

ΤΕΧΝΟΛΟΓΙΚΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΚΥΠΡΟΥ
ΣΧΟΛΗ ΓΕΩΤΕΧΝΙΚΩΝ ΕΠΙΣΤΗΜΩΝ & ΔΙΑΧΕΙΡΙΣΗΣ
ΠΕΡΙΒΑΛΛΟΝΤΟΣ
ΤΜΗΜΑ ΓΕΩΠΟΝΙΚΩΝ ΕΠΙΣΤΗΜΩΝ, ΒΙΟΤΕΧΝΟΛΟΓΙΑΣ ΚΑΙ
ΤΕΧΝΟΛΟΓΙΑΣ ΤΡΟΦΙΜΩΝ

Πτυχιακή εργασία

ΕΠΙΔΡΑΣΗ ΕΞΩΓΕΝΟΥΣ ΜΕΛΑΤΟΝΙΝΗΣ ΣΤΟΝ
ΑΝΤΙΟΞΕΙΔΩΤΙΚΟ ΜΗΧΑΝΙΣΜΟ ΤΩΝ ΦΥΤΩΝ
ΜΗΔΙΚΗΣ

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Λεμεσός 2015

ABSTRACT

Melatonin (N-acetyl-5-methoxytryptamin) had been found in all kingdoms. In 1993, it had been found in plants and since then many studies have been done that they cover melatonin's impact on the plants. Melatonin can regulate the immune system of the plants, gene expression of antioxidant enzymes, plant growth, flowering, rizogenesis etc. In this study, we examine how exogenous melatonin works on medicago plants (*M.sativa*) under drought stress. In order to construct the experiment, we tested different concentrations of melatonin to observe in which concentration melatonin has to be applied. Melatonin applied in three concentrations (10, 50, 100 μ M) with two ways; by watering and spraying. Due to our results, the best applied concentration of melatonin is 10 μ M by watering so the current experiment was repeated and we also observed visible results on the phenotype. Pre-treated plants with melatonin had lower content in H_2O_2 and MDA compared with plants that were not treated by melatonin. Lower content in NO and proline were also been observed. Moreover, we measured the activity of the antioxidant enzymes which are involve with RNS and ROS metabolism, like CAT, SOD and NR. As shown from the results, melatonin works as a priming agent and it can be used on plants before drought stress. On the other hand, in this study were described the results of the influence of the different concentrations of melatonin in dark that induce leaf senescence. We measured the chlorophyll content and we observed that melatonin reduce the chlorophyll distraction that had been caused in the dark.