

## Effect of different nutrient solutions on yield and potato minituber production under aeroponic and hydroponic cultures

Sh. Shokri<sup>1</sup> and M. R. Tadayon<sup>1\*</sup>

(Received: 24 June 2016 ; Accepted : 12 Jan 2017)

### Abstract

In order to investigate the effect of different nutrient solutions on yield and potato minituber production under aeroponic and hydroponic culture, a split-plot experiment based on completely randomized design with three replications was carried out in 2015. The main factor was culture medium (aeroponic and hydroponic) and the sub-factors consisted of nutrient solution (control, Etazu, Etazu+ humic acid, Etazu+ mycorrhiza fungi, compost tea, compost tea+ humic acid and compost tea+ mycorrhiza fungi). Results showed that number of tubers, tuber yield and dry weight of roots under aeroponic culture were significantly higher than the hydroponic culture. Average tuber weight and shoot dry weight in hydroponic culture were significantly greater than the aeroponic culture. Interaction effect of culture system and nutrient solution on number of tubers, average tuber weight and tuber yield per plant was significantly higher in aeroponic culture than hydroponic in compost tea+ mycorrhiza fungi. There was no significant difference in minituber yield under compost tea+ mycorrhiza fungi and compost tea+ humic acid treatments. Shoot dry weight was greater under compost tea+ mycorrhiza fungi treatment in the hydroponic system. Maximum root dry weight under aeroponic system was obtained in the compost tea and compost tea+ humic acid treatments. In conclusion, the results of this study showed that provision of nutrients for potato by mycorrhiza fungi and compost tea, under aeroponic culture, significantly increased number of tubers, tuber yield and shoot dry weight and the compost tea+ humic acid treatment had a more significant role in root growth and tuber production.

**Keywords:** Plant height, Root length, Root weight, Number of tubers.

---

1. Dept. of Agronomy, College of Agric., Shahrekord Univ., Shahrekord, Iran

\* Corresponding Author, Email: mrtadayon@yahoo.com