



Brazilian Association of
Biological Control Companies

A Brief Update of Biological Control in Brazil

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President of ABC **Bio**



Brazil is known for



But there's much more...



The **Brazil** you must know



Technology, Innovation, Hard Working People

A strong academic base
10,000 doctors trained every year
> 16,000 scientific papers
A growing intensity of industry R&D



Soybeans: 33.2 M ha



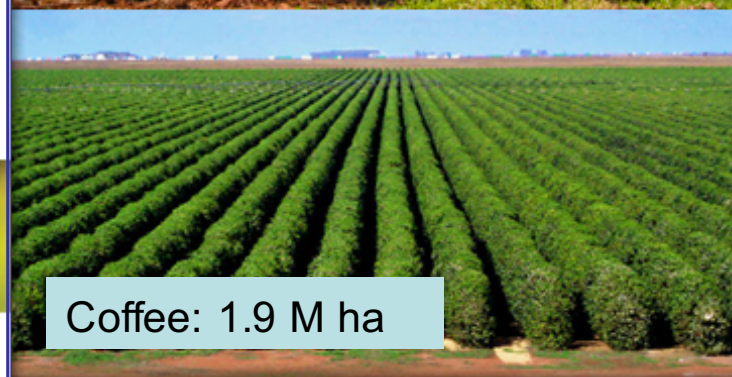
Cotton: 959,000 ha



Orange: 590,000 ha



Corn: 15,3 M ha



Coffee: 1.9 M ha



Sugar cane: 9 M ha

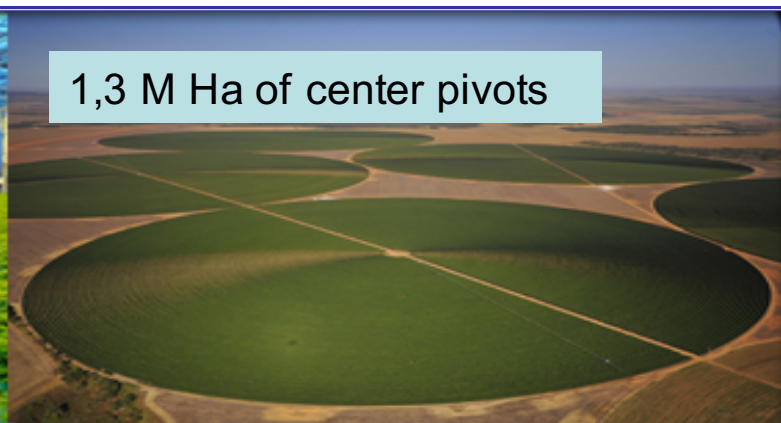




Flourishing fruit and vegetables industry



Strong greenhouse production



1,3 M Ha of center pivots



Farming Technology





Brazilian Tropical Agriculture



Land distribution (Million ha)

Grassland	213
Annual Crops	54
Permanent Crops	15
Sub-total	282
Amazon Forest	345
Conservation Areas	55
Cities, lakes and roads	20
Planted Forests	5
Other uses	38
Areas that are still available for agriculture	106
TOTAL	851



