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THE EFFECT OF FOLIAR APPLICATION WITH ATROPINE AND VITAMIN C IN SOME VEGETATIVE CHARACTERISTICS OF CORIANDER PLANT *CORIANDRUM SATIVUM* L.

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ABSTRACT : A field experiment was conducted in the Botanical Garden of the Department of Biology at College of Education for Pure Sciences (Ibn Al-Haitham), University of Baghdad, to study the effect of different concentrations of Atropine (20%, 10%) and Vitamin C (20%, 10%) as well as the control treatment of foliar application in the coriander plant *Coriandrum sativum* L. The results showed a significant effect on the characteristics of plant height, nitrogen and protein concentrations.

Key words : Atropine, vitamin C, *Coriandrum sativum*.

INTRODUCTION

Coriander plant belongs to Apiaceae family and contains volatile oils that give it a strong aromatic scent and a height of plant reached up to 50 cm and flowers are white or pink in color and have small circular fruits (Al-Kateb, 1989).

Coriander plant contains volatile oils of medical and therapeutic benefit, used in the treatment of colic pain and gas repellent, which is an important spice in the opening of appetite and has been used since ancient times (Qubaisi, 2008). Fresh coriander leaves contain vitamins (C, B_6) and are high content in folic acid and volatile oils, with the most important compounds of linalool, purinol. and eucalyptol containing potassium, calcium, magnesium and iron (Tlass, 2010).

Atropine is classified as a natural semi-alkaline compound and is a natural compound because it comes from a plant source and *Atropa belladona* L. plant belongs to Solanaceae family and is a toxic plant that causes high temperature and causes hallucinations when using high doses.

One of the most important chemical compounds isolated and diagnosed from this plant is one of the most important alkaloids, Atropine, which uses an anticholinergic or anti-substance that inhibits the effect of the enzyme that analyzes choline and is mainly used to eliminate intestinal convulsions (Mahmoud, 2008). Atropine is an anti-drug and affects biophysiological processes.

Vitamin C is one of the uncomplicated organic compounds needed by the plant in small amounts and is necessary for the safety of growth and differs from carbohydrates, fats and proteins in that they are not used in tissue building or power generation but are essential in the majority of metabolic processes and are necessary to make the metabolism process natural as well as to ensure the functioning of many enzymes, as the addition of vitamins to plant stimulates growth by activating some enzymatic reactions (Al-Arkawizi, 2016).

Ascorbic acid contributes to the removal of the detoxification effect of reactive oxygen species (ROS) that are formed in photosynthesis and respiration processes. Vitamin C with the chemical symbol $C_6H_8O_6$ is the first line of defense of non-enzymatic antioxidants for cell components such as chloroblast, mitochondria and Peroxisome, and is considered the inhibitory force of cellular membrane oxidation (Quan *et al*, 2008). It has the ability to ROS-scavenger as well as reduce hydrogen peroxide to water by the ascorbic peroxidase enzyme.

Vitamin C is involved in the construction of the cellular wall as well as cell division, as it is a substance reaction to ascorbic peroxidase enzyme which is an important in resistance to stress in the plant, in addition to it is a co-factor in various oxidative and reduction reactions as well as being a non-enzymatic antioxidant. On the other hand, the aggregation of ascorbic acid plays an important role in the inhibition of oxidation and reduction process in the