

()

Beauveria bassiana

Metarhizium anisopliae

Chilo suppressalis Walker (Lep., Pyralidae)

(// : // :)

(SSB)

()

SDAY PDA

Metarhizium *Beauveria bassiana* (Bals.) Vuill.

anisopliae (Metsch.) Sorok,

(/ ×)

B.bassiana

M.anisopliae

(/ ×)

×

/ / *B.bassiana*

/ / *M.anisopliae*

:

(.)

()

(*Chilo suppressalis*)

B. bassiana

Paecilomyces

()

()

farinosus

()

B.bassiana

()

M. M. flavoviride

()

B. bassiana Hirsutella spp anisopliae

B. Bassiana

spp. Penicillium sp.

B. bassiana

()

Fusarium sp. Aspergillus

B. bassiana

()

Metarhizium B.bassiana,

()

Fusarium oxysporum anisopliae

M.

()

anisoplia

Chilo auricilius , C.

Sesamia inferens infuscatellus

1

5

4

3

2

()

(*C. partellus*)

M.brunncum M.anisopliae B.bassiana

A. A.orgzae A.fumigatus Aspergillus flavus

A. candidus A. bisporus tamaritii

()

()

()

B.

(*C. partellus*)

bassiana

()

B.

Entomophthora sp. M. anisopliae, bassiana

M.anisopliae

1. Boverin

2. Botanicgard

3. Naturalis

4. Mycotrol

5. Metaquino

B. bassiana

SDAY

1

()

()

B. bassiana

()

()

()

B. bassiana

±

(/ ×)

()

()²

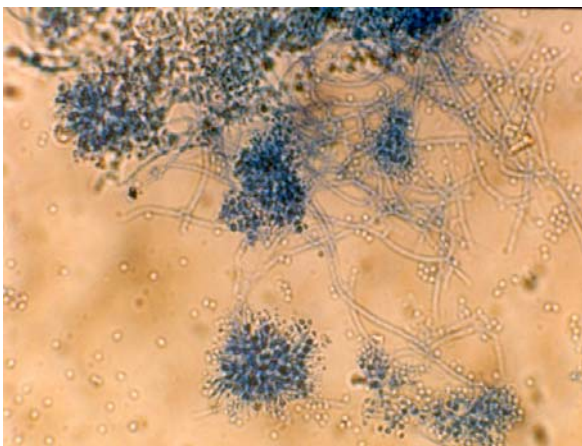
P < %

T-test



SDAY

B. bassiana



B. bassiana

X

B. bassiana

M. anisopliae

() () ()

M. anisopliae *B. bassiana* (Bals.) Vuill.

(Metsch.) Sorok.

1. Tween 80

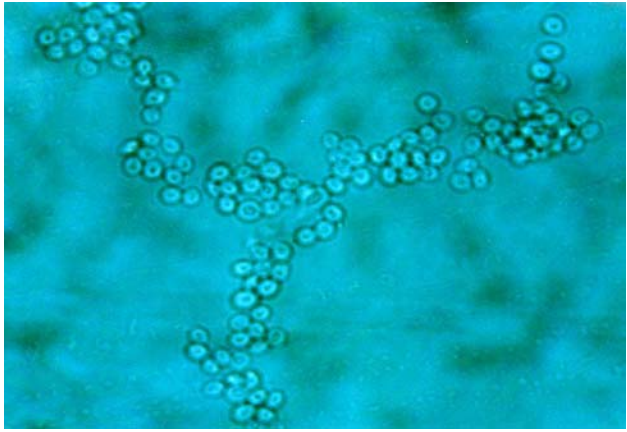
2. Abbott's formula

... :

.()



B. bassiana



B. bassiana

X

=C

= C-T / C ×
=T

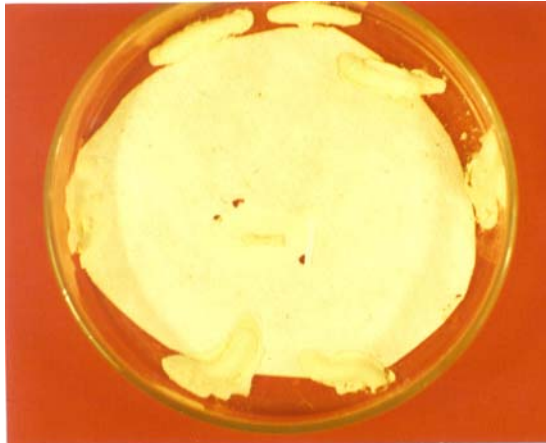
B.

