Terrestrial nematodes are important organisms for soil quality and biological indicators reflecting soil health. Community structure of terrestrial nematodes directly affects richness and structure of soil health. In this study, the fluctuations of different trophic nematode population densities were followed in organic and conventional apple orchards. Cedar plantation was used as a natural ecosystem and nematode populations were monitored monthly between March 2010 and February 2011. Soil samples were taken as five replications from each orchard. Nematodes were extracted using a modified Baermann funnel technique and nematodes were counted under a light microscope. Different trophic nematode groups were compared on organic and conventional apple orchards by using t-test at 0.05 significance level. Terrestrial nematode biodiversity was analysed using Shannon index (MVSP 3.13P, Kovach Computing Services, 1985). All nematode trophic groups had higher population density in conventional orchard than organic apple orchard in all sampling periods. Predator nematode density was found to be the lowest; however, saprophagous nematodes had highest population density in both cultivation types. Predatory nematodes were generally detected in organic apple orchards. Also, omnivore nematodes had low population density at the same type of orchard. Plant-parasitic nematode populations in conventional orchards were higher than in the organic orchard throughout the sampling period. Nematode biodiversity in conventional orchards was higher than in organic apple orchards. Nematode biodiversity was the lowest in natural cedar ecosystem.