


Variability in heading duration among aus rice varieties in West Bengal, India

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In West Bengal, aus (early) paddy is sown in dry land from March to June in different districts. But the sowing time for each area generally is rather specific, and different types of varieties have adapted to each. Little is known about how these

local aus types adapt to a changed growing environment in terms of uniformity of flowering. Data were collected on heading duration (the interval in days from start to completion of flowering) with the use of aus cultivars from distinct agroclimatic zones of West Bengal. Seed was sown in March at the Rice Research Station, Chinsurah. Heading duration was very short (4–6

days) in some varieties but rather long (16–18 days) in others (see table). In one variety it was as long as 19–21 days. The most frequent heading duration was 7–9 days. No relationship could be established ($r = 0.186$) between days to flowering and heading duration; both short and long heading durations were distributed among early-, medium-, and late-flowering types. 

Heading duration^a and growth duration to 50% flowering among aus varieties of West Bengal, India.

Heading duration (days)	Aus varieties (no.)									
	Early flowering			Medium flowering			Late flowering			
	60–66 days	67–73 day S	74–80 days	81–87 days	88–94 days	95–101 days	102–108 days	109–115 days	116–122 days	123–129 days
4–6			15	8	16				2	
7–9	1	4	33	26	35	6		2	1	
10–12	3	3	12	10	27	3	2	1	1	2
13–15		2	11	18	16	3				1
16–18			1	3	4	5	3	3		
19–21							1			

^a Interval from start to completion of flowering.

Performance of northeastern hill rices in the northern plains of India


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Rice has been cultivated for thousands of years in northeastern India, a place which is regarded as one of the primary centers of its origin. In a survey of the region, 22 varieties of cultivated rice were found:

1) Abar 'A', 2) Abar 'B', 3) Abar red 'A', 4) Abar red 'B', 5) Kba saw rit B-2, 6) Kba saw rit B-4, 7) Dullo-6, 8) Dullo-8, 9) Dullo-11, 10) Dullo-10, 11) Dullo-Am, 12) Ryllo red-2, 13) Ryllo red-3, 14) Ryllo red-4, 15) Ryllo red-5, 16) Ryllo white, 17) Theueru red, 18) Kba Thangamma, 19) Lyngsi, 20) Local Black 'A', 21) Kuki, and 22) Nonglwai. Through intensive cultivation, domestication, and selection, those varieties have adapted to the climatic conditions of the vast geographic area. Seed of the genotypes were sown at Kurukshetra, northern India — which has a dry, hot, semiarid climate — and their performance was compared with that of the commonly grown variety IR8.

All the genotypes are taller and mature earlier than IR8, but they give lower

yields. Their grains are bold and medium in length (except those of Kba saw rit-2, which are slender with a length: breadth ratio of 3.04). Although most of these rices are tall, they do not lodge even when heavily fertilized. They are also resistant to shattering. The red-grained Theueru red was the earliest maturing variety with the highest grain yield per plant.

While the varieties do not differ greatly, some yield significantly higher than others, and some have higher protein content. The genes for earliness, lodging resistance, and nonshattering grains of these varieties are valuable to rice breeders of this region for incorporation into local rice strains that lack such traits. 

GENETIC EVALUATION & UTILIZATION

Disease resistance

Rice ragged stunt disease in Indonesia

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A new disease of the rice plant was observed at the Sukamandi Experimental Station, West Java, Indonesia, in May 1977. The disease has also been observed in Sumatra and Bali.

Symptoms of the disease are stunting; twisting and curling of the leaves, especially the flag leaf; ragged or serrated leaves; short flag leaf; presence of galls along the leaf veins; and green color,

often darker than that of healthy plants. Other symptoms are branching of the tillers, incomplete panicle exertion, and unfilled grains. These symptoms differ from those of grassy stunt.

Symptoms begin to appear at about 15 to 25 days after inoculation feeding with the viruliferous brown planthopper *Nilaparvata lugens*. In 4 separate experiments with 9 varieties, transmission by the brown planthopper averaged 17%. The disease is believed to be viral in nature.

Based on the symptomatology of the disease and its transmission by the brown planthopper, the disease is similar, if not