

Annual Biocontrol
Industry Meeting
ABIM 2014
Basel, Switzerland
October 2014



Science For A Better Life

FLOCTER™

A biological nematicide for control of plant
parasitic nematodes

Bernhard Hitzberger, Manuele Ricci, Stephanie Sauzay, Helmut Fuersch

ABIM | Basel | October 2014

Plant-Parasitic Nematodes



Today plant parasitic nematodes represent






- **US\$ ~ 100 billion worth of damages**
(low yield, emerging pest)
- **US\$ ~ 1 billion spent on pesticides**
(C. Newitt, 2B Monthly, August 2014)

The control of relevant nematodes is changing

- **Some a.i. are withdrawn from the market due to:**
 - **Risk for the environment and humans**
 - **Biodegradation decreases efficacy**
- **Increased focus and awareness on soil fertility and microflora equilibrium**

Flocter® | Product Profile



-  **A.I. – Spores of *Bacillus firmus* strain I-1582**
Selected for its nematicidal and plant health activities
-  **Formulation – Wettable Powder (WP) 5%**
(3,55 X 10¹² CFU/Kg)
-  **Soil application – 80 kg/ha before sowing/planting or 40+40 kg/ha before and after sowing/planting**
-  **Exempt from residue tolerance**
-  **Strong fit with Integrated Pest Management (IPM) practices**
 - **No impact on beneficial insects when used as directed**
 - **No PHI intervals**

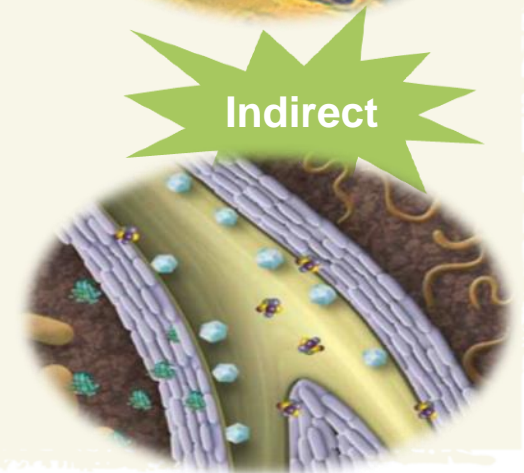
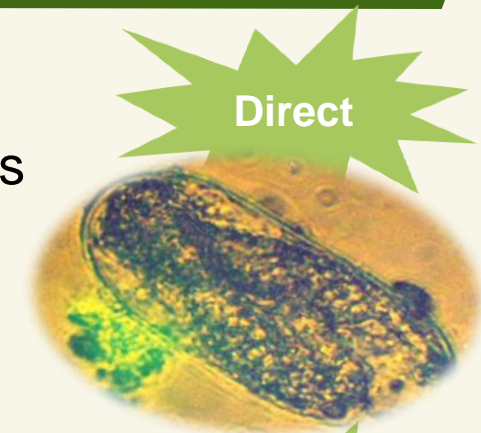
Complex mode-of-action with direct and indirect activity

Direct

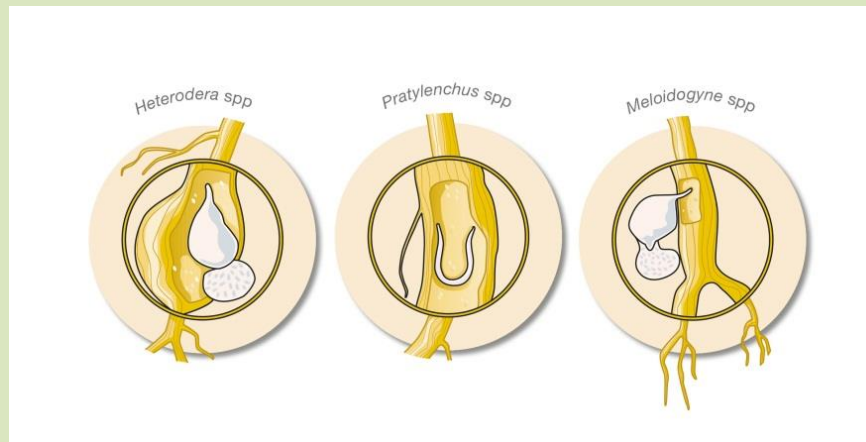
- Production of enzymes that degrade the walls of eggs → action on eggs and the nematode larvae inside the eggs

