Abstract

Effect of velocity ratios of a forward rotational-rotary tiller on the distribution of wheat (Triticum aestivum) stubbles incorporated into soil layers was investigated. A 2-year experiment was conducted in a field with silt loam soil on an experimental site at Süleyman Demirel University located near Isparta, Turkey. Velocity ratios of the rotary tiller were maintained at 6.01, 7.51, 9.39, and 11.77. The soil depths studied were 0–5, 5–10, and 10–15 cm. Results showed that there were no significant differences among velocity ratios, and soil depths by velocity ratio interaction means in terms of stubble mass. However, there were significant differences among soil depths means in terms of stubble mass ($P < 0.01$). This indicates that there is no advantage of increasing velocity ratios of rotary tiller to bury more stubble mass into the soil since fuel consumption of the tractor and the power requirement of the rotary tiller increase with increased velocity ratios of the rotary tiller. There were significant differences among the soil depths means in terms of distribution of stubble length at the soil depths ($P < 0.01$). Longer stubbles accumulated at a soil depth of 0–5 cm whereas shorter stubbles were buried in a 5–15 cm soil layer regardless of velocity ratio.