# 罗伦隐球酵母对草梅采后灰霉病害的生物防治

# Postharvest biological control of gray mold rot of strawberry with Cryptococcus laurentii

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英文关键词：strawberry; gray mold; postharvest rot; biocontrol; Cryptococcus laurentii

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中文摘要：

测定了罗伦隐球酵母对草莓采后由灰葡萄孢霉引起的灰霉腐烂的抑制效果。在马铃薯葡萄糖琼脂固体培养基（PDA）体外抑菌实验中，把生长有罗伦隐球酵母的营养酵母葡萄糖固体培养基(NYDA)切块放置在涂布有灰霉孢子的马铃薯葡萄糖琼脂固体培养基上一起培养，罗伦隐球酵母并不能抑制霉菌的生长；而在马铃薯葡萄糖液体培养基(PDB)体外抑菌实验中，罗伦隐球酵母活细胞有效地抑制了灰霉孢子的萌发。酵母细胞菌悬液对灰霉的抑菌效果好于酵母培养液，而酵母热杀死液和滤液没有抑菌作用。酵母菌悬液的细胞浓度对其抑菌作用有显著的影响：无论草莓在20℃条件下贮藏3 d或是在2℃条件下贮藏20 d，应用在草莓上的酵母细胞浓度越高，则草莓的霉变率越低。罗伦隐球酵母菌悬液对草莓整果储藏自然条件下霉变的抑制试验也有类似的结果。因此，罗伦隐球酵母可以代替化学杀菌剂作为草莓采后的霉菌抑制剂。

英文摘要：

Cryptococcus laurentii was evaluated for its activity in reducing postharvest gray mold decay of strawberries caused by Botrytis cinerea. In the test on PDA (potato-dextrose agar medium) plates, agar disks of C. laurentii NYDA (nutrient yeast dextrose agar) cultures placed on PDA plates seeded with pathogens did not inhibit the growth of B. cinerea. Spore germination of pathogens in PDB (potato dextrose broth) was greatly controlled in the present of living cell suspensions of Crytococcus laurentii. Washed cell suspensions of yeast controlled gray mold better than yeast in culture broth. Treatments of wounds with autoclaved cell cultures or cell-free cultures filtrate did not prevent decay. The concentrations of antagonists had significant effects on biocontrol effectiveness: the higher the concentration of the antagonist, the lower the disease incidence regardless of whether the fruit was stored at 20℃ for 3 days or 2℃ for 20 days. The experiments of reducing natural decay development of intact fruit gave similar result. Thus, C. laurentii could be an alternative to synthetic fungicides for control of postharvest gray mold disease on strawberries.

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