Tropical agriculture favors the occurrence of pests

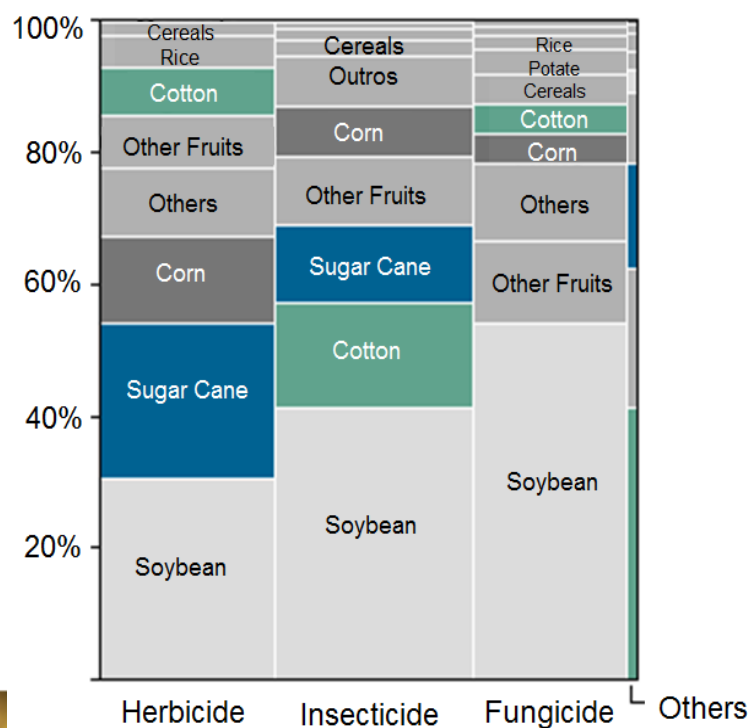




Brazilian Market

Brazilian market overview
US\$B, % (2012)

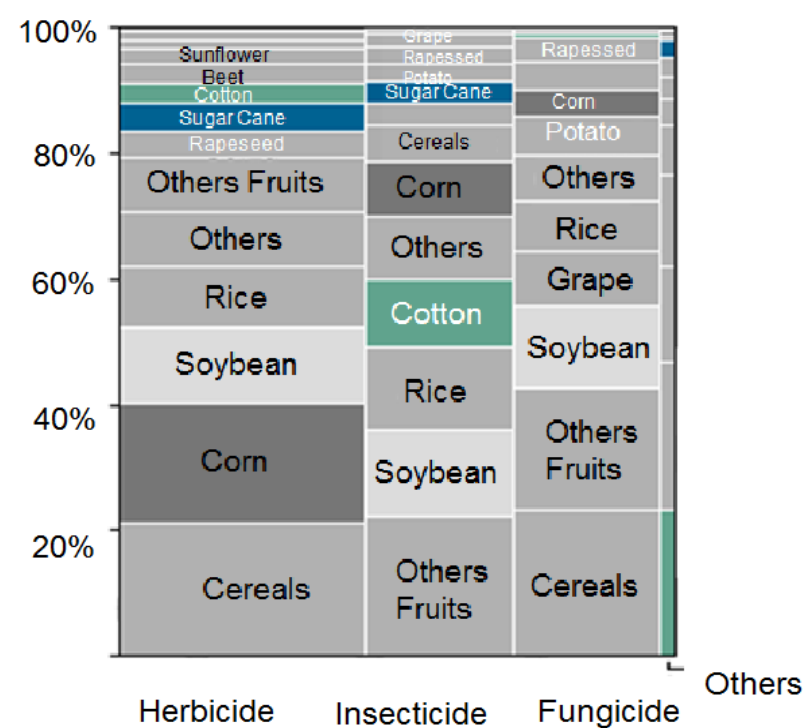
Total = 9,7



Global Market

Global market overview
US\$B, % (2012)

Total = 47,4





Brazilian Association of
Biological Control Companies



About us

Founded in 2007, the mission of the Brazilian Association of Biological Control Companies (**ABCBio**) is to connect the companies, seeking for **strengthening** and the **representativeness** of the sector.





Objectives

- To promote the biological control as a modern and efficient technique, to obtain less aggressive, environmental-friendly inputs;
- To seek legal regulation for the biological industry;
- To congregate companies, government and research for the growth of Biological Control in Brazil.





