

Oral - Session 6

Earthworms as new pests of irrigated rice in Brazil

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Earthworms have been reported as pests of rice in various countries, mainly in SE Asia and Australia, but only recently have they been accused of damage to rice cultivation in Brazil. Nevertheless, few studies have been performed on earthworm communities in rice fields in Brazil and little is known of the ecology of the species encountered thus far. Therefore, the present study was undertaken to: a) evaluate the species associated with rice damage in three sites, and b) assess the relationship between earthworm populations and rice yields at two sites. Earthworms were collected in Miranda and Rio Brillhante, Mato Grosso do Sul and in Santa Maria, Rio Grande do Sul. At the two former sites, rice production was also assessed in a 1 m² area, and in its center, earthworm abundance assessed using the TSBF method (25 x 25 cm monoliths). The relationship between rice yields and earthworm abundance was assessed and correlation coefficients tested using Student's T-test. In Santa Maria, the species associated with yield losses was a small, thin Ocnerodrilid, *Eukerria eiseniana*. In Miranda, a new species of earthworm in the Criodrilidae family was found, and the relationships between abundance of this species and rice grain yields ($r = 0,35$; $P = 0,13$) or number of stalks ($r = -0,08$; $P = 0,71$) were not significant. In Rio Brillhante, two species predominated, a *Eukerria* sp., and a moderate-sized Glossoscolecid (*Anteoides* sp.). The relationship between earthworm abundance and rice grain yields or number of stalks was also non-significant. Therefore, earthworm abundance does not appear to be directly negatively related to rice production. Nevertheless, yield losses may result from high infestation due to plant lodging, which impedes adequate machine-harvesting of the rice grains. Further research is needed to evaluate the extent of the problem in rice fields throughout Brazil, and find environmentally-friendly means of reducing potential damage. *presenting author