

**EFFECTS OF NITROGEN AND PHOSPHORUS LEVELS  
ON YIELD AND YIELD COMPONENTS OF THREE  
UPLAND RICE (*Oryza sativa L.*) VARIETIES AT SAMARU,  
NIGERIA.**

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**ABSTRACT**

Field experiments were conducted during the 1997 and 1998 rainy seasons at the Institute for Agricultural Research (IAR) Farm, Samaru, Nigeria to study the effect of nitrogen and phosphorus on the yield and yield components of three upland rice varieties. The treatments consisted of four nitrogen levels (0, 50, 100 and 150 kg N/ha). Three phosphorus levels (0, 20 and 40 kg P/ha) and three rice varieties (ITA 150, ITA 257 and 'Mai Allura'). Factorial combinations of the treatments were laid down in a split plot design with three replications, with N and P allocated to the main plots and the rice varieties allocated to the sub-plots. The parameters assessed in the study were no. of panicles/hill, no of spikelets/panicle, no. of grains/panicle, 1000-grain wt, and paddy yield (t/ha). The results of the combined analysis for the two years showed that varieties ITA 150 and ITA 257 performed similarly and significantly better than 50 kg N/ha which was also better than the control treatment in all the parameters assessed. The two levels of applied P gave similar results which was also better than the control treatment in all the parameters assessed. The paddy yield of ITA 150, ITA 257 and 'Mai Allura' were 1.77, 1.82 and 1.12 t/ha., respectively. The interaction between N and P on paddy yield was observed to be significant, with the application of either N or P alone failing to have any significant effect on paddy yield.

**Keywords:** Nitrogen, Phosphorus, Rice Varieties.