Cover Letter

13 Mar 2021

Dear Editor,

I am writing to submit our manuscript entitled, "Interactive Effects of Residue and Tillage Methods on Growth Analysis, Yield and Yield Components of Melon" for consideration for publication in ***Agrivita (Journal of Agricultural Science).***

Conventional tillage is practiced substantially in melon-growing areas. Although conventional tillage has destructive effects on the environment, it also has many negative effects on the health of agroecosystems and crop production. However, very few experiments and data have been conducted to investigate the functional differences (growth, yield, and yield components) of the melon crop under different tillage methods. Field experiments were accomplished to research the interactive effect of residue and tillage methods on growth analysis, yield, and yield components of Melon during the 2019 growing season. Tillage treatments in this research included were conventional tillage (CT; moldboard ploughing + two passes of disk harrowing), no-tillage (NT), and minimum tillage (MT; one pass of disk harrowing) and. Residue treatments were included 0%, 30% and 60%. Yield, yield components included fruit weight per plant (FWPP), the number of fruit per plant (NFPP), diameter (D), length (L), sugar (S), radiation use efficiency (RUE), and water use efficiency (WUE) were obtained for all treatments. Results showed that tillage methods significantly (P≤0.05) influenced the yield and yield components. Analysis of variance results showed that yield, FWPP, NFPP, D, L, S, and RUE were significantly under the different tillage methods; moreover, yield, FWPP, NFPP, D, L, and S were significantly under the different residue percentage and interactive effect of tillage and residue. The maximum FWPP (2.678kg), NFPP (6.799), D (18.49cm), L (45.93cm), S (12.51%), and RUE (2.470) as a result yield (16.17 t ha-1) were observed with the CT. Also, maximum FWPP (2.192), NFPP (5.353), D (16.66), L (39.52), and yield (12.83 t ha-1) were obtained from 30% residue. On the other hand, maximum FWPP (2.850), NFPP (6.790), D (20.71), L (53.53), and yield (17.09 t ha-1) from CT30% were obtained. Therefore, moldboard ploughing followed by two passes of disk harrow with 30% residue was found to be more appropriate and profitable tillage method and residue percentage in improving Melon's yield in the temperate cold climatic zone. Almost all of the growth indicators were optimum for conservation tillage treatments, especially with 30% residue.

The project results well showed the positive effects of tillage methods and residue on Melon's growth and yield. Therefore, based on the results of this scientific study, it can be said that the best way to deal with yield maximum is the use of reduced tillage and residue reservation on a farm. Because our findings can be applied in agricultural and especially agronomy science, they are likely to be of great interest to the readers of ***Agrivita (Journal of Agricultural Science).***

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Thank you for receiving our manuscript and considering it.

Note: we didn't receive any funds from any institutes or Universities, so please accept our paper free of charge.

Kind regards,

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