EVALUATION OF PHOSPHATE FERTILIZER FOR RICE

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In the usual field evaluation of different sources of fertilizer for rice, the experimenter hopes that the soil will be sufficiently low in the nutrient of interest so that a grain yield response to the added fertilizer will be obtained. If there is no response a comparison of the fertilizers is not possible.

A long term field experiment with rice is being continued at Gampola (soil pH 5.0, Olsen's P 11 ppm) comparing five forms of phosphate, ranging from the almost water insoluble Eppawela rock phosphate to the water soluble concentrated super phosphate. Owing to the high phosphorus content of the soil hardly any significant differences in grain yield have been obtained even after six seasons of cropping, although visual differences in plant growth between the treatments were evident at the beginning of each season. The analysis of soil samples after each cropping season also did not show up any significant differences between the phosphates in their ability to supply P. However, measurements of phosphorus uptake by the plants at different stages of growth showed the contrasting abilities of the fertilizers to supply phosphorus to plants. This suggests that it is prudent to examine the phosphorus uptake by rice plants in P source evaluation studies, than to depend entirely on the grain yield at harvest.