely twisted beak). | 13 |
| 5. | Column more than 50 mm long; lower glume 3-5-nerved (northern kerosene or corkscrew grass) | <i>A. hygrometrica</i> (6) ^{2,5,12} |
| | Column usually less than 50 mm long; if slightly exceeding 50 mm, then lower glume 1-nerved. | 6 |
| 6. | Column breaking off at base when mature, articulation point obvious. | 7 |
| | Column not breaking off at base, no articulation point evident. | 9 |
| 7. | Lower glume longer than upper. | <i>A. polyclados</i> (7) ^{2,12} |
| | Lower glume shorter than upper. | 8 |
| 8. | Lemma more or less equal to shorter glume. Plant 30-60 cm high; panicle (incl. awns) 10-20 cm long, erect (erect kerosene grass) | <i>A. browniana</i> (8) ^{2,5,8,11,12,13}
(incl. <i>muelleri</i>) |
| | Lemma about $\frac{1}{2}$ length of shortest glume. Plant 12-30 cm high; panicle 10 cm long, flaccid, drooping (bunched kerosene grass) | <i>A. contorta</i> (9) ^{1,2,5,8,9,11,12,13}
(<i>arenaria</i>) |
| 9. | Mature spikelets with central awn distinctly curved. | <i>A. warburgii</i> (10) ^{3,10,12}
(incl. <i>intricata</i>) |
| | Mature spikelets with central awn straight. | 10 |
| 10. | Upper glume with spreading tubercle-based hairs up to 3 mm long; lower glume slightly longer than upper. | <i>A. pernicioso</i> (11) ^{2,12} |
| | Upper glume without tubercle-based hairs; glumes equal or lower shorter than upper. | 11 |
| 11. | Glumes about equal in length (feathertop wiregrass) | <i>A. latifolia</i> (12) ^{2,5,8,11,12,13} |
| | Lower glume less than $\frac{2}{3}$ length of upper. | 12 |
| 12. | Column 10-20 mm long. | <i>A. holathera</i> (13) ^{2,12} |
| | Column 3-4 mm long. | <i>A. psammophila</i> (14) ^{2,12} |
| 13. | Leaf blades flat, persistent, usually curling like watch-springs with age. | 14 |
| | Leaf blades inrolled, or if flat, usually not curling like watch-springs with age (in <i>A. inaequiglumis</i> , leaves may be somewhat coiled). | 15 |

* Numerals in parentheses refer to spikelet illustrations on pages 104, 106.



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14. Leaf blades 2–2.5 mm wide, a line of hairs present across collar. Glumes 8–11 mm long. *A. ingrata* (15)^{2,12}
 Leaf blades 1.5–2 mm wide, no line of hairs across collar. Glumes 5.5–7.7 mm long. *A. helicophylla*(16)^{2,12,13}
15. Panicles more or less open, branches remote and stiffly spreading, or reflexed or drooping at maturity, naked at base and bearing spikelets only in upper half, or if branched from the very base, branchlets and pedicels widely spreading; sometimes branches at first ascending and afterwards spreading, but in that case, always naked at base or occasionally with a 1–2-flowered, short basal branchlet. 16
 Panicles dense and spike-like or laxly contracted and more or less interrupted, branches and branchlets never widely spreading or drooping but strictly erect and adpressed, bearing spikelets from the very base, or if sometimes lower branches are somewhat naked at base, they are always adpressed with a many-flowered, shorter sessile branchlet at their base. 22
16. Lower glume longer than upper. 17
 Glumes equal, or lower much shorter than upper. 18
17. Lower panicle branches flexuous to stiff, up to 15 cm long; lemma without erect or curved spiny hairs in furrow between margins. *A. acuta*(17)^{3,12}
 Lower panicle branches stiff, spreading, 5 cm long or less; lemma with erect or curved spiny hairs in furrow (branched wiregrass) *A. armata*(18)^{2,12} (incl. *praealta*)
18. Body of lemma clearly longer than glumes. 19
 Body of lemma equal to or shorter than longer glume (sometimes longer in *A. leichhardtiana*). 20
19. Panicle with branches stiffly spreading; lemma exserted above longer glume by 4–6 mm; awns 6–9 mm. Leaves short, stiff, not hairlike (threeawn speargrass) *A. vagans*(19)^{1,2,7,10,12}
 Panicle with branches finely flexuous; lemma exserted above longer glume by 1–3 mm; awns 10–16 mm. Leaves very fine, hair-like, long, flexuous. *A. gracilipes*(20)^{2,6,12}
20. Panicle branches branched from or near base; spikelets distributed through panicle. 21
 Panicle branches naked at base over a long distance; spikelets more or less confined to periphery of panicle (white speargrass) *A. leptopoda*(21)^{1,2,12,13}
21. Panicle about as broad as long; upper glume usually more than 12 mm long. Stems and leaves covered with short hairs. Lemmas rough. *A. obscura*(22)^{2,3,8,11,12,13}
 Panicle longer than broad; upper glume usually less than 12 mm long. Stems and leaves without hairs. Leaves not fine and hair-like. Lemmas smooth. *A. leichhardtiana*(23)^{2,12}
22. Lemma exceeding longer glume. 23
 Lemma equal to or shorter than longer glume. 27

