**A study on Peroxidase Activity Alterations in Corms of Saffron *(Crucus Sativus L.)* exposed to different H2O2 concentrations and pH measurement during Dormancy and Waking**

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**Abstract**

**Aim and Background.** Peroxidases are one of the most important enzymes that participates in many physiological processes in plants. Peroxidases are heme containing proteins that utilize H2O2 in the oxidation of various organic and inorganic substrates. In this research, the activity of peroxidase, was investigated in *Crocus sativus* L. corms extracts. The activity of peroxidase was studied with different concentration of H2O2 and pH measurement.

**Materials and Methods.** In this study the plant corms were prepared in July as dormant stage and Novamber as waking stage. Corms were used as the enzyme extraction source and was used for further study.

**Results.** The results showed that the optimum pH of enzyme activity in dormancy stage is one unit higher than the waking. The results suggested that increasing concentration of H2O2 up to the 80 mM increases the enzymatic activity and higher concentrations of H2O2 decrease the peroxidase activity.

**Conclusion.** According to the kinetics results, it seems that at least two isoforms of the peroxidases exist in saffron corms and so each isoform could take part in some different processes in growth and development.

**Key words.** *Crocus sativus* L., pH measurement, H2O2 concentration.