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SWITCHGRASS BIOMASS AS A SUBSTRATE FOR CAMELLIA AND CUPHEA PRODUCTION IN CONTAINER

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Abstract

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In Spain, most substrates used in the production of plants in containers, are composed of peat in combination with other components such as pine bark, perlite or vermiculite. In order to find alternatives to the use of peat, shredded switchgrass (*Panicum virgatum* L.) biomass was evaluated as a component of the substrates. Five substrates were prepared with the following proportions, by volume, of commercial substrates: switchgrass: 100/0, 75/25, 50/50, 25/75 and 0/100. Pots were filled with the substrates, planted with rooted cuttings of camellia (*Camellia sasanqua* Thunb.) 'Rainbow' and cuphea (*Cuphea hyssopifolia* Kunth.) and placed in a polyethylene greenhouse. The plants and substrates were monitored from April 23rd to August 28th for camellia and from April 23rd to July 23rd for cuphea, until they reached marketable size in 2014. Data were analysed using ANOVA independently for each plant species and the types of substrates were compared with LSD test ($p \leq 0.05$). The tallest plants were those grown in the substrates containing between 0 and 50 % Switchgrass in camellia and between 0 and 25 % in cuphea, probably because of the good values for water holding capacity, total porosity and air-filled porosity of those blends. The density of roots decreased as the proportion of Switchgrass in the substrate increased. Switchgrass substrate can be used as a substrate component for container production of camellia and cuphea plants, when mixed in a proportion of no more than 50 % in camellia and no more than 25 % in cuphea plants.

Key words: biomass, nursery production, ornamental plants, *Panicum virgatum*

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