

# **A Study Visit on Biopesticides**



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# Outline

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- **Visiting Countries and Organizations**
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# Motivation and Objectives

- **Policy**
  - Control pests on organic agriculture
  - Replace chemical pesticides
  - Commercialization
- **Market**
  - Integrated pest management including biocontrol method
  - Safety

# Biocontrol Agents in the World

	2004	2009
• <b>Micro-organisms</b>	112	149
<b>bacteria</b>		
<b>baculoviruses</b>		
• <b>Macro-organisms</b>	127	140
<b>parasitoids</b>		
<b>predators</b>		
• <b>Natural products</b>	58	89
<b>marine crustaceans</b>		
• <b>Semiochemicals</b>	56	74
<b>chemicals</b>		

# Visiting Countries and Organizations

- **Italy**

- European Food Safety Authority

- **United States of America**

- Biopesticides and Pollution Prevention Division (BPPD), Office of Pesticides and Pollution Prevention Division (OPPD), EPA

- **Certis Company USA**

# Expected Outcomes

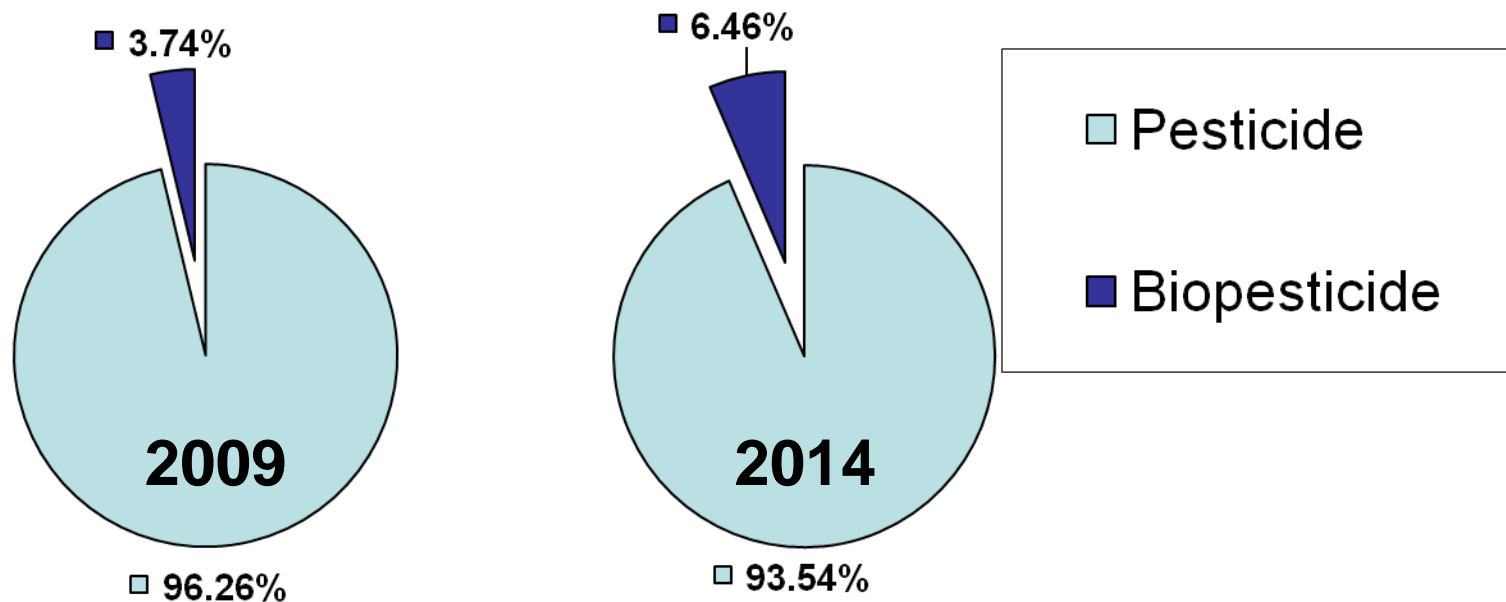
## Learning the Registration Requirements of Biopesticides in Europe and America

**To simplify  
biopesticides  
registration**

**To speed up  
biopesticides  
registration**

**To enhance  
capacity of  
biopesticides  
Industry in  
Taiwan**

# Current Situation of Biopesticides in the World and Taiwan



## Taiwan / 2012

1. The Value of biopesticides was NTD 70 million / year
2. The value of chemical pesticides was NTD 7.3 billion / year

# Biopesticides Registered in Taiwan

	Species		License	Factory owner
Fungicides :	<i>Bacillus subtilis</i>		10	6
	<i>Streptomyces candidus</i>		1	1
	<i>Trichoderma virens</i>		1	1
Insecticides :	<i>Bacillus thuringiensis</i>		24	13
	<i>Spodoptera exigua NPV</i>		1	1
Pheromones :	Tobacco cutworm		3	1
	Sweet potato weevil		2	1
Attractants :	Methyl eugenol		4	4
	Cuelure		3	3
	Pyrethrum		1	1
	Azadirachtin		1	1
	Rotenone		1	1
<b>Total</b>			<b>52</b>	<b>34</b>



# Discussion Topics

- 1. The microbe's complex biological characteristics are difficult to fit the regulation of product specifications, should the registration of biopesticide be reviewed on a case by case basis?**
- 2. The necessity of establishing a single-desk unit to provide a pre-registration consultation and regulation advice**
- 3. To set up the standard procedures of research, invention and registration for enhancing biopesticide commercialization**
- 4. Shall biopesticides be listed as registration-examination pesticides?**



**Thank you  
for your  
attention!**

