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Walnut and crop yields in walnut orchards intercropped with wheat

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The significance of intercropping is to reduce stress but also to increase productivity. The aim of our research is to investigate the yields in intercropped system of walnut and wheat. The field trial was set up in Eastern Croatia in an 11-year old walnut orchard with alley width of 8m, wheat was sown in 6m wide strips. The field trial consisted of three plots: a) control plot of wheat b) walnut orchard with intercropped wheat and c) walnut orchard without intercropped wheat. The walnut orchard has 10 equally long rows of walnuts. However, walnut yield of first five rows was always around 30% of the total yield, while the last five rows had around 70% of total walnut yield. We have decided to sow crops in the 4 alleys in between first five rows to increase the productivity of this low productive area. After the sowing of wheat in the alleys of first five rows they had walnut yield of 378 kg/ha and wheat yield 4.5 t/ha. Walnut control plot had walnut yield of 746 kg/ha and wheat control plot had wheat yield of 6.7 t/ha. In relative numbers the walnut yield was 51% (0.51) of the walnut yield in the walnut control plot and wheat yield was 67% (0.67) of the wheat yield in the wheat control plot. Altogether it comes out that intercropped plot had land equivalent ratio (LER) of 1.18 which means that by intercropping wheat in this rows of walnut of low productivity we have increased the production of this low productive area in comparison to high productive area by 18%.



Keywords: agroforestry, intercropping, yield, walnut, wheat.