

Gram-Positive Bacteria Associated with Rice in China and Their Antagonists Against the Pathogens of Sheath Blight and Bakanae Disease in Rice [PDF]

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摘要: It is necessary to understand the bacterial populations associated with rice so as to provide more information and natural resources for effective management of major diseases in rice. A survey on screening and identification of gram-positive bacteria was conducted during 1998–2004. Seven hundred and fifty-six rice samples were collected from Zhejiang, Jiangsu, Fujian and Yunnan Provinces, China. Over 1000 bacterial isolates were isolated and tested for colony morphology, pathogenicity, and some characteristics of bacteriology including Gram staining, fluorescent pigment on Kings medium B and microscopic observation for endospore. Together with five standard reference strains, 74 representative gram-positive bacterial isolates were confirmed by Biolog and gas chromatographic analysis of fatty acid methyl esters. Five bacterial species of Bacillus and other three genera were identified and isolates from Bacillus subtilis and Bacillus megaterium, exhibited the most effective inhibition against the pathogens of sheath blight and bakanae disease of rice. A few isolates from Bacillus pumilus and Bacillus megaterium showed weak virulent on rice together with some virulent isolates, risk should be considered when isolates from these species were screened for biocontrol agents.

关键词: bacterial identification; bacterial population; antagonistic bacteria; sheath blight; bakanae disea  
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