

农业生物技术科学

香菇菌株的脱毒研究

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摘要:

香菇具独特香味且有多种保健功能,是我国栽培的主要食用真菌之一。但近些年我国大陆部分产区出现了不同程度的香菇病毒病,使香菇的产量和质量受到明显影响,重者绝收,损失严重。通过试验发现病毒在香菇中是普遍存在的。本文选取3株带毒香菇菌株,采用菌丝尖端挑取法(挑取长度小于0.2mm的菌丝尖端)进行脱毒。结果显示:通过菌丝尖端挑取法,获得一株无毒菌株(不含dsRNA条带),和一些未完全脱毒菌株(含1条11kb的dsRNA)。对脱毒不彻底菌株、脱毒彻底菌株以及带毒菌株分别进行了生物学特性,纤维素酶、木聚糖酶、漆酶和多酚氧化酶活性的测定,发现在pH值8时,脱毒菌株的生长速度比带毒菌株快,脱毒菌株的漆酶和多酚氧化酶活性明显大于带毒菌株,而纤维素酶和木聚糖酶则没有显著区别。通过栽培实验,发现:三个菌株的子实体产量没有显著差别。

关键词: 食用菌病毒 香菇 dsRNA 尖端脱毒 酶活 生物学特性

Studies on Virus-free of Lentinula edodes

Abstract:

with unique fragrances and a variety of health functions, Lentinula endodos is one of main cultivated mushroom in China. However, in some regions of China in recent years have witnessed varying degrees of mushroom virus disease,causing severe influences in yield and quality. Through experiences it showed that the virus is widely existed in Lentinula edodes.Three Lentinula edodes strains were selected to eliminate virus by picking up hypha tips(less than 0.2mm in length) . The results showed that:some strains with one band of dsRNA (11kb) left in Lentinula edodes strains were got, which called incomplete eliminated strain. only one strain was got with no dsRNA in it ,which called virus-free strain. the virus-elimination rate is very low by this method. The growth rate of the three kinds of strains in different pH were measured, it showed that the virus-free strain grew faster than virus-infected strain in pH 8 condition. cellulase, xylanase, laccase and polyphenol oxidase activity of the three kinds of strains were mensurated ,the result showed that the enzyme activity of Laccase and Polyphenol oxidase in virus-free strain were higher than that of virus-infected strain.Through the cultivation experiments ,the fruit body of virus-free strain is hypertrophy than others, and with a stronger anti-pollution ability.

Keywords: mushroom virus Lentinula edodes dsRNA virus elimination technique of hypha tip enzyme activity biological characteristics

收稿日期 2009-11-02 修回日期 2009-11-26 网络版发布日期 2009-12-20

DOI:

基金项目:

福建省科技重大专项

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