

# 17<sup>th</sup> Academic Sessions

*"Innovation and Creativity for Social Well-being"*



## Abstracts

**04<sup>th</sup> March 2020**  
**University of Ruhuna**

ISSN 2362 - 0412





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## Hydrophobic Effects on Water Retention in Potting Media

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### Abstract

Potted plant industry in Sri Lanka has been developed rapidly and is more famous among farmers. Potting media act as the backbone of the potted plants by providing water, nutrients and physical support to them. Development of water stress condition by surface evaporation is an identified key issue in some common potting media. Soil water repellency restricts spontaneous water penetration. The objective of this study was to identify the evaporation level changes with the time in different potting media by adding hydrophobic organic matter. Dried leaves of *Casuarina equisetifolia* (*Casuarina*) and *Pinus caribaea* (*Pinus*) were used as hydrophobic organic matter and they were incorporated separately in two levels (10% and 20%) into potting media. Each potting mixture was kept in separate open top containers and placed them in the controlled environmental chamber. Moisture content of each potting mixture was measured gravimetrically in regular intervals. *Pinus* has a lower level of water drop penetration time (about 4000s) compared to *Casuarina* (more than 10000s). Moisture content in each sample was rapidly decreased within first few hours (35.6 %, 32.9 %, 26.9 %, 24.4%, etc.) Soil water retention can be increased by adding hydrophobic organic matter. Application of higher rates of hydrophobic organic matter increases the level of soil water retention compared to when they are applied in lower level. Application of *Casuarina* in higher rates shows the highest level of soil water retention than the application of *Pinus*. Adding hydrophobic organic matter helps to minimize the evaporation loss and limit the favorable conditions to develop water stress for potted plants.

**Keywords:** *Soil water repellency, Hydrophobic organic matter, Soil water retention, Casuarina, Water stress*

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