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Disease and insect damage, growth and yield of sorghum, foxtail millet between rotational upland and continuing upland field

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Abstract

This study was performed in order to investigate disease, insect damage, growth and yield characteristics of green maize by organic paddy-upland rotation system. This experiment also was to select optimum variety for organic paddy-upland rotation cultivation. This experiment was conducted at Anseong-si Gyeonggi province of Korea in 2016. The varieties used in this study are green maize of total 8 varieties. Green maize was planted at rotational upland field and continuing upland field and tested for comparison. In case of average occurrence of 4 major diseases for green maize, rotational upland field was higher than that of continuing upland field. Heukjinjuchal and Daehakchal were the lowest occurrence by less than 2% among 8 varieties. Average damage of 8 varieties by *Ostrinia furnacalis* larva, which is the main pest in green maize was higher in rotational upland field than that of continuing upland field. Chalok 4 and Heugjeom 2 were judged to be resistant varieties to 4 major diseases among 8 varieties. The average yield of green maize per 10a in rotational upland field decreased to 85% level of continuing upland field and Chalok 4 showed the highest yield by 789.0 kg/10a among 8 varieties. The most suitable varieties in organic paddy-upland rotation system were judged to be Chalok 4, Heukjinjuchal and Heukjeom 2.

Keywords: sorghum, foxtail millet, paddy-upland rotation, growth and yield

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