

O.36 - Toward an integrated strategy to limit blast disease in upland rice

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In the Highlands of Madagascar, rice is the staple crop and food. To face the growing demand for rice, CIRAD and Fofifa developed upland rice varieties adapted to the conditions of high elevation areas. However, upland rice was more susceptible to bio-aggressor attacks than rainfed lowland rice, and especially susceptible to *Magnaporthe oryzae*, the causal agent of blast disease. Due to the economical situation of Madagascar farmers, the use of pesticides is limited. Integrated strategies have to be built for the management of the blast disease. Based on results obtained on rice or other crops, we considered two directions: a) the effect of direct-seeded, mulch-based cropping systems, first used in Madagascar to reduce erosion and soil degradation, b) the effect of cultivar mixtures. Our first results show a significant slow-down of the dynamic of blast epidemic with both management practices. However, no significant difference was detected when the final sanitary state of the crop is considered. This is probably due to the very high susceptibility of the cultivar examined. Nevertheless, it seems possible to improve the system in order to achieve an efficient and sustainable management of the disease. Modelling approaches will be helpful to optimize the cropping systems and the cultivar mixture arrangements.