Exchanging Experiences and Learning on the Effects of the Hemiparasitic *Striga asiatica* in Brazilian Upland Rice Varieties Introduced in Mozambique

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International cooperation programs in agriculture are a good chance for interchange of information and exchange of experiences regarding agricultural problems that could be unknown to any partner. During the introduction of five upland rice varieties originated from Brazil (Primavera, Sertaneja, Pepita, Serra Dourada and Esmeralda) in Nampula Province, northeast of Mozambique, it was observed that some plants in the field were infested with Striga asiatica (Striga) locally known as “pequeno-feiticeiro” (small-witch). This is a hemiparasitic plant that infects cereals such as maize, sorghum and rice, as well as grasses such as Brachiaria, causing losses varying from 20% to 100% of their economic value. In 2014, a controlled experiment was devised to better understand how much such parasitism could be deleterious to these varieties. All rice materials, plus three landraces from Cabo Delgado Province, were sown in pots with 10 Kg of a local quartz-sandy soil collected from an area where maize and the rice variety Sertaneja were infested with Striga the previous year. Striga is very proliferous, producing up to 100,000 seeds per plant. Ten rice plants were left per pot after germination, with 16 replications for every treatment. Experiment was run under controlled conditions, disposed in a completely randomized block design. Eight replications of every treatment were cleared of any growing Striga pods since its appearance above-ground (Striga controlled treatment), while in another eight replications Striga emergence and growth were free (Striga non-controled treatment). Emergent Striga pods were counted at 20, 40 and 85 days after rice germination, when both rice plants and Striga were harvested, separated, and dried. Rice above-ground and root biomass were recorded. All varieties and local landraces were infected by Striga, although local landraces were faster infected. There was negative Pearson correlations between Striga dry mass and rice total (-0.69 $p<0.001$), roots (-0.57 $p<0.05$), and above-ground (-0.68 $p<0.001$) dry mass, indicating that the parasite effectively drives large part of the plant energy for its own growth. Variety Primavera showed a slower infection and produced significantly ($p<0.05$) higher biomass than all other varieties, despite being also strongly affected by Striga. Rearing Striga pods was

not suffice to avoid its deleterious effect, confirming that most of the damage is made before the parasite pods emerge to produce flowers and seeds. This exchange of experience allowed Mozambicans to learn that it is possible to crop upland rice in the Nampula area, while Brazilian researchers learned that their varieties are susceptible to this dangerous weed. Variety resistance is the more suitable way to go along with Striga. It could be highly damaging if it is wrongly introduced in Brazil, where ecological conditions are quite similar to those where it is commonly found, in Africa and Asia. Striga is actually present in North America (Florida, North and South Carolina) and Guyana.