



Perspectives of Biocontrol – ASEAN Initiative –

7th Annual Biocontrol Industry Meeting (ABIM)



- 1 **ASEAN-German Cooperation**
- 2 **The Biocontrol Market in ASEAN**
- 3 **Bio-Agro Inputs Association (ABI)**





- International service provider for sustainable development
- Private limited enterprise, non-profit company
- Owned by the German Federal Government



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- 2 bn EUR turnover (2011)
- 17,500 staff, 2,000 projects





❑ Overall objective I (2011-2017)

ASEAN has developed regionally **coordinated policies and strategies** addressing sustainable agriculture and food production

❑ Overall objective II (2011-2013)

“Sustainable **agrifood systems are strengthened** through the use of BCA and sustainable agriculture”

❑ Sub objective 1

ASEAN Member States have developed harmonized guidelines and a **regulatory framework** on the use of BCA

❑ Sub objective 2

The **use of BCA** in ASEAN Member States’ Farming Systems is **promoted**

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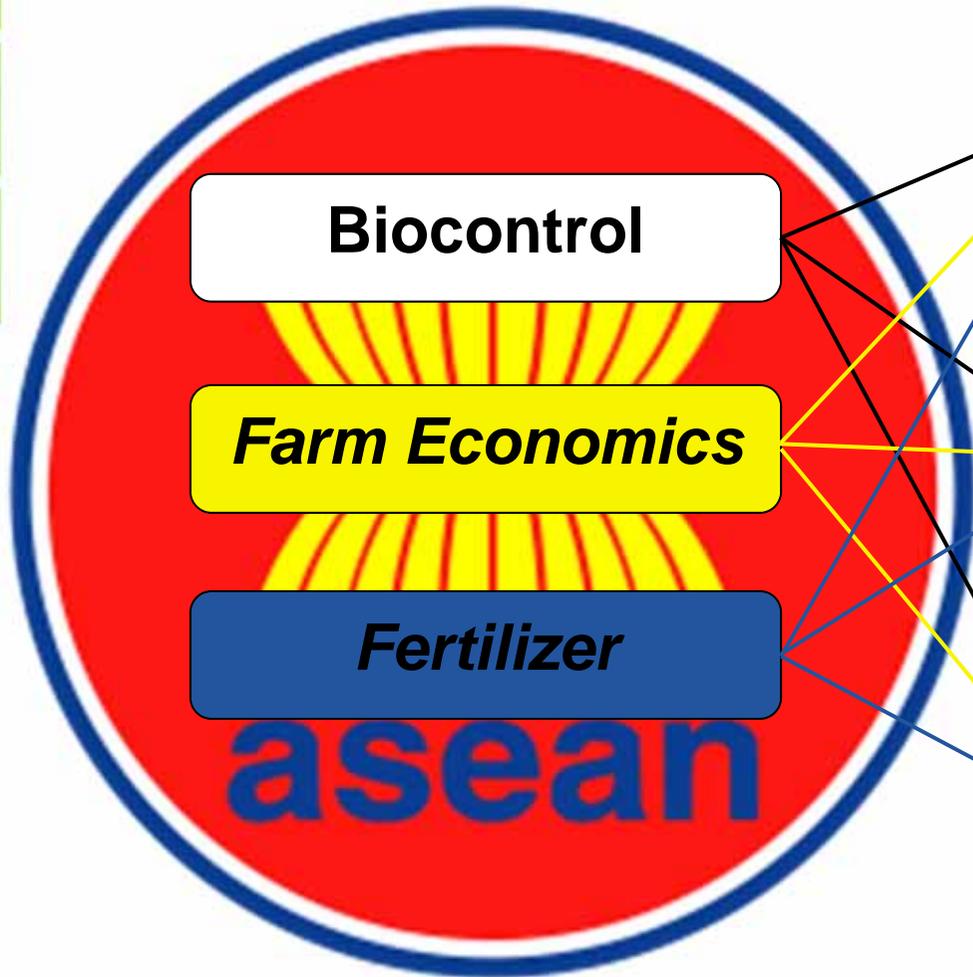
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Priority Topics

Priority Crops



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ASEAN Ministers of Agriculture and Forestry (AMAF)

Senior Official Meeting (SOM-AMAF)

ASEAN Sectoral Working Group on Crops (ASWGC)

Regional Steering Committee (plus National Task Forces)

