***Synergy of Mycorrhiza spp and Distance of Double Row Planting in Improving the Effectiveness of Land Use in Corn Plants (Zea mays* L.)**

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ABSTRACT

Corn (Zea mays L.) is a cerealia crop which is widely cultivated in Indonesia. The production of corn in Indonesia increase 3.91% from 2017 to 2018 but the consumtion of corn increased 11.51 million ton in 2018, so the production is not sufficient for consumption. The production of corn can be increased through many ways, one of the ways is applying mycorrhiza and using double row spacing. The study aim is to identify the effect of mycorrhiza and double row spacing to effectiveness land use on corn. This research was conducted at Tamanan, Bondowoso from November 2019 to february 2020. The experiment arranged in randomized block design (RBD) with 2 factors and 3 replications. The first factor was four level of mycorrhiza, i.e without mycorrhiza, mycorrhiza 5 g/plant, mycorrhiza 15 g/plant, and mycorrhiza 25 g/plant. While the second factor is 3 planting systems, i.e conventional system (70cm x 25cm), modification of jajar legowo (90cm x 20cm x 10cm) and modification of jajar legowo (90cm x 20 cm x 20cm). So there are 12 treatment combinations. Collecting data of this reseach were plant height, stem diameter, cob lenght, weight of wet cob per samples, weight of dry cob per samples, dry shelled weight per sample, weight of wet cob per plot, dry shelled weight per plot and weight of 100 seeds. Data were analyzed using f test (ANOVA) if the data showed normal and homogen test and then tested with DMRT 5% and 1%. This research showed that there was no interaction between mycorrhiza and double row spacing. Applying of mycorrhiza 15g / plant is the best treatment on wet cob weight, dry cob weight per plot and dry shelled weight per plot. While for planting system that use jajar legowo modification 90cm x 20cm x10cm is the best treatment on wet cob weight, dry cob weight per plot and dry shelled weight per plot.

Keywords : *double row spacing, corn, mycorrhiza*