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RESIDUAL EFFECTS OF FERTILIZER ON RICE IN A RICE-VEGETABLE CROPPING PATTERN

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Double cropping (rice-vegetables) in rice fields has become widespread in the Matale district as it provides additional benefits to the farmer than two rice crops a year. The vegetable growing season of a particular field varies with the availability of irrigation water for rice production, and this may be either Yala or Maha. These farmers use high levels (about 2t/ha) of fertilizer at short frequencies for their vegetable crop. An experiment was conducted for 3 consecutive seasons starting from Maha 84/85 to Maha 85/86 to study the residual effects of fertilizer used for the vegetable crop on the subsequent rice crop. During the Maha 84/85 season the recommended fertilizer rates for rice (3 1/2 months age class) was tested against minus of either basal (NPK), 1st top dressing (N), TDM (N & K) or 1st top dressing and TDM applications. During Yala 85 and Maha 85/86 seasons, the minus basal fertilizer treatment was split into two where basal fertilizer was applied but without either P or K.

The results indicated that basal fertilizer application consisting mainly of P and K could be omitted due to the possible build up of these nutrients in the soil as a result of heavy application of fertilizers for the preceding vegetable crop. This is further confirmed by high level of P (60-80 ppm, Olsen's) and moderately high level of exchangeable K (0.25 Exch. K me/100g soil) in the soil prior to conducting the experiment. However, top dressings were important and yields were reduced significantly when both or either one of the top dressings were omitted. The yield reduction was mainly associated with the reduction of panicle number and seeds per panicle rather than seed weight.