

GROWTH, YIELD, QUALITY AND STORABILITY OF ONION (*Allium cepa* L.) IN RESPONSE TO FOLIAR APPLICATIONS OF SOME NATURAL ANTIOXIDANTS

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ABSTRACT: *Two field experiments were conducted at the Experimental Farm, of the Faculty of Agriculture, Tanta University, Egypt, during winter seasons of 2012/2013 and 2013/2014. The aim of this research is to study the effect of some natural antioxidants substances, i.e. the extracts of onion, garlic, willow, and green tea, on growth, yield, quality, and storability of onion cv. 'Giza 20'. The natural substances at concentration of 1:20 were applied at 30, 45, 60 and 75 days from transplanting date. The experiment was designed in a completely randomized blocks (CRB) with three replicates. Results revealed that spraying onion plants with the natural substances improved vegetative growth parameters, endogenous phytohormones levels, antioxidant enzyme activities, yield and its components, and storability of onion bulbs. The most pronounced effect was related to the foliar application of willow extract and green tea extract. These two extracts also resulted in the lowest percentage of bulb weight loss and decay during 2, 4, 6 and 8 months storage, in addition to the lowest sprouting percentage after 6-8 months storage, compared to the control in both seasons. In general, foliar application of willow extract or green tea extract can be recommended to improve productivity, quality and storability of onion plants.*

Key words: *onion, garlic, willow, green tea extracts, onion, productivity, storability, Phytohormons.*
