



The Biopesticides Portal

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CABI

- **not-for-profit** intergovernmental organisation, established by a United Nations-level agreement
- owned by **49 member countries**, which have an equal role in the organisation's governance, policies and strategic direction
- **over 500 staff worldwide** in 12 centres
- addresses issues of global concern such as **food security** and **food safety**, through research and international development cooperation
- major publisher of scientific information – books, ebooks, full text electronic resources, compendia and online information resources

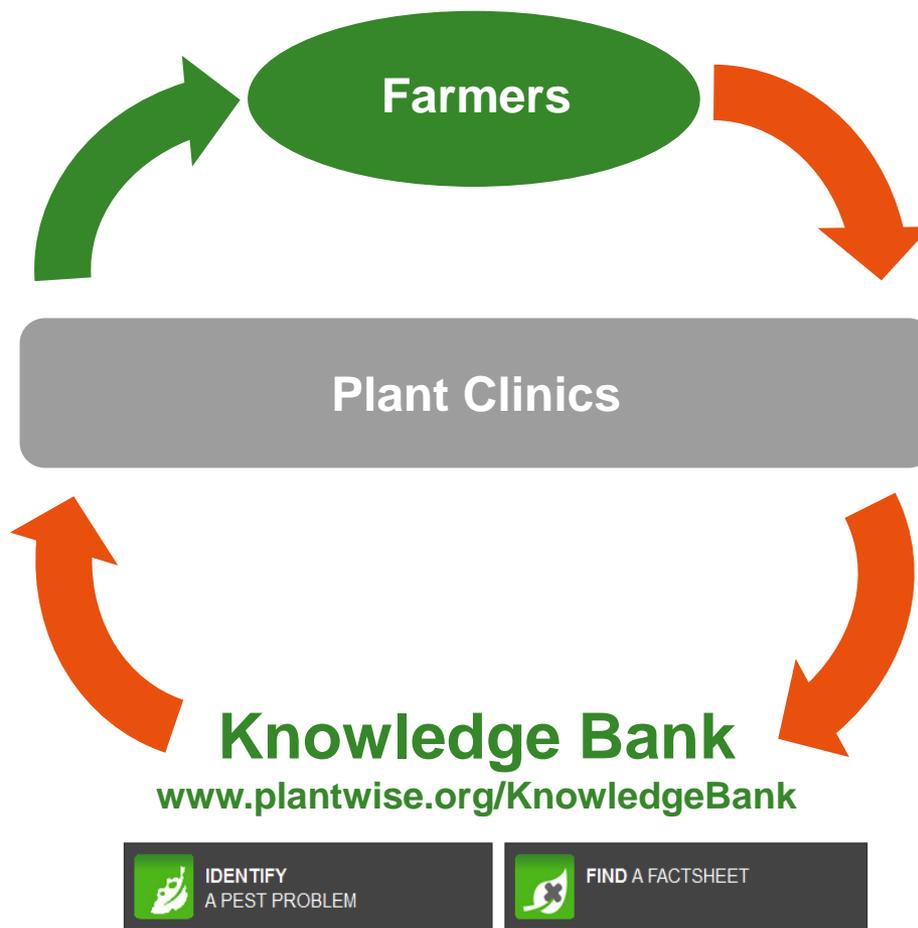
Plantwise – CABI’s flagship programme

Plant clinics are channels for the 2-way flow of information to and from farmers

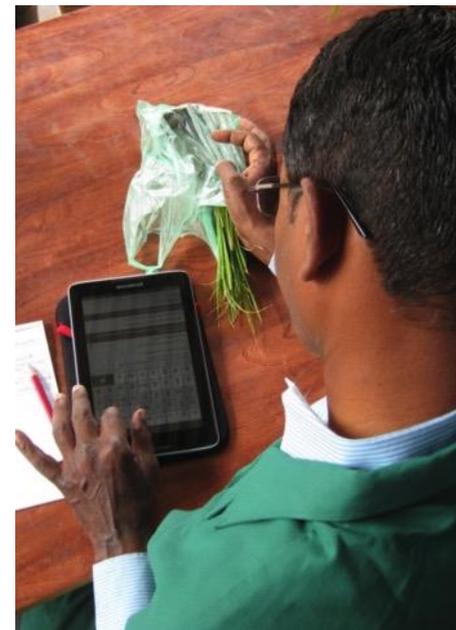
Diagnosis and recommendation



Extension materials and other support tools



Farmer interviews and data collection



Intelligence on pests causing problems



Study to assess the contribution of extension service to the uptake of biological control

- Baseline study in six low- to lower-middle-income countries analysing extension material developed within the Plantwise programme and advice given by extension workers relating to the **management of insect pests using microbial and macrobial biocontrol products**.
- We focussed on the following research questions, among others:
 - Do nationally registered biocontrol products make it into the extension material available to the plant doctors?
 - Where extension material does include biocontrol products, how frequently are plant doctors recommending these products to farmers?