bassiana

()

B. bassiana

.()



B

.bassiana

M. anisopliae
SDAY

B.bassiana

()

()

B.bassiana

(× / /)

()

(/ /)

()

(× /)

()

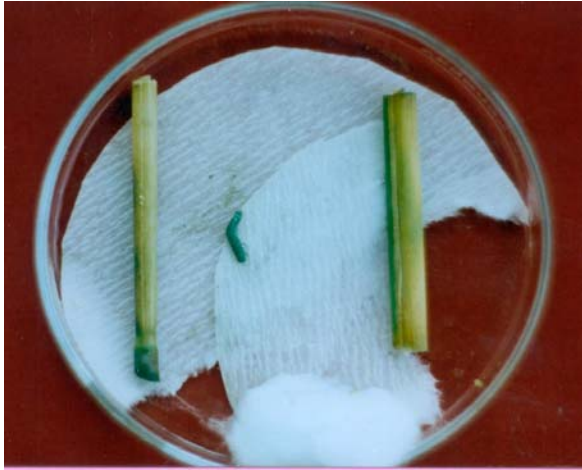
B.bassiana A,B,C,D

/ /

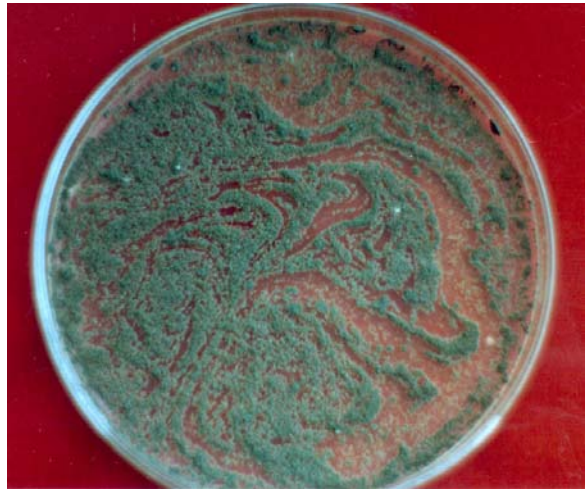
¹PAG

()

()



M. anisopliae



M. anisopliae
SDAY

1

()

M. anisopliae

/

()

M. anisopliae

)

()

(/ / × /

M. anisopliae

() ()

(/ ×)

M. anisopliae

(/)



M. anisopliae

X

M. anisopliae

M. anisopliae *B. bassiana*

/	/	/ a	<i>B. bassiana</i>
/	/	/ a	<i>M. anisopliae</i>
		/ b	Control

P < %

B. bassiana () P < %
A,B,C,D

M. anisopliae *B. bassiana*

E B, A /
/ / / / a /
F b

(*Chilo partellus*)

M. B. bassiana
/ / . *anisopliae*
M. B. bassiana
anisopliae

Pyralidae

()

B. bassiana × *M. anisopliae* ()
B. bassiana

() × (*C. suppressalis*)

B. bassiana
(*C. partellus*)

()

Busseola fusca

M. anisopliae

/ /

M. B. bassiana

anisopliae

B. bassiana

()