Memberships





Brazilian biocontrol outlook

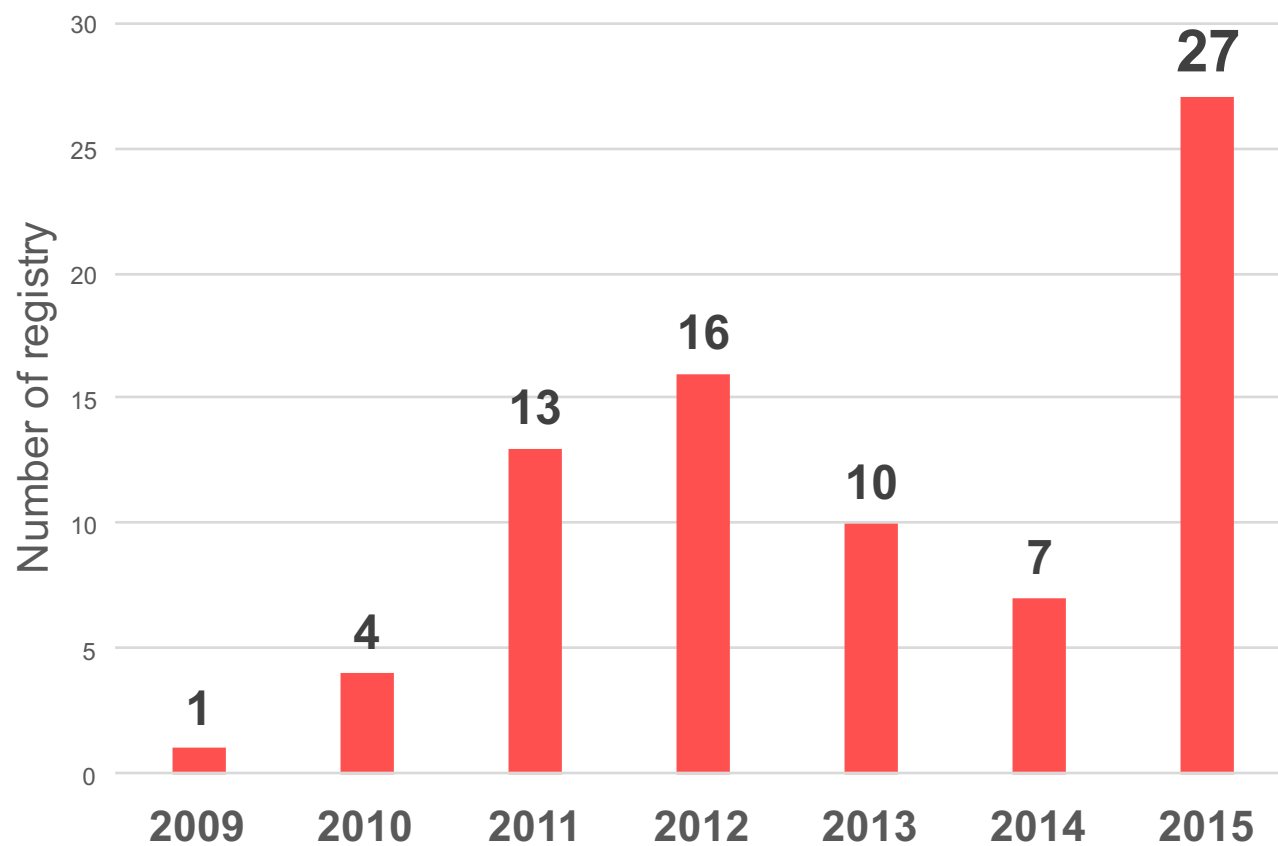
- 51 companies;
- 119 registered commercial products:
 - 84 Microbiologicals : fungi, bacteria and virus
 - 35 Macrobiologicals: parasites, predators and parasitoids

Source: Mapa 2016.



Brazilian biocontrol outlook

Biopesticides Registry Evolution



Source: Mapa 2016.



Registration of Biopesticides in Brazil

Three Federal Agencies Involved

Ministry of Agriculture
(MAPA)

Ministry of Environment
(IBAMA)

Ministry of Health
(ANVISA)





Registration of Biopesticides in Brazil



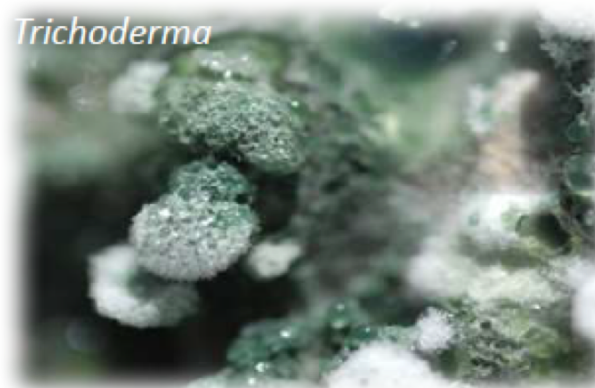
Biopesticides are registered for **target organisms**, thus **allowed** for **all cultures**.





