3225 – Agronomy

RICE CROP UNDER SPRINKLER IRRIGATION

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Rio Grande do Sul (RS) is the largest Brazilian state in rice production, accounting for about 65% of production in the country. Practically, its cultivation is carried out by the system of continuous flooding. The lowland areas traditionally used to this culture have diverse topography, ranging from very flat areas to areas more wavy. The continuous flooding system has some additional difficulties due the large amount of water necessary to irrigation and to build the levees for adequate water management. This system still causes problems to the cultivation of other crops. Another important aspects to be considered is that in a lot of regions where the rice is grown, the water availability combined with low efficiency of water use is a limiting factor to rice production. The efficiently use of water, by itself, is a great advantage of sprinkler system. The changing from the flood irrigation system to sprinkler causes big changes in the agronomic performance of Rice plant due the new environment. The changing in the performance of rice plant is not yet well known by the research. Thus, experiments were conducted during 2009/10, 2010/11 and 2011/12 seasons, in different regions of the state to evaluate the performance of rice cultivars under sprinkler irrigation. The experimental design was a randomized complete blocks with four replications. Each plot consisted of nine lines of five meters, the useful area being harvested four meters of central rows (4 m^2). The variables analyzed were yield (kg ha^{-1}), 50% flowering - cycle (days), plant height (cm), lodging (rating scale), whole grain yield (% whole grains). The analysis of variance and the Tukey test ($P < 0,05$) applicated to the data of yield, by the use of the SAS program, were able of to discriminate the treatments. According on the results achieved so far, can conclude that it is possible obtain high yield potential in the cultivation of rice under sprinkler irrigation and that the rice genotypes developed for the system under flood irrigation, predominantly indica type, have yield potential higher than upland genotypes even grown under sprinkler system even when grown under system of sprinkler irrigation.

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