

History and Identification of Cultivated *Echinochloa* Species

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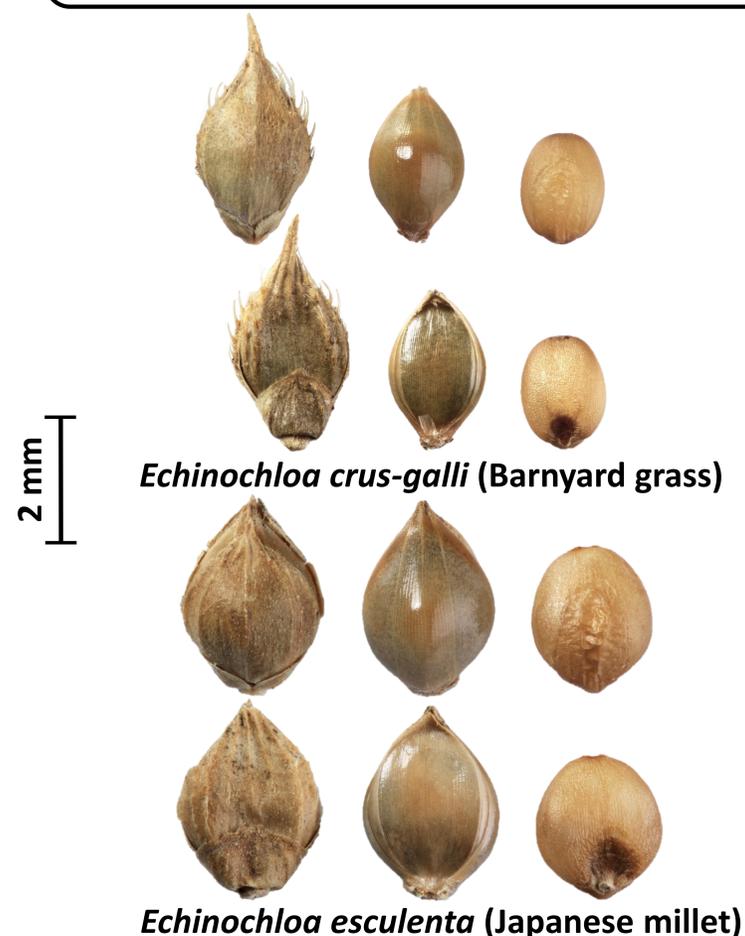
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Cultivation History of *Echinochloa* Species

The *Echinochloa* genus contains 40-50 species, subspecies, and varieties found in both temperate and tropical climates (FNA 1993+), with two species under cultivation:

- ***Echinochloa esculenta*** (A. Braun) H. Scholz, cultivated in warm temperate areas of China, Japan, Korea, the former Soviet Union and Germany, was developed from the wild species, *Echinochloa crus-galli*, in Japan approximately 4000 years ago (De Wet et al. 1983).
- ***Echinochloa frumentacea*** Link, cultivated in tropical India and Africa, developed from the wild *Echinochloa colona* (L.) Link, both the wild and cultivated species may be harvested together (De Wet et al. 1983).

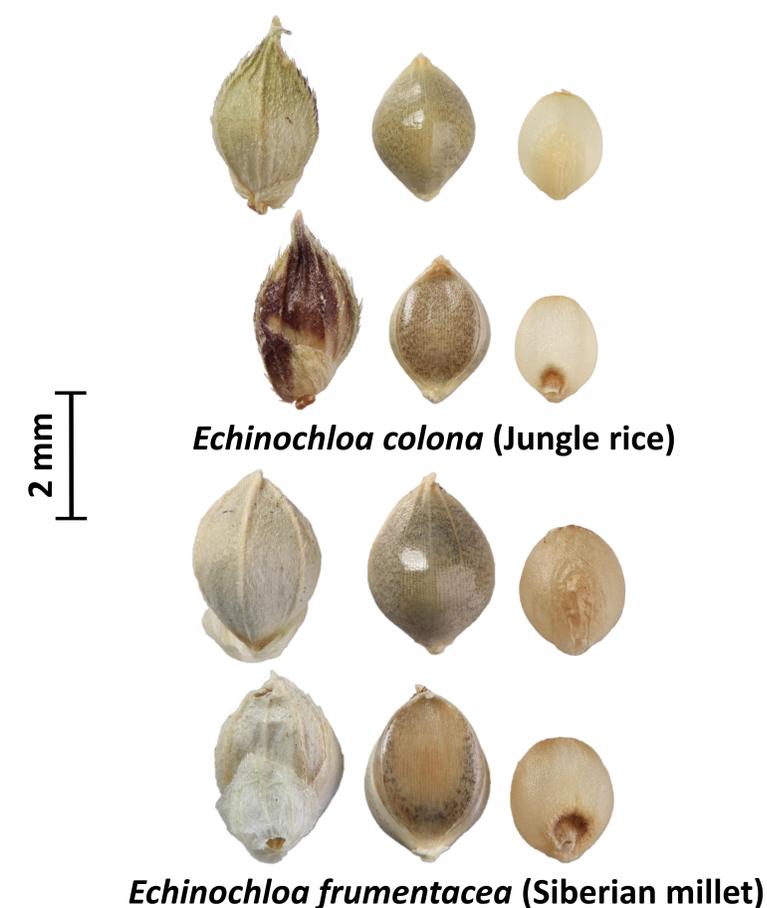


Left to right: Spikelet, Floret, Caryopsis

Distinguishing *E. esculenta* and *E. frumentacea* Disseminules

	<i>Echinochloa esculenta</i> (Japanese millet)	<i>Echinochloa frumentacea</i> (Siberian millet)
Spikelet	<ul style="list-style-type: none"> • Length: 3.5-4 mm; width: 2-2.5 mm (FNA 1993+) • Broad oval, egg-shaped or almost round • Brown or yellowish coloured • Stiff, thick glumes and sterile lemma • Generally narrow end 	<ul style="list-style-type: none"> • Length: 3-3.5 mm (FNA 1993+) • More narrowly egg-shaped or oval-shaped • Whitish or light yellow coloured • Flexible, thin glumes and sterile lemma • Generally wide-angled end
Floret	<ul style="list-style-type: none"> • Generally greyish-brown coloured, can be yellowish • Brown spot in the middle of the lemma 	<ul style="list-style-type: none"> • Greyish-yellow, straw yellow or whitish coloured • White or yellow spot in the middle of the lemma
Caryopsis	• Brown coloured	• Yellowish or whitish coloured
ID Tips	Colour and thickness of spikelet covering, spikelet end narrow or wide-angled, colour of mid-lemma spot on the floret, colour of caryopsis	

*Note that the seeds imaged represent typical features, if seeds are damaged, deformed, or immature, not all features may be exhibited



Left to right: Spikelet, Floret, Caryopsis

Did You Know?

- Until the mid-20th century all cultivated *Echinochloa* species were believed to be derived from *E. colona*, and were collectively called *Echinochloa frumentacea* (Roxb.) Link (Yabuno 1962).
- It was discovered there were two species of *Echinochloa* under cultivation. The cultivated species were renamed as *E. esculenta* and *E. frumentacea* (Scholz 1992, Yabuno 1962).
- The name 'Japanese millet' has been applied to both *E. frumentacea* and *E. esculenta* (CABI 2022, Gould et al. 1972) in North America. Recently, the common name was corrected so that Japanese millet only applies to *E. esculenta*.

References

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