Indirect

- Colonization of the root surface, forming a physical barrier
- Degradation of root exudates, disorients nematodes reducing root penetration
- Stimulation of the plant growth through production of phytohormones



- Flocter is active against the main plant parasitic soil nematodes that attack both greenhouse and open field crops

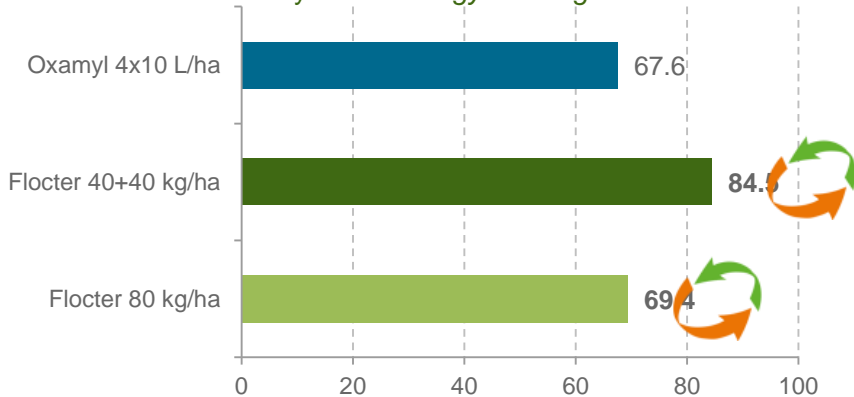


Flexibility to integrate Flocter into other nematode control strategies such as chemical products, fumigation*, solarization and plastic mulch systems

* Apply Flocter at least 7 days after fumigation.

