



University of Zabol
Graduate School
Faculty of Agriculture

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The Thesis Submitted for the Degree of M.Sc

(in the field of Plant Pathology)

The inhibitory effect of extract of some medicinal plants on growth of *Fusarium graminearum* and expression of some genes in *deoxynivalenol*, *butenolide* and *fusarin C* biosynthetic pathway

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Abstract:

Fusarium graminearum causative agent of blight is the cluster in wheat, which is one of the important diseases of this strategic crop. This fungus produces trichotoxins such as ziralenone and doxynivalenol, which cause problems for humans and animals. In this study, the effect of sage extract, asparagus, and sour tea on growth contro *F. graminearum* expression *TRI4 TRI9, FG08079.1*, and *PKS10* are in the biosynthetic pathway of the synthesis of *doxynivalenol, biotenolide* and *fusarin C*, were investigated. After growing in the environment Potato_ Dextrose_ Broth Minimum inhibitory concentration (MIC) Fungal growth under the influence of extracts was measured by plate microtiter method. Expression of genes *TRI4, FG08079.1and , PKS10* With technique Rea_ time _PCR Was evaluated. The least sour tea extract MIC (200 mg / ml) and the highest fungicidal properties *F. graminearum* Sezbania and asparagus extracts the most Sezbania and asparagus had the highest MIC (400 mg / L) Expression of *TRI4, FG08079.1* and *PKS10* genes was significantly reduced by sour tea extract. The results of this study showed that sour tea extract has fungicidal properties and growth control of fungus. *graminearum*. reduces the expression of major genes in the synthesis pathway of *doxynivalenol, biotenolide* and *Fusarium C*.

Keywords: Medicinal plant extract, *Toxin*, gene expression, *Fusarium graminearum*