Cinnamon (*Cinnamoum ceylanicum* Blume) is a world-famous spice that belongs to the family Lauraceae. The presence of Cinnamon thrips (*Helionothrips annosus* Wang) in Cinnamon cultivation leads to significant economic losses, as well as growth retardation in the nursery stage. Currently, the most common management measure for cinnamon thrips is the use of insecticides which may lead to severe environmental and health issues. The present study was conducted to evaluate some selected plant extracts against Cinnamon nursery thrips and to determine the effective and optimum concentrations of plant extractions to manage thrips. Ground neem seeds (50 g) and tobacco leaves (62.5 g) were separately dissolved in 1 liter of water and kept overnight and filtered through a muslin cloth and obtained two original extracts. Three concentrations (50 g/l, 25 g/l, and 12.5 g/l) of neem seed extract (*Azadirachta indica* A. Juss.), tobacco (62.5 g/l, 31.25 g/l, and 15.625 g/l) extract (*Nicotiana tabacum*), distilled water (negative control) and ABBA Abamectin recommended concentration (positive control) were used as the treatments. Cinnamon leaves were treated (100 ml) with above three concentrations of treatments separately. Treated leaves were kept in Petri plates and 10 thrips were released to each Petri plate. After 24 hours of introduction, the highest average mortality percentage (93.33 %) was observed in 50 g/l concentration of neem seed extract under in vitro conditions (p-value < 0.05). Fifty percent average mortality was observed in 62.5 g/l concentration of tobacco extract under in-vitro conditions. Therefore, 50 g/l concentration of neem seed extract was effective against the H. annosus population under in-vitro conditions. Further studies are needed to evaluate efficacy of selected plant extracts against thrips in field conditions.