

## INCREASING PRODUCTIVITY OF LOWLAND RICE GROWN ON IRON TOXIC SOILS

M. ISMUNADJI<sup>1</sup> W.S. ARDJASA<sup>2</sup> H.R. VON UEXKULL<sup>3</sup>

1. Bogor Research Institute for Food Crops, P.O. Box 368, Bogor, Indonesia
2. Head, Tamanbogo Substation, Purbolinggo, Central Lampung
3. Director, East and S.E. Asia Program Potash & Phosphate Institute and International Potash Institute, 126 Watten Estate Road, Singapore 1128

### ABSTRACT

Iron toxicity in lowland rice seems to be widely distributed in Indonesia. It often occurs in depressions and areas with poor drainage, in newly developed paddy fields and promoted by multinutritional stresses. Iron toxicity in lowland rice becomes even more severe and extensive due to the introduction of modern high yielding varieties susceptible to iron toxicity. It occurs not always on very acidic soils. Iron toxicity of lowland rice can be alleviated by planting tolerant varieties, intermittent drainage and proper fertilizer application. Proper fertilization decreases iron uptake by the rice plant. Potassium is often dominant in alleviating iron toxicity in lowland rice. Among the varieties tested Kapuas and Batang Ombilin are the most tolerant to iron toxic soils, while IR64 is the most susceptible. However, if well fertilized the susceptible variety such as IR64 can produce high yield.