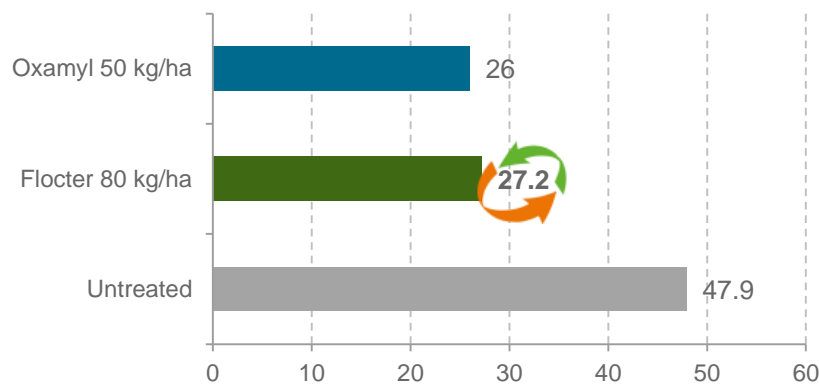
Proven efficacy in several crops

Cucumber trial – Italy (2012)
% Efficacy on *Meloidogyne incognita*



Cucumber roots attacked by nematodes

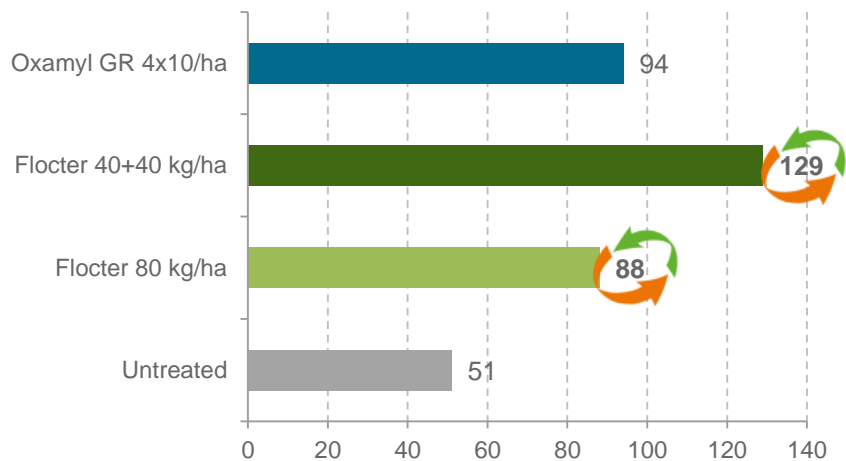
Carrot trial – *Heterodera carotae* – Italy (2012)
% Not marketable roots



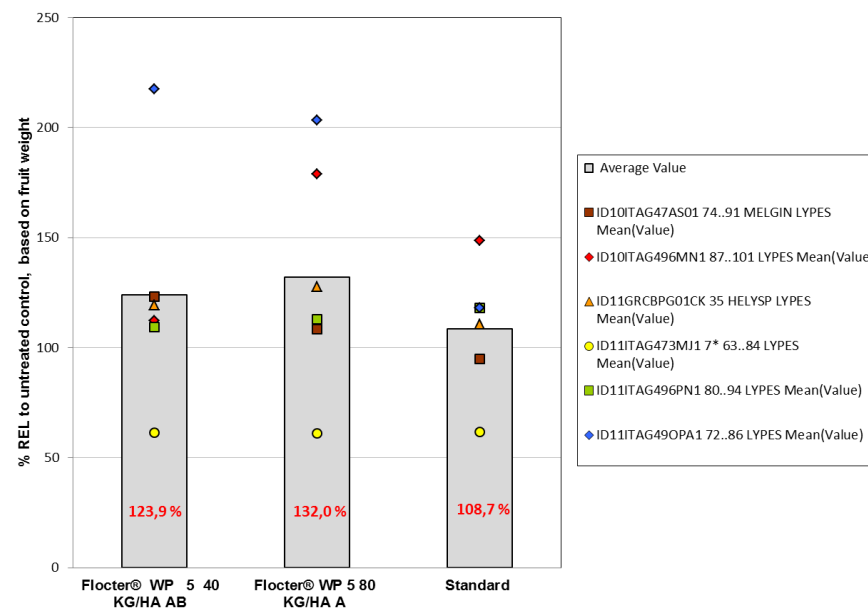
Carrots attacked by nematodes

Delivers better YIELD

Cucumber trial – Italy (2012)
Yield – dt/ha



Yield; Tomato; 80 kg/ha & 2 x 40 kg/ha vs. Standard ; n = 6



... benefitting the entire food chain

Flocter® | Beyond Efficacy



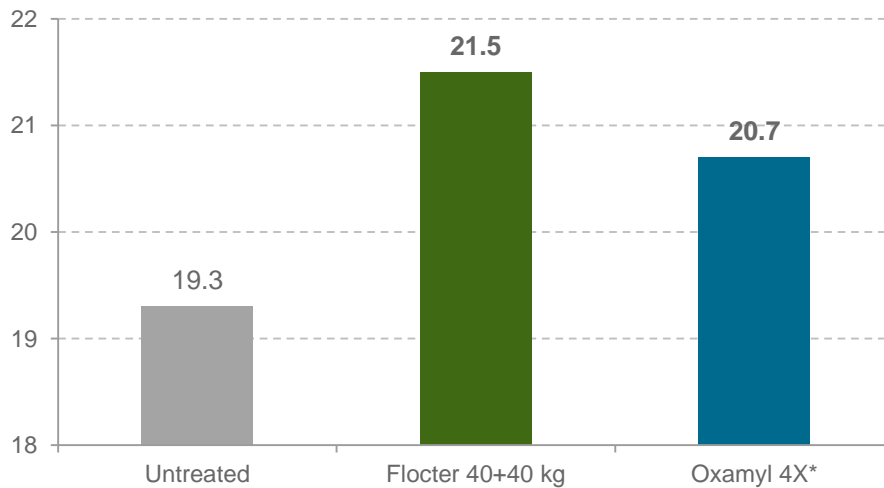
 Provides better early stage growth



Tomato trial in Italy (2012-2013).
In plots treated for two consecutive years with Flocter a better starter effect was observed.

