Pengaruh penambahan kitin koloidal 10% pada medium pertumbuhan terhadap kemampuan Metarhizium majus UICC 295 menginfeksi larva Oryctes rhinoceros Linnaeus = The effect of 10% colloidal chitin in growth medium on the pathogenicity of Metarhizium majus UICC 295 to infect Oryctes rhinoceros Linnaeus larvae

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Abstrak

Metarhizium majus UICC 295 adalah kapang entomopatogen yang menginfeksi dan membunuh serangga. Penelitian bertujuan menguji pengaruh penambahan kitin koloidal 10% (b/v) pada medium pertumbuhan terhadap kemampuan M. majus UICC 295 menginfeksi larva Oryctes rhinoceros Linnaeus serta mengetahui pengaruh preservasi dengan freezing pada suhu -80o C menggunakan krioprotektan gliserol 10% (v/v) dan maltosa 5% (b/v) dalam mempertahankan viabilitas M. majus UICC 295. Suspensi konidia/hifa M. majus UICC 295 pada medium Sabouraud Dextrose with Yeast Extract Agar (SDYA) sebanyak 1 x 106 sel/ml mampu membunuh larva 3,33--100% dalam 7--11 hari, sedangkan jumlah konidia/hifa 1 x 107 sel/ml pada SDYA dengan penambahan kitin koloidal 10% mampu membunuh larva 6,67--100% dalam waktu 8--10 hari. Preservasi pada -80o C menggunakan akuades mampu mempertahankan viabilitas M. majus UICC 295, sedangkan preservasi menggunakan krioprotektan gliserol 10%, dan gliserol 10% dengan penambahan maltosa 5% menyebabkan penurunan viabilitas kapang pada medium SDYA dan SDYA dengan penambahan substrat kitin koloidal 10%. Preservasi konidia/hifa M. majus UICC 295 pada kadaver larva yang terinfeksi M. majus UICC 295 dari medium SDYA dengan penambahan kitin koloidal 10% pada -80o C menggunakan akuades, krioprotektan gliserol 10%, serta gliserol 10% dan maltosa 5% mampu mempertahankan viabilitas kapang.

.....Metarhizium majus UICC 295 is an entomopathogenic fungus which is able to infect and kill insects. This research aimed to investigate the effects of 10% (w/v) colloidal chitin in growth medium on the pathogenicity of M. majus UICC 295 to infect Oryctes rhinoceros Linnaeus larvae and to investigate the effects of preservation by freezing in -80o C using 10% (v/v) glycerol and 5% (w/v) maltose as cryoprotectants in sustaining the viability of M. majus UICC 295. Application of conidial/hyphal suspension 1 x 106 cell/ml of M. majus UICC 295 from SDYA caused 3.33%--100% larval mortality within 7--11 days, while application of conidial/hyphal suspension 1 x 107 cell/ml of the mould from SDYA added with 10% colloidal chitin caused 6.67--100% larval mortality within 8--10 days. Freezing of conidia/hyphae of M. majus UICC 295 from SDYA and SDYA added with 10% colloidal chitin preserved in distilled water in -80o C maintained its viability, while freezing of conidia/hyphae of M. majus UICC 295 from SDYA and SDYA added with 10% colloidal chitin preserved in 10% glycerol and 10% glycerol added with 5% maltose as cryoprotectants decreased its viability. Freezing of larval cadaver infected with M. majus UICC 295 from SDYA and SDYA added with 10% colloidal chitin and preserved in -80o C maintained its viability.