

Entry No. IRRC-0301

Category	: International Rice Research Conference
Select Theme	: Sustainable and equitable farming systems
Endorsement email	:
Keyword 1	: Disease management
Keyword 2	: Sustainable intensification
Keyword 3	: System of Rice Intensification (SRI)
Title of Entry	: Stem and sheath disease dynamic in rice rotations of Uruguay
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Select only one type of presentation	: 15 minute oral presentation
Abstract	: The rice production in Uruguay integrates from lax rotations, where the sown pasture occupies most of the time in the system and mostly four years of intercrop, to more intensive production systems, with more frequent rice cropping in the rotation. The intensification of rice use can affect the population of pathogens present in the soil, causing changes in the development of diseases in the crop. Within the soil diseases, stem rot and sheath spots are the most damaging diseases present in temperate regions. In 2012, a long-term experiment was established in the Paso de la Laguna Experimental Unit to study different rice

rotations from productive and environmental points of view. In this context, the dynamics of diseases in the experiment was taken into consideration as a possible yield limiting factor. The objective of this work is to present the results of stem and sheath disease dynamics in the first five years of the experiment. The treatments were installed in a paddock with a history of rice-pasture rotation, establishing the following crop sequences: 1) continuous rice (1 year), 2) rice-soybean (2 years), 3) rice-crops, rice-soybean-rice-sorghum (4 years), 4) rice-short pasture (2 years), 5) rice-long pasture (5 years), and 6) rice-soybean-short pasture (6 years). All the phases of each rotation are present every year in three repetitions. Annually, the incidence and severity of the main rice diseases were evaluated and a severity degree index (SDI%) calculated. The results indicate that for stem rot, significant differences were found between year ($P < 0.0001$), phase in rotation ($P = 0.0302$), rotation in year ($P = 0.0017$) and interaction ($P < 0.0001$), but not between rotations, even with different management practices applied. For sheath spots, significant differences were found according to year ($P < 0.0001$), rotation ($P < 0.0001$) and rotation in a year ($P < 0.001$). The severity for stem rot is higher for continuous rice (SDI 46.5%), and lower for rotations including pastures (SDI 32-35%), although the system has not yet stabilized. No significant differences were found for SDI% sheath spots in rotation / phase due to the effect of the sown variety.

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