 Improves photosynthetic capacity

Tomato Trial – Italy (2013)
SPAD** Index



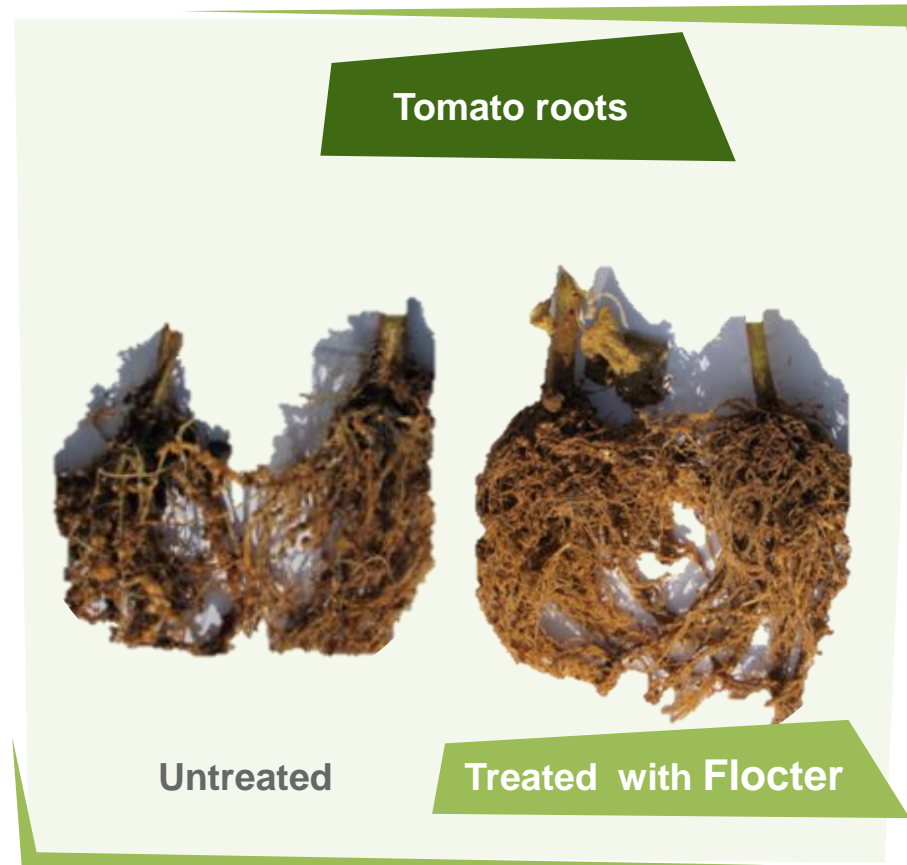
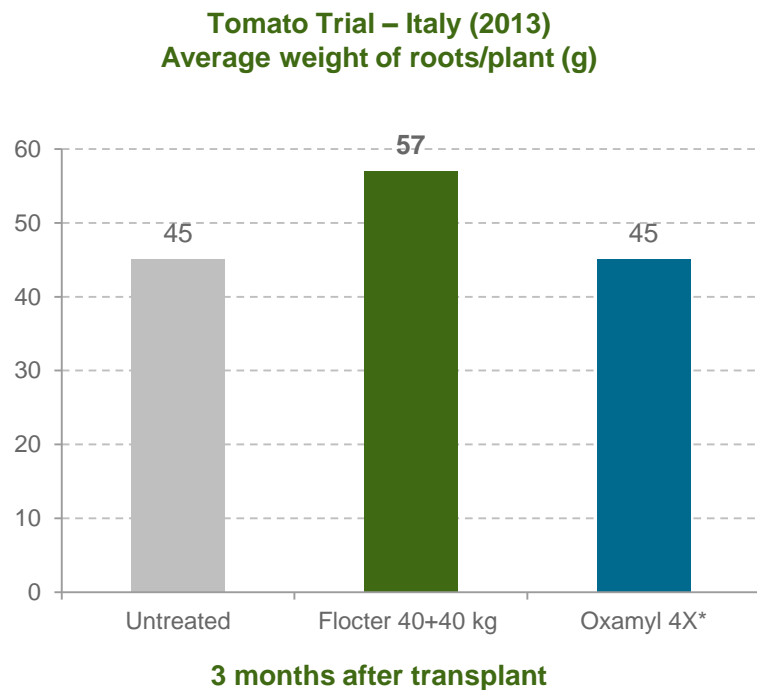
3 months after transplant

