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## Rice Cropping Systems and Possibilities for their Improvement in Myanmar

TIN AYE AYE NAING<sup>1</sup>, SOE SOE THEIN<sup>2</sup>, MARIA RENATE FINCKH<sup>3</sup>, ANDREAS BUERKERT<sup>4</sup>

<sup>1</sup> *Yezin Agricultural University, Department of Plant Pathology, Myanmar*

<sup>2</sup> *Yezin Agricultural University, Department of Agricultural Chemistry, Myanmar*

<sup>3</sup> *University of Kassel, Department of Ecological Plant Protection, Germany*

<sup>4</sup> *University of Kassel, Institute of Crop Science, Germany*

### Abstract

Rice (*Oryza sativa* L.) is by far the most important staple for the 48 million people in Myanmar (formerly Burma) of whom 75 % directly depend on farming. National average grain yields of 2.8 t ha<sup>-1</sup> are relatively low and little is known about the actual inputs used and constraints limiting rice productivity in this country. To identify yield constraints, input intensities and general practices of rice cultivation in Myanmar, an on-farm survey was conducted in 2001 and 2002. Six townships of lower Myanmar and three townships of upper Myanmar were selected. They represented the most important areas of rice production with approximately 80 % of the national rice output. A subset of these sites and a few additional sites were revisited in 2002 to verify the results obtained in the previous year. The survey included five to six randomly selected farmers per site who grew the popular rice variety Manawthukha. These farmers were interviewed using structured questionnaires comprising questions on soil fertility, observed diseases, and their socio-economic status. In addition each field was assessed for incidence and severity of diseases and pests. Plant sampling occurred at the end of the season (November) to determine straw and grain yields. The results revealed that irrespective of farm size about 65 % of the rice was grown under rainfed conditions. Around 90 % of the farms < 2 ha and 70 % of the farms with a farm size of > 2 ha used rice double cropping. Three rice crops per year were only grown on larger farms. The use of mineral fertilisers increased and pesticide use decreased with farm size. Only about 18 % of the farmers applied herbicides, but 71 % used fungicides and/or insecticides. Very few insect pests were observed in the fields. Most widespread (with highest incidence) and severe was sheath blight (*Rhizoctonia solani* KÜHN). However, if bacterial leaf blight (*Xanthomonas oryzae* pv. *oryzae*) and sheath rot (*Sacrocladium oryzae*) occurred, their incidences were often high. A surprisingly high incidence of false smut (*Ustilaginoidea virens*) was found in two fields, but it remains open to further investigation under which conditions this disease may cause epidemics in Myanmar.

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