AGROORGANICS

Bio-Insek

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BEWYS VAN SISTEMIESE AKSIE VAN BIO-INSEK(*Beauveria bassiana*) BY MIELIES

Deur middel van lig- en elektronmikroskopiese studies, is waargeneem dat spore van *Beauveria bassiana* wat op mielieplante gespuit is, ontkiem en willekeurig oor die oppervlakte van die blaar gegroei het. Party spore het slegs kort kiembuise gevorm en ophou groei. Sommige spore het kiembuise gevorm wat die blaar se kutikel penetreer het. Penetrasie het enige plek op die blaar plaasgevind. Hife is op verskeie plekke in die xileemweefsel van die blaar waargeneem.

Omdat xileemweefsel regdeur die plant aanmekaar verbind is, verklaar dit hoe *B bassiana* in die plant versprei en algehele beskerming teen insekte bied.

Virulensie studies het getoon dat *B bassiana,* wat so die blaar penetreer het, nie sy virulensie teenoor die mieliestamruspe verloor het nie (Wagner & Leweis, 2000).

Hierdie endofietiese verwantskap tussen die swam en die mielieplant is 'n moontlike bewys dat dieselfde sistemiese beskerming deur *B bassiana* ook by ander plante kan voorkom. **Buiten grondtoedienings vir snuitkewerbeheer, is goeie resultate ook op wingerd teen witluis en bladmyner op uie verkry,** waar die swam, buiten direkte kontak, moontlik ook 'n endofietiese fase gehad het.

Verwysing:

Wagner, B. J., Lewis, C. L. (2000). Colonization of Corn, *Zea mays*, by the Entomopathogenic Fungus *Beauveria bassiana* *App and Environm Microbiology* 66: 3468-3473

PROOF OF SYSTEMIC ACTION OF BIO-INSEK (*Beauveria bassiana*) ON MAIZE

Light and electron microscopic studies proofed that spores of *Beauveria bassiana* germinated on maize leaves and grew randomly across the leaf surface. Some spores formed short germ tubes which elongated only a short distance before terminating growth. Some spores formed germ tubes which penetrated the leaf cuticle. Penetration took place at any site on the leaf surface. Hyphae were observed in the xylem vessels on different sites. Because vascular bundles are interconnected throughout the corn plant, this may explain how *B bassiana* travels within the plant and ultimately provides overall insecticidal protection.

Virulence bioassays demonstrated that *B bassiana* does not loose virulence toward the European corn borer once it colonizes corn (Wagner & Lewis, 2000).

This endophytic relationship between the fungus and the corn plant provides possible proof of systemic insecticidal protection in other plants as well. **Except for soil applications against snout-beetle, good control was also obtained against mealybug on grapevine and leafminer on onions,** where the fungus except for direct contact, also possibly exhibited an endophytic phase.

Reference:

Wagner, B. J., Lewis, C. L. (2000). Colonization of Corn, *Zea mays*, by the Entomopathogenic Fungus *Beauveria bassiana* *App and Environm Microbiology* 66: 3468-3473

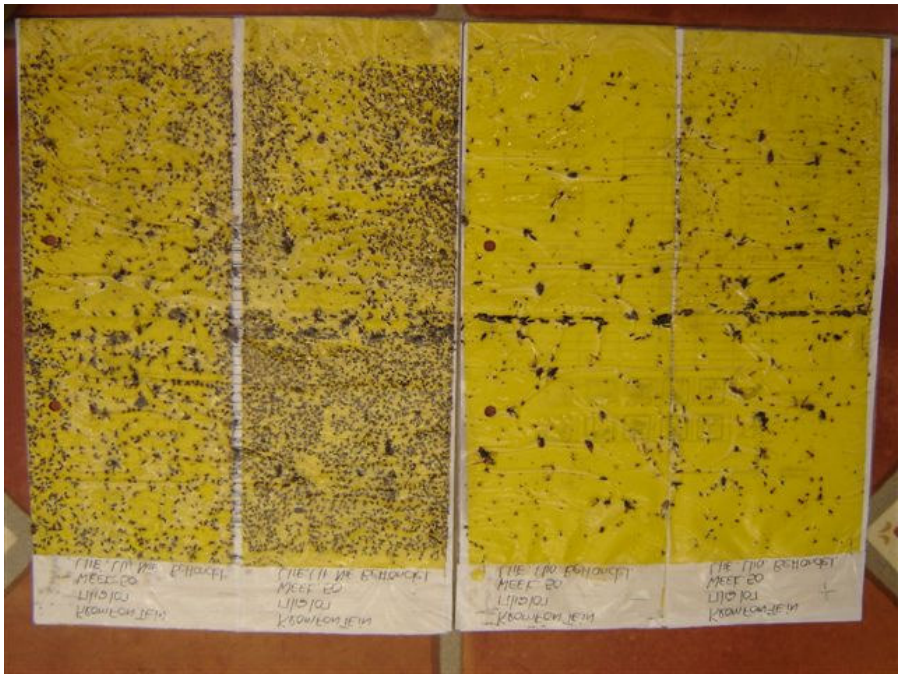

Foto: Links is bladmynervliegie vangste in 'n uie land by die kontrole blok. Regs is bladmynervliegie vangste in die blok waar Bio-Insek weekliks gespuit is.

Photo: On the left is leafminer catches in a onion land in the control block. On the right is leafminer catches where Bio-Insek has been applied weekly.

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