

# BOOK OF ABSTRACTS



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# EFFECT OF DIFFERENT ORGANIC WASTES ON MICROBIAL PROPERTIES OF MAIZE (*Zea Mays Indendata*) RHIZOSPHERE AND ROOT FREE SOIL

Rıdvan KIZILKAYA<sup>1,2\*</sup>, Coskun GULSER<sup>1</sup>

<sup>1</sup>Ondokuz Mayıs University, Faculty of Agriculture, Department of Soil Science and Plant Nutrition, Samsun, Turkey

<sup>2</sup>Agrobigen R&D Ltd.Co., Samsun Technopark, Ondokuz Mayıs University, Samsun, Turkey

\*Corresponding author: ridvank@omu.edu.tr

## Abstract

This study was carried out in order to determine the effects of various organic wastes (tobacco production waste, wheat straw, tea waste and hazelnut husk) under greenhouse conditions on microbial biomass C (Cmic) and basal respiration (BSR) in clay loam soil and rhizosphere (*Zea mays indandata*) soil of maize plant. The organic wastes were thoroughly mixed with the soil at a rate equivalent to 50 g kg<sup>-1</sup> on air-dried weight basis. Experimental design was randomized plot with the replications in greenhouse. The moisture content in soil was maintained around 60 % of maximum water holding capacity by weighing the pots every day. Changes in the Cmic and BSR were determined in the soil and rhizosphere (*Zea mays indendata*) samples and root free soil taken in 15, 30, 45, 60, 75 and 90 days after the experiment was conducted. At the end of experiment, all organic waste added soil increased Cmic and BSR in comparison with the control ( $P<0,01$ ) at all experimental periods. Moreover, Cmic and BSR in rhizosphere soil were higher than in root free soil at all organic waste application ( $P<0,01$ ). Increased amount of organic wastes had different effects on Cmic and BSR trend ( $P<0,01$ ). The most increases are in the Cmic and BSR in the soil treated with wastes of tea and waste of tobacco production with supplying of low initial C/N ratio compared to the other organic wastes.

**Keywords:** *Organic waste, Soil, Rhizosphere, Microbial biomass, Basal soil respiration.*