Zinc nutrition of the plant is very important, especially when they are grown especially under Zn-unfavorable conditions such as in Turkish soils. Although there are many factors affecting Zn availability, Zn availability to plants is limited at alkaline pH with high lime content having low organic matter specially. The nutrient concentrations of the different plant rootstocks must also be taken into account for plant growth due to the differences of nutrient concentrations in plants (Giordano and Mortvedt, 1974). In a study, leaf and fruit nutrient concentrations of four apple cultivars grafted on M9, N126M, M106 and MM111 rootstocks showed significant differences among rootstocks and cultivars when they are grown on the same soil (Kılıklumuk and Erdal, 2009). At several studies, different application methods were compared and some noteworthy results were obtained (Arce et al., 1992; Yilmaz et al., 1997; Erdal, 1998; Bahadur et al., 1998; Swietlik, 2002).

Isparta (study district) produces 21% of the total apple production in Turkey. The soil of apple orchards is not favorable for Zn availability, 50% of the orchards are Zn deficient (Erdal et al., 2004). In this study, it is aimed to investigate the effects of different Zn application methods on Zn nutrition and other nutrient concentrations of different apple rootstocks grown on calcareous soil.