

EFFECT OF ETHREL ON MALE: FEMALE FLOWER RATIO AND FRUIT QUALITY IN BITTER GOURD

H.G.M.B. Jayasinghe¹, H. Fonseka², H.M.P.S. Kumari² and D.A.U.D. Devasinghe¹

¹*Department of Plant Sciences, Faculty of Agriculture, Rajarata University of Sri Lanka, Puliyankulama, Anuradhapura*

²*Division of Vegetables, Horticultural Crop Research and Development Institute, Gannoruwa, Peradeniya*

Bitter gourd (*Momordica charantia* L.) is a unique vegetable that can be used as both food and medicine. High male:female flower ratio is one of the major problems encountered by commercial growers of this crop. An experiment was conducted to investigate the effect of foliar Ethrel applications viz. 138 ppm, 140 ppm, 142 ppm and 0 ppm at two leaf stage, on male to female flower ratio, yield and quality of fruits, in five bitter gourd varieties namely, *Thinnaweli* white, *Matale* green, MC₄₃, *Palee* and M₁₅, at Horticultural Crop Research and Development Institute, Gannoruwa from March to July, 2015. Treatments were arranged in randomized complete block design with three replicates. Days to 50% flowering, male:female flower ratio, number of fruits per vine, length, diameter and fresh weight of fruits, and hundred seed weight were recorded. All tested varieties performed well at 138 ppm and 140 ppm of Ethrel and the interaction between variety and Ethrel levels were not significant. Vegetative growth and length, diameter and fresh weight of fruits were not significant ($p > 0.05$) among different Ethrel levels. Male:female flower ratio was significantly ($p < 0.05$) different among treatments and the lowest ratio (32:1) was at 138 ppm and 140 ppm, followed by 142 ppm (37:1) and 0 ppm (41:1), respectively. Hundred seed weight was significant ($p < 0.05$) and observed to be in the order of 138 ppm (27 g) and 142 ppm (27 g) > 0 ppm (23 g) > 140 ppm (25 g). Therefore, 138 ppm of Ethrel can be recommended for the varieties tested, to achieve the lowest male:female flower ratio, without any negative influence on vegetative growth and quality of fruits and seeds in bitter gourd.

Keywords: Bitter gourd, Ethrel, Fruit quality, Male: female flower ratio