Project Coordination Unit (PCU)

giz



**AMS Experts
(1 DoA THA)**

**Expert
Groups**

**2 International
Experts (CIM)**

Government

Private Sector

Research

BCA Initiatives/NGOs

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1 Principal Advisor

2

1 Project Coordinator

3

1 Office Manager

2 Advisors/Officers

2 ABC Medan Office

2 PM Private Sector

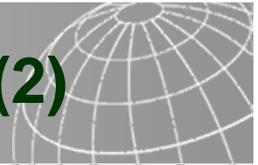


Team of “ASEAN Sustainable Agrifood Systems”



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“One Vision, One Identity, One Community”



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I Harmonization	II Promotion of BCA and sustainable Agrifood Systems	III Capacity Development
<p>ASEAN Guidelines and Regulatory Framework on the use of BCA and other sustainable approaches in agriculture.</p>	<p>Record of regional & national conferences on the application of BCA and sustainable crop management practices on sustainable Agrifood system in ASEAN.</p>	<p>Technical expert groups formed and trained that discuss technical issues related to sustainable agrifood systems and elaborate policy recommendations</p>
<p>Biocontrol Database.</p>	<p>Increased awareness of farmers, government officials to promote the application of BCA and sustainable crop management practices on sustainable Agrifood system, through media and PR Campaigns.</p>	<p>Models for sustainable agrifood systems implemented in collaboration with private sector, NGOs, development projects and technical advisory services.</p>
<p>Expert Groups at regional and national levels.</p>	<p>Common strategy on Sustainable Agrifood Systems.</p>	<p>Trained farmers on sustainable crop management practices, including application of BCA in the above models.</p>



ASEAN Biocontrol Database: Screenshot “Product”



Bio-Input Product

Type of Product	Microbial
Active Ingredient	Bacillus thuringiensis varietas Kurstaki serotype HD-1: 16.000 IU/g
Tradename	Restack WP
Formulation Code	WP
Company	PT. Agrokimindo Kurniabua
Country	Indonesia
Source of product	
Entry date	06.08.2012
Last update	
by PCU member	Hope
Status	available
Product registered?	Yes
Concentration	16,000 IU/mg (25%)
Registration number	RI. 1549/5-2006/T
Date of registration	01.05.2006
Expiry date of regis.	27.06.2011
Product certificate?	
Product-Info link:	

Select product by active ingredient, tradename and company to view entire record!

Bacillus thuringiensis var.ki	Xi-men	Cong ty TNHH MTV Lucky
Bacillus thuringiensis var.ki	Bitadin	Cong ty TNHH Nong Sinh
Bacillus thuringiensis var.te	Bathurin D	Vien Co dien NN & Cong ng
Bacillus thuringiensis varietas Kurstaki serotype HD-1: 16.000 IU/g	Restack WP	PT. Agrokimindo Kurniabua
Bacillus thuringiensis, varietas Kurstaki serotype HD-1: 16.000 IU/g	Bite SC	PT. Agrokimindo Kurniabua
Bacillus thuringiensis, varietas Kurstaki serotype HD-1: 16.000 IU/g	Bite WP	PT. Agrokimindo Kurniabua
Basillus thuringiensis var.ki	Forwabit	Forward International Ltd
Beauveria + Metarhizium + Beauveria	Bemetent	Cong ty hop danh sinh hoc r
Beauveria 10^7 CFU/g + Metarhizium	Thien dich-tang hinh	Cong ty TNHH SX TM Luong
Beauveria bassiana	Bio Kaosida SP	PT. Petrosida Gresik
Beauveria bassiana : 1.005 x 10^7 CFU/g	Bevaria P	CV. Biobrahma Nusantara
Beauveria bassiana : 2.6 x 10^7 CFU/g	Bassiria SL	PT. Tani Mas Subur
Beauveria bassiana 1 billion	Trang xanh	Cong ty Hop danh SH NN Sir
Beauveria bassiana Vuill	Beauveria	Cong ty TNHH TM - DV Than
Beauveria bassiana Vuill	Biobaue	Trung tam NC SX cac che ph

Use recommended in crop: Cabbage

Recommended target/purpose: Diamondback moth; Cabbage head caterpillar

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General Topics

- DOA Thailand training concept **IIS WS**
- ASEAN cooperation and role of national and regional expert groups **IIS**
- Role and purpose of ASEAN guidelines on regulation, trade and use of BCA **IIS**
- Research and field trials in support of guidelines **IIS**
- How to communicate within ASEAN on progress of harmonization? **WS**

Regulation

- BCA Regulation: Stakeholders and regulatory systems worldwide **IIS**
- Towards harmonized guidelines in ASEAN **WS HW**
- Regulatory situation in Thailand and steps towards consolidation **WS HW**
- Data requirements for BCA **IIS WS**
- Other requirements for regulation of BCA **IIS WS**
- How to trade BCA (in ASEAN)? **WS**

