

ABSTRACT

THE EFFECT OF CONVENTIONAL TILLAGE AND NO-TILLAGE METHODS ON SOME SOIL AND PLANT PROPERTIES IN SECOND CROP GRAIN MAIZE PRODUCTION IN AYDIN

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In this study the gravimetric moisture content bulk density penetration resistance the sprout degree of output of the seed planted in the fields the average germination time germination rate index the height the stem diameter of the cultivated maize cob height cob diameter cob length cob weight of the maize were examined in conventional tillage method applied in the grain maize cultivation in Aydın region and in zero tillage methods and for this purpose the measurements made in six different study plots were evaluated. The averages of soil moisture content values were measured as 13.558 % 17.306 % and 21.688 % respectively in 0-10 cm 10-20 cm and 20-30 cm depth variances. The general average of the soil moisture content values measured for conventional tillage methods was found to be at a lower level than the zero tillage methods in every 10-20 cm and 20 – 30 cm depth. Germination rate index conventional tillage method was determined % 0.57 higher than zero tillage method. The lowest and the highest values are 0.46 units/m per day in zero tillage methods and 0.50 units/m. Per day in conventional tillage methods. As a result of the measurements the penetration resistance values have been determined as 1.03 MPa-1.28 MPa and 1.71 MPa in 0-10 cm 10-20 cm ve 20-30 cm depth variances. Zero tillage method has positive results in soil moisture protection in the rotation of wheat and second crop maize and in terms of sprouting and agricultural output with lower penetration resistance and bulk density values

Key words: Conventional tillage method no-tillage method soil and plant properties crop grain maize