

THE EFFECT OF HEMATIN AND MOIST CHILLING ON SEED DORMANCY BREAKING OF *BUNIUM PERSICUM*

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INTRODUCTION

Bunium persicum is an economically important medicinal plant within Apiaceae family (Parvaze et al., 2009). Our knowledge on seed germination of black zira is very nil. Recently is reported that, toxic molecule, carbon monoxide (CO), despite its reputation as a lethal gas, manifests a regulatory function in lateral root development, seed germination other physiological functions. CO is formed from heme molecules in a reaction catalyzed by heme oxygenase (Gniazdowska et al., 2010). Therefore in this research was studied effect of Hematin as an inducer of heme oxygenase- 1 (HO-1) and a Co donor, and moist chilling on dormancy breaking of this plant.

MATERIALS AND METHODS

The surface- sterilized seeds were grown in factorial experiment in randomize completely design using 6 replications. Factors were included: cold period in 5°C (0,2,4,6,8,10,12 weeks) and hematin concentrations (0,50,100,200 µM).

RESULTS AND DISCUSSION

The results showed that without hematin treatment, 12 weeks pre chilling was necessary for achieving of 80% seed germination, but the addition of 100 µM hematin reduced essential moist chilling period to almost half. However application of of hematin alone did not have significant effect on seed dormancy breaking and could not replace total of need for pre chilling.

Keywords: Black zira, Hematin, seed dormancy, moist chilling

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