Application

- Agriculture without synthetic pesticides? **IIS**
- BCA General Introduction **IIS**
- BCA and IPM **IIS**
- Economics and strategies of technology switch **IIS**
- BCA: Economic facts and success stories **IIS**
- Application strategies and protocols **IIS WS HW**
- Field trials and testing **WS FR**

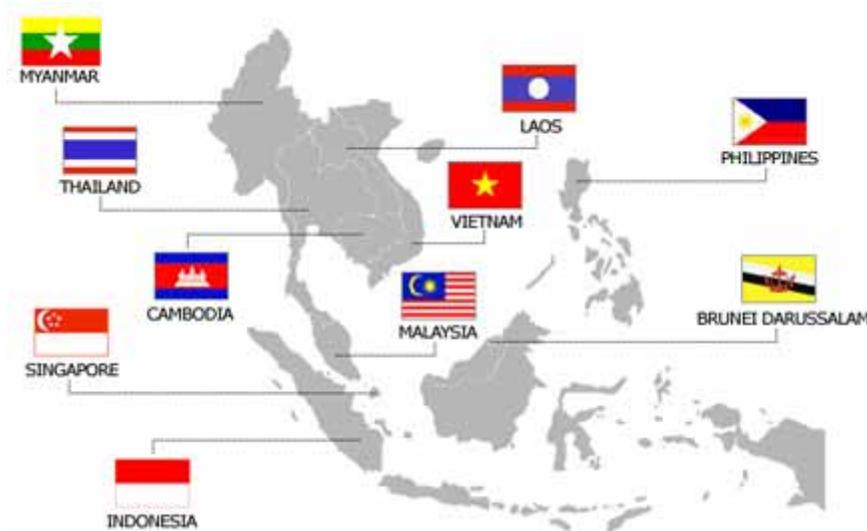


Concerning which crops do you see the most urgent need for BCA application?

Results from needs assessment:

- Rice
- Vegetables
- Coffee
- Fruits (incl. longan, banana)
- Chili, Eggplant (Solanaceae)
- Melon, Pumpkin (Cucurbitaceae)
- Coconut, Palm (Arecaceae)
- Cassava
- Maize
- Timber (Pterocarpus)
- Rain tree
- Orchids (Orchidaceae)
- Sweet Potatoe

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“One Vision, One Identity, One Community”



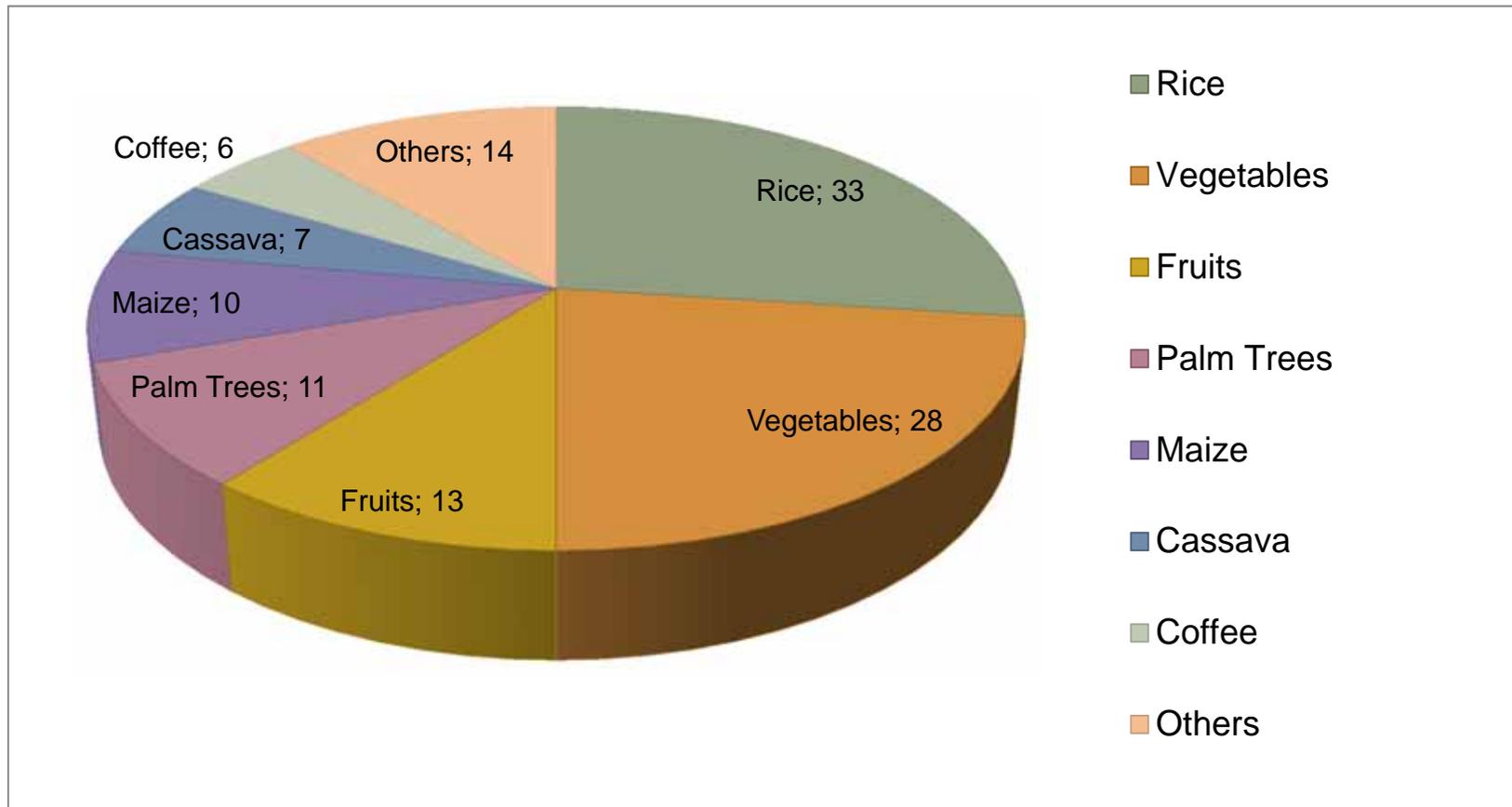
- By priority ranking (1st choice = 5 points; 2nd = 4 points; etc.)
- Number of interviewees = 9 AMS
- National Coordination in “National Task Forces”