Success and Innovation cases

Microorganisms





Success and Innovation cases

Parasitoids



harvest 2013/2014
1,2 m hectare

harvest 2013/2014
3,3 m hectare





Success and Innovation cases

Sugar Cane





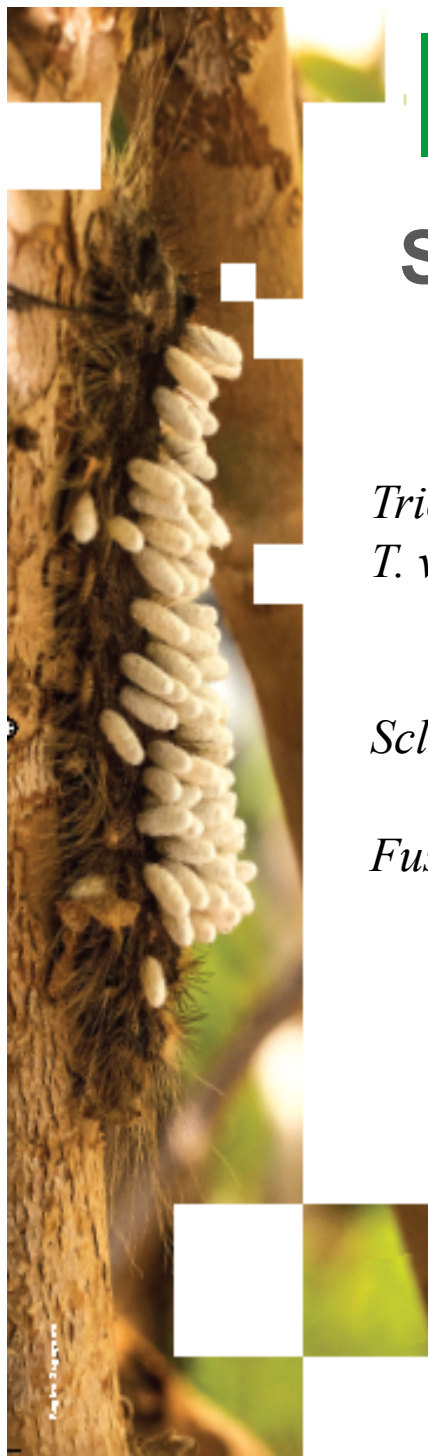
Success and Innovation cases

Soybean and Bean

Trichoderma asperellum, *T. harzianum*, *T. stromaticum*
T. viride.

Sclerotinia sclerotiorum

Fusarium, *Rhizoctonia*, *Moniliophthora perniciosa*

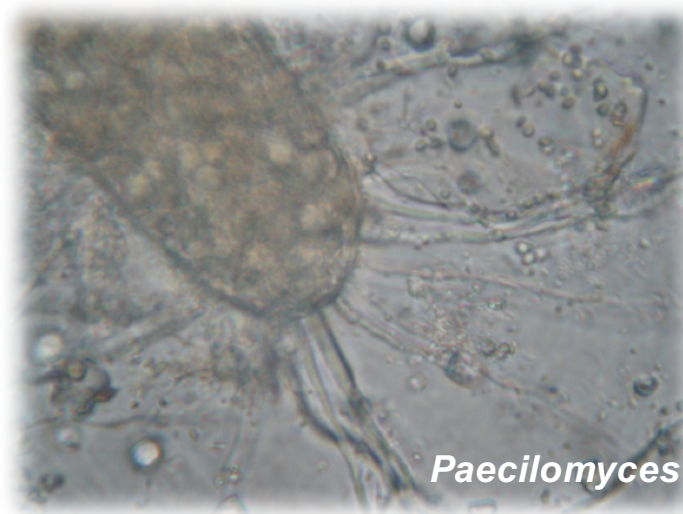
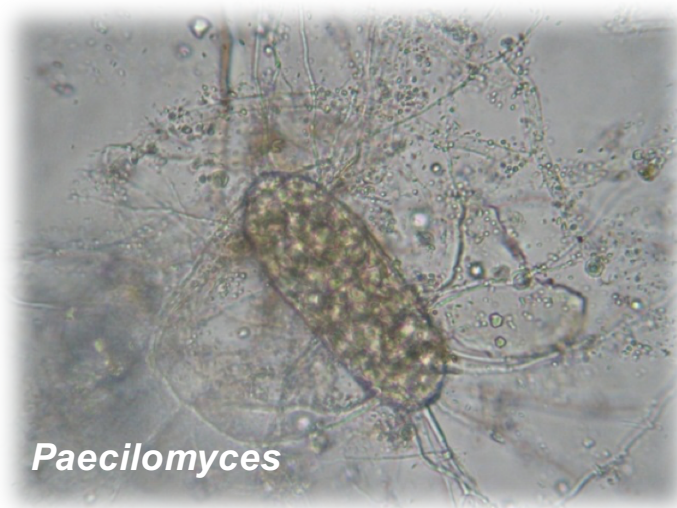




