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#### Studies on Agronomic Traits of African Rice (*Oryza glaberrima* Steud.) : III. Some grain morphological aspects of domestication and decrement

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#### Abstract:

To identify some characteristics of *Oryza glaberrima* in grain morphology, length (L), width (W) and thickness (T) of unhusked grain were determined for two cultivated species, i.e. *O.sativa* and *O.glaberrima*, three African wild species, i.e. *O.breviligulata*, *O.longistaminata* and *O.punctata*, and three Asian wild species, i.e. *O.perennis*, *O.sativa* var. *spontanea* and *O.officinalis*. *O.glaberrima* and *O.breviligulata*, which belong to the Series *Glaberrima*, showed flatter grain shape than 4 species of Series *Sativa*, i.e. *O.sativa*, *O.sativa* var. *spontanea*, *O.perennis* and *O.longistaminata*. The two species from Series *Glaberrima* were positioned within the following ranges in W/T, L/T and L/W:  $W/T > 1.45$ ,  $L/T > 3.75$ ,  $L/W > -4.88 \times W/T + 9.95$ . The two cultivated species had larger grain volume than six wild rice species. The ancestral species, such as *O.perennis* and *O.breviligulata* can be characterized among wild species by the large grain volume. Large grain cultivars were found in abundance in African *O.sativa* varieties as compared to Indian varieties. Although a large difference in grain volume could not be found between the two cultivated species, weedy strains of *O.glaberrima*, which have not been grown as cultivated species, had apparently smaller grain volume. These results suggest that the decrement of *O.glaberrima* had been done centering around strains of small grain, and that selection pressure for large grain was strong in Africa over that in Asia.

#### Keywords:

Decrement, Domestication, Grain shape, Grain volume, *Oryza glaberrima*, *Oryza sativa*, West Africa[\[ Full-text PDF \(868K\) \]](#) [\[ References \]](#)