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I. RICE

Dominant Pest	Dominant BCA
Brown Plant Hopper (5)	<i>Beauveria</i> (2)
Stem Borer (4)	<i>Trichogramma</i> (2), Pheromone (1)
Fungal disease (4)	<i>Trichoderma</i> (2), <i>B. subtilis</i> (2)
Rat (3)	<i>Sarcocystis</i> (2)

No. AMS in parenthesis

1

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II. FRUITS

Dominant Pest	Dominant BCA
Fruit Fly (3)	Attractant (protein bait etc.) (2)





III. VEGETABLES

Dominant Pest	Dominant BCA
Diamond Back Moth (7)	<i>Bt</i> (6), Parasitoids (3)
Flea Beetle (4)	
Fusarium Wilt & other Fungi (4)	<i>Trichoderma</i> (2)

No. AMS in parenthesis

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IV. Palm Trees

Dominant Pest	Dominant BCA
Rhinoceros Beetle (<i>Oryctes</i>) (5)	<i>Metarhizium</i> (5)
Hispine beetle (<i>Brontispa</i>) (4)	<i>Asecodes hispinarum</i> (3)





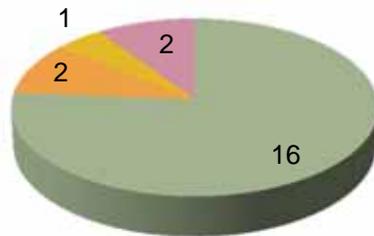
BCA used in major crops (rice, vegetables, fruits)



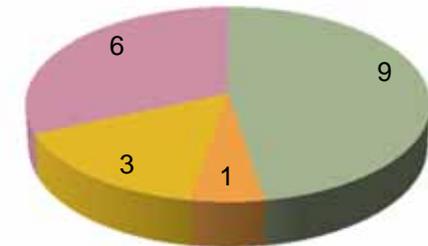
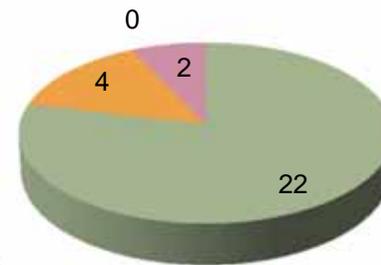
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- Microbials
- Macrobiotics
- Semiochemicals / Attractants
- Botanicals





BCA used/available in the major crops (including palms)



Microbials	No. of citations
Bacteria	19
Entomopath. Fungi	18
Biochemicals	8
Trichoderma	7
Protozoans	3
Baculovirus	2
Subtotal	57
Macrobials	
Parasitoids/Predators	10
Nematodes	1
Subtotal	11
Attractants/Semiochemicals	
Various	6
Botanicals	
Various	10
TOTAL	84

