

IFS - RUHUNA - K U LEUVEN PROJECT ON IRON TOXICITY

Ir. Pol Deturck

Summarizing the progress of the second year of the project the following can be concluded:

The main office and analytical laboratories of the project are now definitively installed at the Institute of Fundamental Studies. Actually, about 30 soil and \pm 10 plant characters are determined on a semi-routine scale, illustrating that the objective to establish a soil fertility laboratory at the IFS and to provide IFS with better research conditions is fulfilled.

So far approximately 200 soil and about 100 iron toxic plant samples were analysed in triplicate on a wide range of chemical characteristics. Results of the analyses revealed strong deficiencies of exchangeable bases, so that iron toxicity should be considered as a problem caused by a low nutrient status rather than by a low pH or a high concentration of reducible iron.

The entering of the analytical data on the computer provides the necessary information to set up a data bank on the fertility status of paddy soil, which in turn could permit the funding of a soil advisory service.

Seven greenhouse experiments ranging from organic and inorganic fertilizer studies over investigations on varietal tolerance of the rice plant to simulation of interflow and drainage processes were started, so that 1987 could be considered as the "year of the greenhouse".

Fundamental research on the influence of potassium on redox potential, microbial activity and iron reduction in the rhizosphere of rice roots was started. In the laboratory, phosphate sorption characteristics of some

Sri Lankan rice soils were investigated and an attempt was made to find a suitable method to determine the microbiological characteristics of a paddy soil.

Besides the permanent staff, about a dozen of people were trained in analytical technique. With the compilation of "Soil and plant analysis - a laboratory guide" by Mr. J. De Coninck, it will in future even be more easy to train people.

Within the resources of the project, facilities were given to anybody who requested for them.

In 1987, three MSc students successfully submitted their thesis at the University of Leuven in July 1987. Besides 2 students of Ruhuna University and 2 students from University of Peradeniya obtained their BSc degree with a thesis made at the project.