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[\[Full-text PDF \(942K\) \]](#) [\[References \]](#)**Characteristics of Mesocotyl and Internode Growth of Cultivated Rice (*Oryza sativa* L.) and Wild Taxa of *Oryza***

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Abstract:

The characteristics of mesocotyl and internode growth of rice cultivars (*Oryza sativa* L.) and wild taxa of *Oryza* were investigated using the following cultivars and strains : (1) 260 IRRI's core collection and 2 Japanese cultivars (Sasanisiki and Koshihikari), (2) 9 Panama cultivars (6 used for shifting cultivation system and 3 as improved cultivars) and (3) 6 wild taxa of *Oryza*. Sterilized brown rice grains were cultured on 0.8% agar medium, and maintained at 30°C in the dark for 14 days. The lengths of the mesocotyl, first internode and second internode were examined. Based on the measurements of mesocotyl and internode length, the cultivars (*Oryza sativa*) were classified into 3 main types. Two of them, type 5 and type 6, had the longest second internode, while another one, type 0, had only mesocotyl and undeveloped internodes ; We refer to this type as "MC type". The frequencies of appearance of the two former types were 79.7% and the latter one was 14.4%. Most of the MC type cultivars were found in cultivars originated from the Indian subcontinent : Bhutan, Bangladesh, Nepal, India, and Iran. Two ancestral species of *O. sativa*, *O. rufipogon* and *O. nivara*, contained lots of MC type compared with those of cultivated species. The cultivars for shifting cultivation system in Panama had many MC types compared with those of improved cultivars. It is suggested that the occurrence of MC type was related to the cultivation system.

Keywords:

Ancestral species, Coleoptile, Core collection, Internode elongation, Mesocotyl, Rice, Seedling, Shifting cultivation system

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