What did we learn from this baseline study?

- Results revealed that nationally registered biocontrol products are not always included in the extension material compiled by national experts in the Plantwise programme; India and Nepal are better in this respect
- Even if biocontrol products are mentioned in the extension material used at the plant clinics, they are only sometimes (or never – in Ghana and Zambia) recommended to farmers by extension workers
- Extension officers have a lack of knowledge / awareness about biocontrol products and their use



- Dougoud, J., Cock, M. J., Edgington, S., & Kuhlmann, U. (2018). A baseline study using Plantwise information to assess the contribution of extension services to the uptake of augmentative biological control in selected low- to lower-middle-income countries. *BioControl*, 63(1), 117-132.
- Publication available open access



How can Plantwise/CABI facilitate improved uptake of biological control products by extension and farmers?

- Create a global database, in multiple languages, to **facilitate the identification, sourcing and application of macrobial and microbial products** for particular crop pest problems in any given country
- Develop a **free to use mobile app and/or website** for use on smartphones, tablets and desktop computers to put information about biological control products at the fingertips of farmers and extension workers, both within and outside of the Plantwise programme

Your one-stop information shop for identifying and sourcing biopesticides

Kenya 

Crop*

French Bean

Pest

Thrips

Manufacturer 

Search 



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Kenya

French B

Thri

Refresh

The following **3** products were found
Select a product to see more information or modify above:

Filter by:

Active ingredient

Manufacturer

User rating

4th filter option



Bb-Plus

Active ingredient: *Beauveria bassiana*
ManufacturerX



Mycotal

Active ingredient: : *Lecanicillium muscarium*
ManufacturerY



Neemazal

Active ingredient: *Azadirachtin*
ManufacturerZ



Description

Related documents (3)

Customer Reviews (346)

Product Q&A (125)

Mycotal



[Go to store](#)

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Active ingredient	<i>Lecanicillium muscarium</i>
Manufacturer	Koppert
Crops	French beans, maize, roses
Target pests	Thrips, Aphids
Mode of action	Stomach poison
Application info	Apply every 7 days
PPE requirements	Gloves, face shield (icons)
Precautions	Do not apply if crop is in flower
Approved for use in	EU Organic

Rate this product: ☆☆☆☆☆

Comment on this product:



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MYCOTAL
KOPPERT 10101

CONTAINS
1 x 100 ml (3.38 US fl. oz.) Laminarium macrurus var. 6
Water (Equisetum Spikes (WS))

IMPORTANT INFORMATION
FOR USE ONLY AS AN AGRO-CULTURAL BIO-PRODUCT

USE: Professional

For control of aphids on protected crops of tomato, cucumber, pepper and chili, ornamental plant production, substrate, ornamental trees, broad beans, French beans, lettuce, squash, aubergine, melon, pumpkin and courgette. Qualified recommendation for those crops for the maximum number of applications per crop.

Maximum individual dose: 2 kg product per hectare
Maximum number of applications: 8 per crop

Other specific restrictions:

1. Maximum concentration must not exceed 1 g product per liter of water.
2. A minimum interval of 7 days must be observed between applications.
3. Treatment must only be made under "permanent protection" situations which provide full enclosure (including continuous top and side barriers down to below ground level) and which are present and have been maintained over a number of years.
4. Reasonable precautions must be taken to prevent access of birds, wild mammals and honey bees to treated crops.
5. To minimise aphid or environmental organisms, weeds, plants and other organisms must be cleared during end of the application until the applied product has fully settled.

READ ALL OTHER SAFETY PRECAUTIONS AND INSTRUCTIONS FOR USE BEFORE USE

BATCH NO

and top

USE BY

date

NET CONTENT

500 g

PRODUCT NUMBER
10101

STORAGE
Keep dry and stored at 2-8°C. Do not keep in damp or wet conditions. Do not freeze.

EXTENDING OR ADJUSTING:
Protected crops of tobacco, broad beans, cucumber, pepper and chili, ornamental plant production, substrate, ornamental trees, broad beans, French beans, lettuce, squash, aubergine, melon, pumpkin and courgette. This is a biological product and its effectiveness is dependent on use conditions for the use of Mycotal. It is important to read and understand other information included on the product label (instructions for use) and the instructions for use of the product for which this system of application has been previously been approved and, as such, the user bears the risk involved in failure to observe the safety and effectiveness.

SAFETY PRECAUTIONS
Contains Laminarium macrurus var. 6: Micro-organisms may have the potential to provoke sensitising reactions.