23. Panicles broadly ovate, 3–6 cm long, branches and branchlets short and widely spreading, spikelets not congested (many-headed wiregrass) *A. caput-medusae*(24)^{2,12}
 Panicles very narrow, contracted, dense or spike-like, branchlets and spikelets strictly erect or adpressed. Sometimes panicle somewhat loose and interrupted, branches ascending, panicle more than 10 cm long. 24
24. Lemma narrowing into a short, barely twisted column up to 2 mm long. Panicle very narrow and delicate. *A. longicollis*(25)^{2,12,13}
 Lemma not or scarcely narrowed above, smooth or sometimes rough below awns, not beaked. Panicles rigid, not very delicate. 25
25. Panicle narrow and somewhat contracted, but not dense and spike-like, always more or less open and loose; branches ascending or more or less spreading, never strictly erect and closely adpressed. Widespread (threeawn speargrass) *A. vagans*(19)^{1,2,7,10,12}
 Panicle dense and spike-like, interrupted, sometimes only at base; branches always strictly erect, stiff and adpressed. 26
26. Plants slender; leaves very rough. Lemma furrowed. *A. exserta*(26)^{1,2,3,12}
 Plants wiry, robust, leaves slightly rough. Lemma not furrowed (purple wiregrass) *A. ramosa*(27)^{1,2,7,9,10,12}
27. Margins of lemma inrolled at maturity, thus forming an obvious longitudinal furrow down disseminule. (See fig. 1, page 104) 32
 Margins of lemma overlapping at maturity with no obvious longitudinal furrow. (See fig. 2, page 104) 28
28. Upper glume clearly longer than lower. 29
 Glumes equal or upper shorter than lower. 30
29. Lemma smooth or only slightly rough only on keel; lemma 9.5–10.5 mm long. *A. personata*(2,28)^{2,12}
 Lemma very rough; lemma 6–10 mm long (no. 8 wiregrass) *A. echinata*(29)^{2,8,12,13}
30. Lemma 6 mm or more long. Plants wiry, robust. Leaves stiff. Western forest soils. 31
 Lemma 5–6 mm long. Plants not wiry, rather delicate, short, tufted. Leaves usually flat, not stiff. Usually on clay soils. *A. platychaeta*(30)^{3,12,13}
31. Lemma 6–8.5 mm long, awns 8–15 mm; glumes equal or almost so. *A. nitidula*(31)^{2,5,8,11,12,13}
 Lemma 8.5–12 mm long; awns 13–18 mm; lower glume distinctly longer than upper. *A. strigosa*(32)^{2,5,8,11,12,13}
32. Lower glume longer than upper by 3–7 mm (rarely some spikelets with glumes subequal). Rough-spiny in furrow of lemma. 33
 Glumes differing by less than 4 mm, sometimes lower glume shorter than upper. 34
33. Plants usually >100 cm tall. Lemma 5–8 mm long, shorter than upper glume by about 2 mm. Leaves flat, often coiled. (feathertop threeawn) *A. inaequiglumis*(1,33)^{2,5,8,12}
 Plants usually <100 cm tall, usually with waxy bloom.

- Lemma 6.5–12 mm long, shorter than upper glume by 2.5–6 mm. Leaves flat, flexuous, not coiled (Gulf feathertop wiregrass)
34. Annual or short-lived perennial, plants less than 30 cm high. Panicle dense and shortly exerted. Inland on alluvial or heavy textured soils (yellow threeawn)
Not as above.
35. Glumes with 1.5–4 mm long awns, lower glume 3–5-nerved. Glumes without awns, or with awns less than 1.5 mm, lower glume 1-, rarely 3-nerved.
36. Lemma distinctly rough on back.
Lemma not rough on back.
37. Lemma with distinct spines in furrow.
Lemma usually without spines in furrow.
38. Lemma more than 10 mm long (two-gland threeawn)
Lemma less than 7 mm long (Jericho wiregrass)
39. Inflorescence loose, open, flexuous; lemmas not rough on back, 3.5–5.5 mm long.
Inflorescence more or less contracted; lemma rough or smooth on back, 4–9 mm long.
40. Median awn exceeding lateral awns by more than 3 mm; lemmas 6–9 mm. Plants distinctly wiry, panicle usually loose (dark wiregrass)
- Median awn usually exceeding lateral awns by less than 3 mm; lemmas 4–7 mm. Plants not distinctly wiry.
Panicle usually dense (Jericho wiregrass)
- A. pruinosa*(34)^{2,5,12}
- A. anthoxanthoides*(35)^{2,3,5,8,11,12,13}
35
- A. sciuroides*(36)^{2,12}
36
- A. muricata*(39)^{2,12}
37
- 38
39
- A. biglandulosa*(37)^{2,8,12,13}
A. jerichoensis(41)^{2,8,12,13}
- A. benthamii*(38)^{2,10,12}
40
- A. calycina*(40)^{1,6,10,12,13}
(incl. *glumaris*)
- A. jerichoensis*(41)^{2,8,12,13}