



## Appraisal of the black carbon in soils of Harran plain, Turkey

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### Abstract

This study aimed to determine C<sub>org</sub>, C<sub>carb</sub>, and C<sub>rec</sub> quantities, concentrations, and stocks of soils belonging to 16 different soil series in the Harran plain, southeastern Turkey. According to the study, on average of C<sub>rec</sub> content was 0.059%, and the values varied between 0.043- 0.074%. While C<sub>rec</sub> content was found highest in Sırrin and Irice series, the least was found in Akcakale, Akoren, and Kap series. When the soil series were classified in terms of C<sub>rec</sub>/ C<sub>org</sub> ratio, it was highest in Akoren and Kap series and lowest in Irice series. Besides, there was a significant correlation between C<sub>rec</sub> and C<sub>org</sub>, and it was observed that the level of significance was  $r = 0.70$  ( $P < 0.05$ ) and above. However, no statistically significant difference ( $P > 0.05$ ) was observed between Harran and Bellitas, Akcakale and Cekcek, Harran and Begdes and Kap and Harran series. Although most of the C<sub>rec</sub> content in the soil comes from C<sub>org</sub> of organic origin, it was estimated that some of it might be fossil originated and these soils are probably very sensitive to the adverse effects of organic matter decline.

**Keywords:** C<sub>rec</sub>/C<sub>org</sub>, Inorganic C, Organic C, Recalcitrant C, Soil