OPERATOR PROTECTION
WASH HANDS AND EXPOSED SKIN before meals and after work.
DO NOT RE-USE CONTAINER.
WEAR SUITABLE PROTECTIVE CLOTHING (OVERALLS), SUITABLE PROTECTIVE GLOVES AND SUITABLE RESPIRATORY PROTECTIVE EQUIPMENT when handling the product or applying the product.
*Disposable filtering facepiece respirator to at least EN94: 2001 or equivalent.

ENVIRONMENTAL PROTECTION
Do not contaminate water with the product or its container. Do not allow application equipment near surface water. Avoid contamination via drains from farmyards and roads.

STORAGE AND DISPOSAL
KEEP OUT OF THE REACH OF CHILDREN.
KEEP IN ORIGINAL CONTAINER tightly closed, in a safe place. DO NOT RE-USE UNDER LINES FROM CONTAINER.
EMPTY CONTAINER COMPLETELY and dispose of safely.

To avoid risks to man and environment, comply with the instructions for use.

MYCOTAL is a registered trademark of Koppert BV.

DIRECTIONS FOR USE

IMPORTANT: This information is approved as part of the Product Label. All instructions within this section must be read carefully in order to obtain safe and successful use of the product.

Mycotal contains the spores of a specific strain of the entomopathogenic fungus Laminarium macrurus which is highly safe for use. The use of the adjacent ADAS (Approved Adjuvant No. ADAS1) is recommended with Mycotal.

MODE OF ACTION
Mycotal is effective by direct contact, and under the right environmental conditions, kills aphids actively after 7-10 days. Aphids should be kept away and proper care should be taken to avoid injury to the crop. Treat more larvae as they emerge, and treat the plants again. After spraying, the green glasshouse and grow, producing high heat that penetrates the body cavity, where they proliferate, destroying the tissues. The fungus then grows through the tissues and produces spores on the outside of the cadaver, which may spread the infection to other aphids.

ENVIRONMENTAL CONDITIONS
The successful performance of Mycotal is dependent on the suitability of the temperature, relative humidity conditions within the crop cover, and timing of application, and requires the following minimum conditions:
Relative humidity: 70% (when used with ADAS)
Temperature: 10°C (minimum temperature 8°C)

APPLICATION
Apply 1 g/l (0.1 ml) of Mycotal per litre of water with enough water (at 15-20°C) to fill a 100 liter spray tank with required amount of water. Empty spray tank into spray tank and apply well. Add a concentration of 0.25% ADAS (0.25% for the duration of the spray period) and mix thoroughly. Apply immediately after preparation with high volume spraying equipment, to provide more water to the penetration and growth of the spores as well as increasing leaf humidity. Spray during the late afternoon and early evening, allowing the spray onto the underside of the leaves and to the growing points. Good coverage is essential for the best results. Use 200-4 bar spray separator for each meter of canopy height. Keep the spray liquid well agitated.



MYCOTAL



TIMING AND NUMBER OF APPLICATIONS

Mycotal must be used early in the crop when pest numbers are low. For effective control, up to 8 applications per actively infested crop may be made, at 7-10 day intervals, with a maximum of 8 applications per crop.

RESISTANCE MANAGEMENT

Resistance to Laminarium macrurus is not currently known to occur. To minimize the risk of resistance developing, it is good practice to use a range of IPM techniques as part of a planned programme. Blocks of treatments should be alternated with products and techniques with different modes of activity. No more than 4 consecutive applications of Mycotal should be made. It is not advisable to use Mycotal continuously to successive crops within a structure.

COMPATIBILITY - CHEMICAL CONTROL AGENTS

The effects of other pesticides on Mycotal action used on the same crop, have not been fully determined. However, simultaneous use of chemical control agents with Mycotal may be possible provided that products are not tank mixed with Mycotal, and that fungicides are only used up to three days before, or more than three days after, an application of Mycotal.

Do not use any product containing the following as the ingredients in combination with Mycotal: captan, chlorothaloxyl, fenoxystrobin, diflufenican, mefenoxim, mancozeb, penconazole, sulphamethoxazole or thiazole.

COMPATIBILITY

Further evidence suggests that Mycotal has negligible effects on commercially available natural enemies. Good data is available and may be used in conjunction with those with some margin of safety. Before using Mycotal with a particular biological control agent for the first time, growers should consult Koppert NV Ltd.

When using a product in a crop for the first time, always test a small area for compatibility prior to treating the whole crop.

The EC Directive Control of Substances Hazardous to Health Regulations may apply to the use of this product at work.

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KOPPERT BV guarantees that Mycotal is fit for the purpose and conforms to the specifications stated on this label. KOPPERT BV gives no warranty, express or implied, including the use of any commercially available quality and/or fitness for any particular programme using this material, other than those which are stated on this label, and shall not be liable for any direct or indirect damage which results from incorrect use of the product or non-compliance with the directions of its label.



