126/B

Effect of fertilizer application on growth performance of Cinnamon *(Cinnamomum verum* Presl.*)* seedlings in nursery

K G Jayatilake* and K G G Wijesinghe
Cinnamon Research Station, Department of Export Agriculture, Palolpitiya, Thihagoda

Key words: *Cinnamomum verum*, fertilizer, growth performance, seedlings potting mixture

In order to maintain good cultivation of cinnamon *(Cinnamomum verum* Presl) in the field for a long period it is necessary to establish a good planting stock in the field. The establishment and survival of the planting stock in the field are mainly depend on the production of good quality planting stock which is mainly influenced by the size and vigor of the seedlings produced in the nursery. Therefore, the objective of this study was to investigate the effect of chemical fertilizers on growth performance of seedlings in the nursery. A net house experiment was carried out at Cinnamon Research Station to determine the effect chemical fertilizer on growth performance of cinnamon seedlings. The experiment was laid out in a Randomized Complete block Design with three replications of each treatment having four pots. Seven fertilizer treatments were allocated to asses the growth performance of seedlings planted in poly pots with soil mixture @ soil: sand in 3:1 ratio and nursery mixture @ Top soil: sand:

cow dung: coir dust in 1:1:1:1 ratio. Treatments consisted of levels of nutrients (N,P,K) of different fertilizer sources i.e., without fertilizer (control), 250 mg N (Urea), 250 mg N (Ammonium Sulphate),250 mg N (Urea)+ 70 mg P(TSP)+160 mg K(MOP), 250 N mg (Ammonium Sulphate)+ 70 mg P(TSP)+160 mg K(MOP) and two foliar sprays (Crop master and T 65 tea mixture). At the end of the nursery periods, plant height, number of leaves per plant, shoot dry weight, root dry weights were measured. Results indicated that application of chemical fertilizer did not significantly increase plant height number of leaves per plant and root dry weight of seedlings. However, shoot dry weight was significantly ($p<0.05$) affected by fertilizer treatments. All the fertilizer treatments enhanced shoot dry weight and root dry weight of seedlings in nursery mixture. The maximum shoot and root dry weight of 1.33 g/plant and 0.41 g/plant were recorded for fertilizer treatment of 250 N mg (Ammonium Sulphate) + 70 mg P (TSP)+160 mg K(MOP) and T65 tea mixture which were increased by 27 % and 24% respectively compared to no fertilized treatment. Results also revealed that nursery mixture highly significantly ($p<0.001$) increased all the growth parameters of seedlings than soil mixture. In comparison with nursery mixture, the soil mixture significantly reduced plant height, number of leaves, shoot dry weight , root dry weight by 26%, 30%, 41% and 17% respectively.

*kamani2005@yahoo.com Tel: 041-2264020