Success and Innovation cases

Soybean

Nematophagous fungi





Opportunity

- **Phytosanitary issues**
 - ✓ *Sclerotinia sclerotiorum* – *Trichoderma* sp.
 - ✓ *Helicoverpa armigera* – *Virus* and *Bacillus thuringiensis*
 - Others caterpillars
 - Nematodes
 - Others Pests (White Fly, Coffee Berry Borer)
- **Major cash crops – Soybean, Sugar Cane, Cotton, Bean, Coffee...**
 - ✓ and the Minor Crops? Potential...
- **Phytosanitary's new threats - Future Possibilities?**





Drivers for biological inputs consumption

- ✔ To extend the commercial life of chemical inputs through rotation or association with biological inputs;
- ✔ To help with resistance management of insects populations;
- ✔ Increasingly credibility as a consequence of scientific research and extension;
- ✔ Better formulation technology and shelf life;
- ✔ Increasingly insect resistance to chemical inputs;
- ✔ Efficient, cost-effective technology;
- ✔ Law enforcement on environment contamination and human health issues;
- ✔ Increasingly concerns of end-consumers and regulatory agencies about chemical residues in food and feed.



Drivers for biological inputs consumption

- Increasingly industrial-scale liquid and solid fermentation facilities;
- R&D strategies leading to the development of more efficient formulated products;
- Regulatory agencies adopting more restrictive standards for the registration of chemical inputs.



BIOCONTROL LATAM

2016 CONFERENCE & EXHIBITION

Tuesday 15th – Thursday 17th November, 2016

Brazil



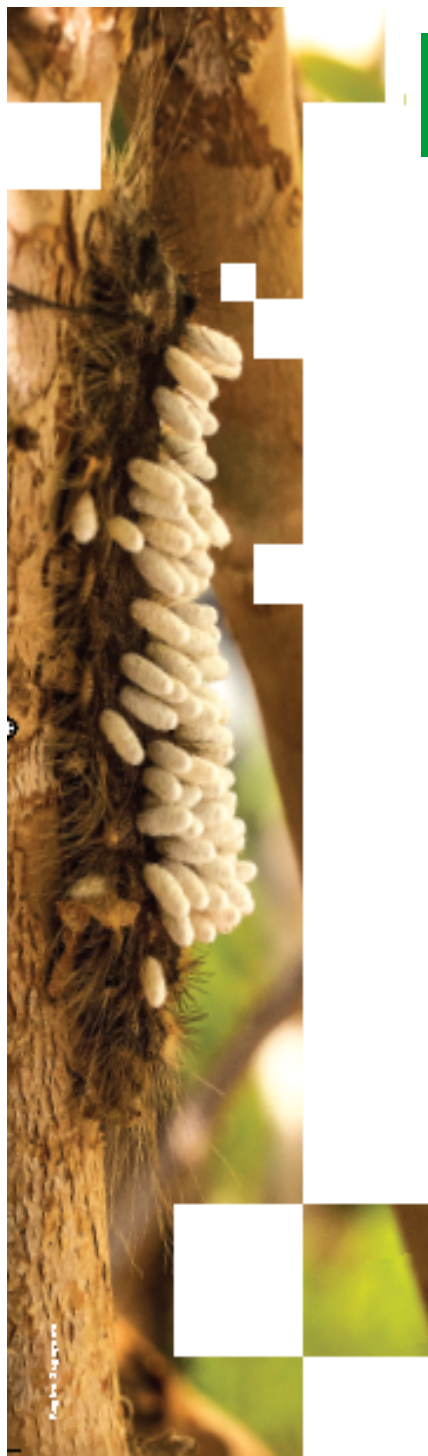
Organized by:



Co-Organized by:



Host Supporting Organization:





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