Source: ASEAN Member States (AMS), GIZ

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Market Reality – Focus on microbials and nematodes (according to CPL market research)



Estimated Sales of Microbial & Nematode-Based BCA in Asia/Australasia (as of June 2010)

<i>Sector</i>	<i>Sales Estimate (\$ million)</i>
<i>Bacillus thuringiensis</i> products	74.75 (40 account for China)
Other bacterial BCA	14.05
Fungal BCA	18.85
Viral BCA	23.90
Nematode-based BCA	0.95
TOTAL	USD 132.5

This represents a significant increase in the sales of microbial pesticides since the estimate of \$71.9 million in 2004/5.

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- ❑ Bulk of the world's *Bt* is supplied by two Japanese-owned, American-based, agrochemical companies:
 - Valent Biosciences (owned by Sumitomo Agro)
 - and Certis (owned by Mitsui).
- ❑ Main BCA supply comes from CHN, IND, and THA
- ❑ Some small, local producers (run by governments, cooperatives, or NGOs; pricing at marginal costs)
- ❑ Huge potential for development and use of microbial biopesticides and nematodes
- ❑ Critical barriers to product introduction
 - Oftentimes prohibitive costs for imported BCA
 - BCAs require relatively high level of product support
 - Ubiquity of agrochemicals

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Major Aspects of BCA Usage in ASEAN



- Lack of harmonization and common understanding
- ASEAN Guidelines and Regulations for BCA
- Technical Evaluation (Compliance and efficacy test)
- Post Registration (monitoring, reporting, re-registration)
- ASEAN BCA Database
- ASEAN BCA Expert Groups (regulation, technology)

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- CAM  ➤ Very small market of *Bt*, supplied from VTN
- IDN  ➤ Relatively large pesticide market (USD 200-225 m). Local and imported BCA (USD 2.25 m), vegetables
- LAO  ➤ Not any significant use of BCA
- MYS  ➤ Comparatively large *Bt* market, which appears to have little or no interest in any other microbial BCA
- MYR  ➤ Small user of BCA, mainly sourced from China
- PHL  ➤ *Bt* sells moderately; general lack of interest in BCA and unpopular to farmers (higher cost, slow action)
- SGP  ➤ Moderate (USD 0.75 Mio) *Bt* sales, mosquito control
- THA  ➤ Diverse microbial market but few products used (BCA USD 1 m/Chemical Pesticides USD 280 m)
- VTN  ➤ Relatively large microbial market (USD 5.5-6 m)

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A variety of technologies / BCA products available

All 4 product groups used

- Microbials (dominant)
- Macrobials (government programs: predators, parasitoids)
- Botanicals (mainly neem)
- Semiochemicals (hardly represented)

Promising technologies/products

- Rice: Beauveria (BPH), Parasitoids, Pheromones
- Vegetables: *B. thuringiensis* (DBM)
- Fruits: Semiochemicals (fruit fly etc.)
- Fungal diseases: Trichoderma



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How is the market reality? Do farmers use it?



Bio-Agro Inputs Association (ABI):



- is an industry association;
- has a national registration and a charter;
- is directed towards the commercialization of BCA products.



Agricultural Sustainable Inputs Association (ASIA)



- will be an international/regional network of national associations;
- may possibly have individual companies/institutions as members;
- has a clear objective as partial successor of ABC.

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VISION:

- TO BECOME THE MARKET LEADER FOR SUSTAINABLE AGRICULTURAL INPUTS (SEEDS, ORGANIC FERTILIZER, BIOPESTICIDES) IN ASIA BY 2020.

MISSION:

- TO STIMULATE THE ADOPTION AND ENHANCED USE OF SUSTAINABLE INPUTS IN AGRICULTURE THROUGHOUT ASIA.

SERVICE PROVISION:

- TO PROVIDE MARKET INFORMATION & ASSISTANCE FOR THE REGISTRATION OF BIOLOGICAL INPUTS.
- TO FACILITATE TRAININGS FOR BUSINESS PARTNERS & ASSIST IN BUSINESS MATCHMAKING.
- TO PROVIDE MEMBERS WITH A PLATFORM FOR KNOWLEDGE EXCHANGE & ASSISTANCE IN PRODUCT PROMOTION.

FACTS & FIGURES:

- MEMBERS: OVER 100
- REGISTERED PRODUCTS: MORE THAN 300
- MAIN MARKETS: "ASEAN / ASIA"

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Supported by:



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