VARIATION OF FLOWER INITIATION AND SOME YIELD ATTRIBUTES OF BLACK PEPPER (*Piper nigrum* L.) UNDER DIFFERENT IRRIGATION LEVELS

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ABSTRACT

Black pepper (*Piper nigrum* L.) popularly known as "king of spices" is one of the earliest spices known to man and is the largest commodity in the international spice trade. Pepper is cultivated over an area of 32,800 ha of Sri Lanka, mostly in Matale, Kandy, Kegalle, Kurunegala and Nuwara Eliya districts. Water scarcity in Dry Zone and some parts of Intermediate Zone has limited the expansion of cultivation and moisture stress may cause variation in yield attributes in black pepper. Identification of optimum irrigation level to get higher yield in black pepper is vital as such information is limited. Therefore, a pot experiment was conducted under protected environmental conditions to find out the variation of yield parameters of black pepper under different irrigation levels. Three irrigation levels (8, 4, 2 L plant^{-1}) were applied weekly to the selected 3 year old black pepper vines of MB-12 variety. There were 3 replicates, grown in 38.7 L pots containing a potting mixture of Reddish Brown Latosolic soil and Compost at 2:1 ratio. Different yield parameters were recorded. Mean values of yield attributes such as number of spikes per plant (81), spike length (11.76 cm), filling percentage (88.9%), number of berries per spike (87.4), fresh weight of berries of 10 spikes (128.1 g) and dry weight of berries of 10 spikes (37.9 g) were significantly higher in black pepper vines with the irrigation level of 8 L plant^{-1} compared to other two treatments. It was also observed that the yield attributes progressively decreased with decreasing level of irrigation in the study. Therefore, an irrigation treatment closer to field capacity (8 L plant^{-1}) is more suitable to get a higher yield in black pepper and further studies are suggested at field level before making recommendations.

Keywords: Black pepper, Moisture stress, Yield attributes