

园艺—研究报告

草茎点霉粗毒素的产生条件及活性测定

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摘要:

为了寻求能够充分发挥草茎点霉粗毒素活性的最佳培养条件,笔者利用有机溶剂萃取草茎点霉发酵液,获得粗毒素,采用针刺法、种子萌发法确定草茎点霉毒素合适的提取条件及对鸭跖草的致病性。结果表明:草茎点霉胞外毒素活性较高,3种有机溶剂中乙酸乙酯萃取效果最好,产毒的最佳条件为:培养温度32℃、培养时间14天、培养方式为150 r/min震荡培养。粗毒素浓度在1000 μg/mL时种子萌发抑制率为26.09%,病斑面积达到6.85 mm<sup>2</sup>。萃取毒素采用有机溶剂的种类以及培养温度、培养时间、培养方式对草茎点霉粗毒素的活性影响很大。

关键词: 产毒活性

Activity and Producing Conditions of Phoma herbarum Toxin

Abstract:

In order to determine the optimum culture conditions of Phoma herbarum for the toxin production, the author acquired the crude toxin of the Phoma herbarum by the way of organic solvent extraction, and the extraction condition was optimized by the seed germination and seedling stage stabbing inoculation. The results showed that this crude toxin showed high inhibitory activity, and the best extract organic solvent was ethylacetate. Besides the best conditions of toxin production of this strain were as follows: the fermentation temperature was 32℃, culture time was 14 d, agitation was 150 r/min. The seed germination rate was 26.09% and the lesion area of the leaf reached 6.85 mm<sup>2</sup> when the concentration of toxin was 1000 μg/mL. Obvious difference of herbicidal activity is shown with different extract organic solvent and culture condition which exerted a great influence on the activity of the crude toxin of Phoma herbarum. Key words: Phoma herbarum; toxin; Toxin-producing activity

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