

ABSTRACT

**An agronomic study of the main and ratoon rice
(*Oryza sativa* L.) crop in Trinidad****Kamaldeo Maharaj**

Rice (*Oryza sativa* L.) productivity can be increased in Trinidad. Three field experiments were conducted in 1992 to 1994 to investigate the effects of cultivars, seedling numbers per hill, rice culture and post plant herbicides on main crop growth and yield attributes and the effect of cultivars, seedling numbers, cutting height, nitrogen, rice culture and main crop weed control on ratoon crop growth and yield performance.

The grain yield of the main and ratoon crop were not affected by different seedling levels, but ratoon yield of the 30 cm cutting height (1.05 t ha^{-1}) was significantly better ($P < 0.01$) than 20 and 10 cm due to greater tillering and leaf area and fewer missing hills.

Metica 1 had better main plus ratoon crop yields (7.56 t ha^{-1}) than Oryzica 1 cultivar (6.63 t ha^{-1}). Nitrogen application increased dry matter, panicle numbers/ m^2 and spikelets per panicle, with a greater yield response at 40 cm cutting height.

Propanil, [N-(3,4-dichlorophenyl) propanamide] applied twice ($6.0 \text{ kg a.i. ha}^{-1}$), pendimethalin, [N-(1-ethyl propyl)-3,4-dimethyl-2,6-dinitrobenzenamine] at $1.5 \text{ kg a.i. ha}^{-1}$, oxadiazon, [3-[2,4-dichloro-5-(1-methylethoxy) phenyl]-5-(1,1-dimethylethyl)-1,3,4-oxadiazon-2(3H)-one] at $1.0 \text{ kg a.i. ha}^{-1}$ and butachlor, [N-(butoxymethyl)2-chloro-N-(2,6 diethylphenyl) acetamide] at $2.0 \text{ kg a.i. ha}^{-1}$ combined with propanil ($3.0 \text{ kg a.i. ha}^{-1}$) was statistically significant ($P = 0.001$) to propanil combined with 2, 4D [2, 4-dichlorophenoxy acetic acid] ($0.5 \text{ kg a.i. ha}^{-1}$) and the weedy check in reducing total weed biomass and increasing main crop yields.

Higher weed biomass was associated with wet seeding in the main crop (78 g m^{-2}) and transplanting in the ratoon crop (189.9 g m^{-2}). Main and ratoon crop grain yields in both rice cultures were similar, when weed control is optimum. A weed biotype shift occurred in the ratoon crop, but herbicides with good weed control rating in the main crop, sustained control in the ratoon crop.

Rice productivity was increased by improving main crop yields and ratooning, as an alternative to a second crop.