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Select Theme	: Sustainable and equitable farming systems
Endorsement email	:
Keyword 1	: Yield gaps
Keyword 2	: Sustainable intensification
Keyword 3	: Sustainable management practices
Title of Entry	: FLOODED RICE YIELD INCREASES AFTER ROTATION WITH SOYBEAN
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Select only one type of presentation	: 15 minute oral presentation
Abstract	: Brazil is the ninth world rice producer. In five years average (2010-2014) Brazil produced over 12 million tons of the grain. The Rio Grande do Sul state is responsible for 70% of the Brazilian production, cultivated in 1,1 million hectares. Although the continuous increase of the average yield in the past few years, Brazil still has a considerable yield gap between the experiments yield (13 Mg ha-1) and the state average yield (7.5 Mg ha-1). The flooded rice monoculture in the state lowlands is not efficient to reach higher yields, and so the fallow or the rotation system with soybeans can provide better fertility, weed, pest and disease

control. Although the difficulty in growing soybean in low lands (compacted, hydromorphic and poorly drained soil), it can be a good crop for rotation and improve flooded rice yield in the following year. The study was conducted in the lowland area of the Rio Grande do Sul state. During the 2015/2016 and 2016/2017 growing seasons, 144 farms that have different production systems (rice monoculture, fallow and soybean rotation) were accompanied and questionnaires were applied to identify the relation between yield and production systems. The lowest average yield (7.2 Mg ha-1) was found in the farms that have flooded rice monoculture (Rice-Rice), while the higher yield (7.8 Mg ha-1) was found in the farms that have the soybean rotation system (Rice-Soybean). The farms that use the fallow system (Rice-Fallow) had an average yield of 7.7 Mg ha-1. The 8% rice yield increase in the soybean rotation system, is due to better conditions provided to the following crop, the main objective of crop rotation. Similar results were found in the corn and soybeans rotation in United States, where the soybeans and corn yield can reach 4.5 Mg ha-1 and 14 Mg ha-1, respectively. The average yield range between the rice production systems was 7.2 Mg ha-1 and 7.8 Mg ha-1, which means that the rotation system with soybeans or fallow can increase the rice yield and minimize the yield gap in flooded rice in Brazil.

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