/

IPM

REFERENCES

Naranga

- aenescens* Moor (Lep.: Noctuidae)
- ()
- (*Chilo suppressalis* Walker)
- (*Chilo suppressalis* Walker) *Beauveria bassiana*
- ()
- Abbott, W.S. 1925. A method of computing the effectiveness of an insecticide. *J. Econ. Entomol.* 18: 265-267.
 - Ashok, V. & B.K. Tanada. 1996. Pathogenicity of three entomogenous fungi against insect pests of sugarcane. *J. Biologic. Contr.* 10: 1-2.
 - Benham, R. W. & J. L. Miranda. 1953. The genus *Beauveria* morphological and taxonomical studies of several species and two strains isolated from wharf-piliny borers. *Mycologia* 45: 727-746.
 - Cadatal, T.D & B. P. Gabriel. 1970. Effect of chemical pesticides on the development of fungi pathogenic to some rice insect. *Philippine Entomol.* 1(5):379-395.
 - Gardezi, S. R.A. & K. Mahmood. 1998. Some entomogenous fungi, infectious to maize stem borer. *J. Agric. Sarhad.* 14(3): 249-252.
 - Hoog, G.H. 1972. The genera *Beauveria*, *Isaria*, *Tritirachium*, and *Acrodontium* gen. nov. *Stud. Mycol.* 1: 1-41.
 - Itoh, K., K. Ichikawa & T. Nakagome. 1994. Microbial control of insect pests on paddy fields by entomopathogenic fungi, pathogenicity of *Beauveria bassiana* to larvae of the rice stem borer (*Chilo suppressalis* Walker). *Res. Bulle. Aichi- Ken Agric. Res. Cent.* 26: 79-82.
 - Li, H.K. 1987. Comparative trials on pathogenicity of four strains of *Beauveria bassiana*. *Natural Enemies of Insect.* 9(2):78-81.
 - Li, H.K. 1993. Studies on the entomopathogenic fungi infecting rice stem borers. *J. Biologic. Contr. Chinese.* , 9(4)-188.
 - Macleod, D. M. 1954. Investigation in the genera *Beauveria* Vuill and *Tritirachium* Limber. *Can. J. Bot.* 32: 818-890.
 - Maniania, N. K. 1992. Pathogenicity of entomogenous fungi (Hyphomycetes) to larvae of the stem borers, *Chilo partellus* Swinhoe and *Busseola fusca* Fuller. *Insect Scien. Applic.* 13 (5): 691-696.
 - Maniania, N.K. 1993. Effectiveness of the entomopathogenic fungus *Beauveria bassiana* (Bals.) Vuill. for control of the stem borer *Chilo partellus* (Swinhoe) in maize in Kenya. *Crop Protec.* 12 (8): 601 – 604.
 - Maniania, N. K., R. O. Okello, R. O. Oluoch & T. A. Odero. 1994. Potential of entomopathogenic Hyphomycetes (Deuteromycotina) fungi for the control of the stem borers *Chilo partellus* (Lep.: Pyralidae). *J. African Zool.* 108 (6):529- 536.

...

:

18. N'Doye, M. 1976. Influence d'une infection a *Beauveria bassiana* sur les survivants et la descendance de *Chilo suppressalis* (Lep., pyralidae). *Entomophaga* 21: 371-376.
19. N'Doye, M. 1977. The susceptibility of larvae and pupae *Chilo suppressalis* Walker to various entomopathogenous fungi (Fungi Imperfecti) and the factors that determine susceptibility to the mycosis caused by fungi. *Bull. Instit. Fond. Agrique Noire*. 39(2):303-317.
20. Nickel, J. L. 1964. Biological control of rice stem borers, a feasibility study. *Int. Rice Res. Inst. Tech. Bull.* 2. Los Banos, Philippines.
21. Petch, T. 1930. Notes on entomogenous fungi. *Trans Brit. Mycol. Soc.* 16: 55-75.
22. Rao, P.S. 1975. Wide spread occurrence of *Beauveria bassiana* on rice pests. *Sci.* 44: 441-442.
23. Rombach, M. C., D. W. Roberts & R.M. Aguda. 1994. Pathogens of rice insects. In "Biology and Management of Rice Insects". : Heinrichs, E.A. (ed.). Wiley Eastern limited, Intl. Rice Res. Inst. P, 612-655.
24. Samson, R.A. 1981. Identification, entomopathogenic deuteromycetes. In, "Microbial Control of Pests and Plant Diseases". Burges H.D. (ed.). Academic Press, New York, pp. 94-106.
25. Tulloch, M. 1976. The genus *Metarhizium*. *Trans. Brt. Mycol. Soc.* 66: 407-411.