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Potential users

- Farmers and extension workers
- Governmental regulators (pesticide registrars)
- Private sector decision-makers: out-grower schemes, cooperatives, organisations operating voluntary certification schemes
- Biological control manufacturers



Benefits of the Biopesticides Portal

- Awareness raising among farmers and advisors about nationally registered and available biological control products, where to source products and how to correctly store and apply them to ensure efficacy
- Promotion of wider uptake of, and increasing demand for, biological control products on a local level
- Opportunity to analyse biocontrol market through portal analytics
- Awareness raising among regulators about biological control product registrations in other countries
- Potential replacement of highly toxic synthetic pesticides leading to increased availability of agricultural produce with reduced synthetic chemical residues



Funding mechanisms to maintain portal

- The portal must receive funds to ensure it is maintained as a free-to-use, up-to-date and reliable source of biopesticide information
- Two funding schemes are foreseen:
 - *Partnership scheme* – partners to the portal (e.g. private sector biocontrol manufacturers) pay fixed annual partnership fees
 - *Sponsorship scheme* – sponsors (e.g. public sector organisations and private sector agro industries) contribute towards development and maintenance
- Funds received will enable geographic coverage of the portal to be scaled up and its functions to be enhanced

Your one-stop
information shop for
identifying and
sourcing biopesticides



Login

In partnership with the biocontrol manufacturers

- Partners of the portal are given the opportunity to upload information and related documents about their registered products to help ensure their correct use and to facilitate the sourcing of these products
- Links are also provided to the partner websites, product-specific websites and labels
- Such information will potentially lead to greater product sales and enhanced customer satisfaction
- Partners also have the unique opportunity to purchase detailed, geo- and company-specific website and app analytic reports, which offer great advantages for market research and analysis
- Information displayed for products of non-partners includes only the information provided on the national pesticide register

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How will the portal be marketed to ensure rapid and widespread uptake?

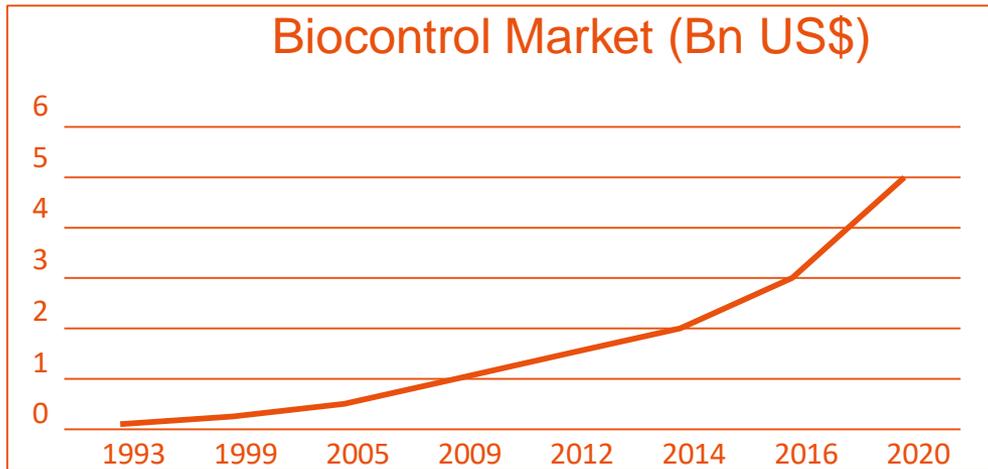
- CABI is in a unique position, being governed by 49 Member Countries and having multiple additional networks of partners for its research, international development and publishing work across the globe
- The portal will be incorporated into CABI's global Plantwise programme, which is active in 34 countries and has reached 18.3 million farmers to date
- We will also encourage partners of the portal to market the tool among their customer base and distributor networks



Next steps to launch final product

- On-the-ground user testing involving relevant stakeholders
- Final decision on the name of portal – Biopesticides Portal vs Biological Control Products Portal vs....
- Firming up of partnerships/sponsorships with biocontrol manufacturers and related agro industries, as well as development cooperation agencies, etc.
- Official launch planned for January 2019 with full functionality and features for Kenya, Spain and Brazil
- By December 2019, the portal will cover 20 countries, which will be selected in collaboration with partners

Market development



Source: Dunham Trimmer LLC

- Market anticipated to reach US\$ 8.8 billion by 2022 and US\$ 11 billion by 2025
- Through the improved knowledge and awareness of farmers and extension agents, the uptake of biological control products could be significantly enhanced, which in turn could contribute to an increase in the global biocontrol market



