

SEASONAL INFLUENCE ON THE GRAIN YIELD OF RICE

The influence of season on the grain yield of dwarf *indica* rice variety, Jaya was studied for three years in the permanent manurial trial at the Regional Agricultural Research Station,

Pattambi. Grain yield was higher in rabi season as compared to kharif season in all the years (Table 1 and Fig. 1). Eight different manurial treatments repeated in two seasons

Table 1. Grain yield (kg ha^{-1}) of rice variety Jaya in permanent manurial trial (pooled mean of 1996-1999)

Treatments	Kharif	Rabi
T ₁ Cattle manure 18 t ha ⁻¹ to supply 90 kg N ha ⁻¹	2151	2485
T ₂ Green leaf 18 t ha ⁻¹ to supply 90 kg N ha ⁻¹	1556	1882
T ₃ Cattle manure and green leaf each 9 : ha ⁻¹	1708	2512
T ₄ Ammonium sulphate alone to supply 90 kg N ha ⁻¹	1557	1691
T ₅ Cattle manure 9 t ha ⁻¹ + 45:45:45 kg N, P ₂ O ₅ and K ₂ O ha ⁻¹	1599	2467
T ₆ Green leaf 9 t ha ⁻¹ + 45:45:45 kg N, P ₂ O ₅ and K ₂ O ha ⁻¹	1434	1981
T ₇ Cattle manure and green leaf each 4.5 t ha ⁻¹ + 45:45:45 kg N, P ₂ O ₅ and K ₂ O ha ⁻¹	1834	2438
T ₈ NPK fertilizers alone 90:45:45 kg N, P ₂ O ₅ and K ₂ O ha ⁻¹	1456	2093
CD (0.05)	213.4	275.79

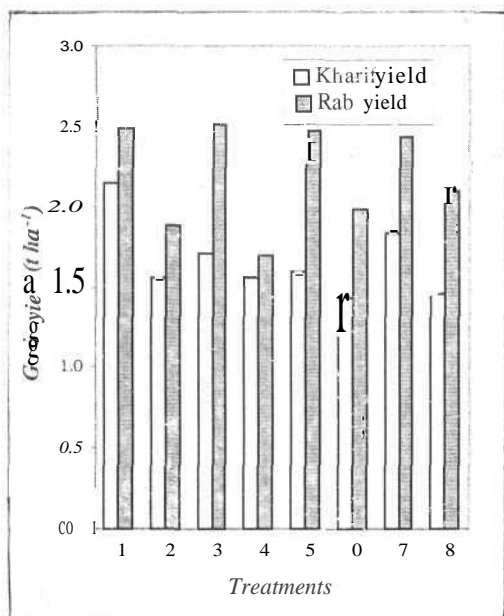


Fig 1. Seasonal variation in the grain yield of rice (pooled mean 1996-1999)

over a period of three years revealed that rabi season gave higher grain yield irrespective of the type of soil treatment.

It is a well-established fact that during kharif season the total rainfall is quite high. The accumulated rainfall during tillering stages of the crop over and above the requirement adversely affects the yield of the crop. Accumulated sunshine hours especially during kharif season will also affect the grain yield. High relative humidity during kharif season as compared to other seasons induces incidence of pests and diseases. These factors and in addition solar energy, which are critical from panicle initiation to 10 days before maturity, are not limiting factors in rabi season (Varadan, 2000). Reddy *et al.* (1995) has reported earlier that the grain yield was nearly 56% less in wet season compared to dry season for eight rice genotypes they studied. Studies on the effect of radiation and temperature on rice yield by Pamplona *et al.* (1995) also have revealed higher yield during dry season compared to wet season.

The optimum temperature and the increased sunshine hours with effective radiation which prevailed especially at the flowering stages in rabi season and the less incidence of pests and diseases might have favoured the increase in

photosynthesis and higher grain yield. The present study proved that irrespective of the type of fertility management practices followed, grain yield in rice is higher in rabi compared to kharif season.

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