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# Master Thesis Defense

Entitled

***Physiological Parameters, Isoenzymes and Hormonal Profiling in Different Varieties of Date Palm in United Arab Emirates***

by

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Date & Venue

**4:00 PM**
**Thursday, 24 August 2017**
**Room 043, F3 Building**

## Abstract

The present investigation was carried out to explore the physiological changes in early, mid and late varieties of date palms in United Arab Emirates. The concentrations of biochemicals and antioxidant compounds, activities of antioxidant enzymes with their isoenzyme profiles, endogenous phytohormone contents were studied from preflowering, flowering, and post-flowering stages. Two varieties each from early (Shaham, Khanezi), mid (Barhee, Nabthasaif) and late (Khasab, Fardh) flowering types were used in the study. The protein content was higher in early varieties in preflowering stage, but lower in other two varieties. The phenol showed an opposite trend to protein. Ascorbic acid, reduced glutathione and tocopherol showed significant variation in different varieties. Similarly, the antioxidant enzyme ascorbate peroxidase was higher in preflowering stage in all varieties. Superoxide dismutase, polyphenol oxidase and catalase activities were highest in Bharhee for all the stages. Peroxidase activity (POX) was highest in Fardh variety of date palm whereas Khanezi exhibited the lowest. Several isoperoxidases bands were observed in gel electrophoresis at the time of flowering. The phytohormones varied within varieties. The levels of gibberellic acid, indole acetic acid, zeatin, and abscisic acid contents were positively influenced in pre-

flowering and flowering stages due to the flower development process. The hormonal contents showed a transient rise in the preflowering stage and decreased during the flowering time and elevated in the post-flowering stage. This study provided an insight into the possible roles of biochemicals, antioxidants with isoenzymes and endogenous hormones and their interactions in the regulation of flower development in different date palm varieties.

**Keywords:** Antioxidant, biochemical, date palm, hormones, isoenzyme.