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COCONUT FIBER AND CARBONIZED RICE HUSKS MIXTURES MAY REDUCE THE USE OF COMMERCIAL PINE BARK SUBSTRATE IN *CATHARANTHUS ROSEUS* AND *ZINNIA ELEGANS*

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Abstract

In commercial production of potted ornamental plants, the substrate is one of the main inputs responsible for plant quality and good acceptance by the market. In this article, we present the potential of waste of coconut fiber (CF) and carbonized rice husks (CRH) as alternative and low-cost growing media for ornamental plant cultivation. Nine substrates were formulated to produce *Catharanthus roseus* and *Zinnia elegans*. The following substrate traits were analyzed: pH, electrical conductivity, water retention capacity, total porosity, dry density, and scanning electron microscopy. Biometric parameters of both species were also evaluated. The substrate containing 50% CF and 50% clayey soil showed 94% similarity to commercial pine bark substrate (CPS), which is a potential substitute. Substrates with water retention capacity between 39 and 59% v v^{-1} improved flower attributes of *C. roseus*, especially the substrate containing 50% CF and 50% CPS. Flower production of *Z. elegans* was improved on substrates that combined porosity from 74 to 85% v v^{-1} and dry density from 300 to 600 kg m^{-3}, mainly substrates composed of 50% CRH and 50% clayey soil, 50% CRH and 50% CPS, and 100% CPS. It is, therefore, possible to replace CPS with CF and CRH completely or partially to produce ornamental plants, acknowledging that the ideal characteristics of the substrate may vary from species to species.

Key words: Catharanthus roseus, flower production, protected cultivation, *Zinnia elegans*

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