Abstract

One of the main problems of nursery plant production is the proper use of substrates and fertilization routines to achieve morphological and physiological plant quality, to resist and overcome environmental conditions for country establishment. This study evaluated the effects of different levels of slow-release fertilizer on early growth of Cedrela odorata L., in container production. A completely randomized experimental design was used with a substrate composed by sawdust (70%) and a peat moss-perlite-vermiculite mixture -60:20:20- respectively (30%), four levels of slow-release fertilizer Osmocote Plus¿ (12/09/1915) 0, 6, 9 and 12 Kg/m3, as factors. After three and half months plants with fourth fertilization level (12kg/m3) showed the highest values for shoot dry weight, root dry weight, total dry weight, shoot / root ratio, and quality indexes (slenderness and Dickson). Fertilization level 3 (9 Kg/m3 fertilizer) had the highest values for height and diameter. According to results there is a direct relationship between fertilization rate and studied variables, as fertilizer rate increases these will increase too. However, the application of 12 kg/m3 caused a slight phytotoxicity effect leading to decline plant height and diameter, compared with treatment of 9 kg/m3. According this and no statistical significance difference of these two treatments data, 9 kg/m3 treatment is technically the best one in technical and economic sense, because of it implies savings of 3 kg fertilizer per cubic meter in substrate, than of 12 kg/m3 treatment with almost the same results.

Keywords
Substrate, sawdust, fertilizing doses, plant growth.