* First application pre-planting followed by three applications post-planting


** Chlorophyll Content Index













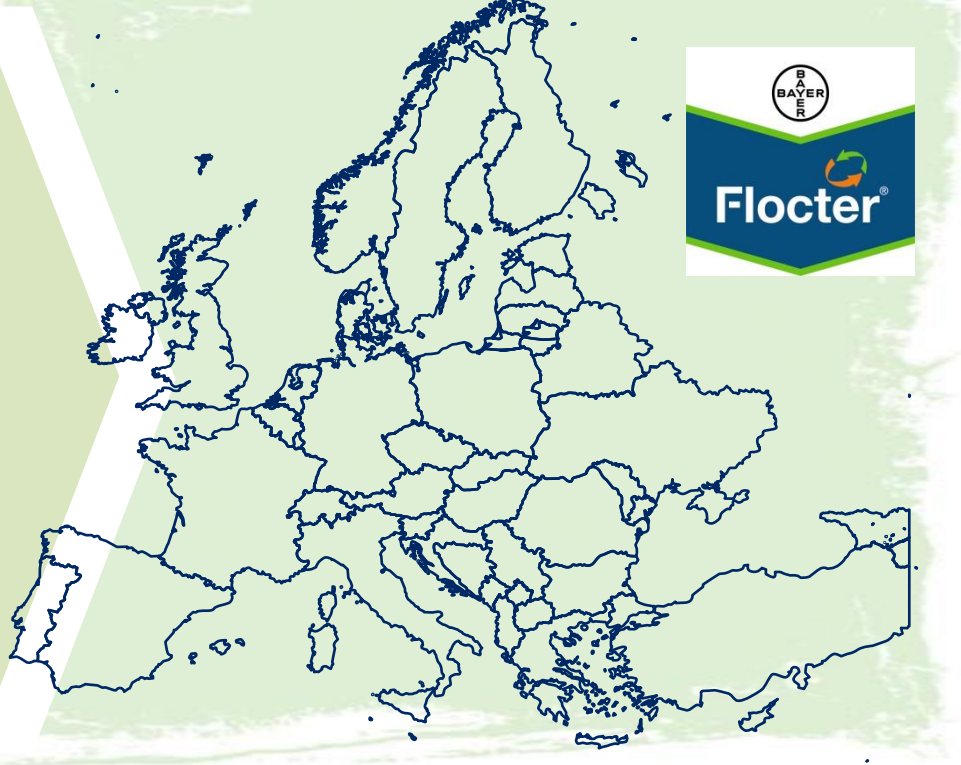
 Provides better root growth, particularly in fine-root systems



* First application pre-planting followed by three applications post-planting

 Flocter is/will be registered for carrots, tomatoes, melons, cucumber, pepper, tobacco and other vegetables in EMEA, as well as other relevant regions/countries

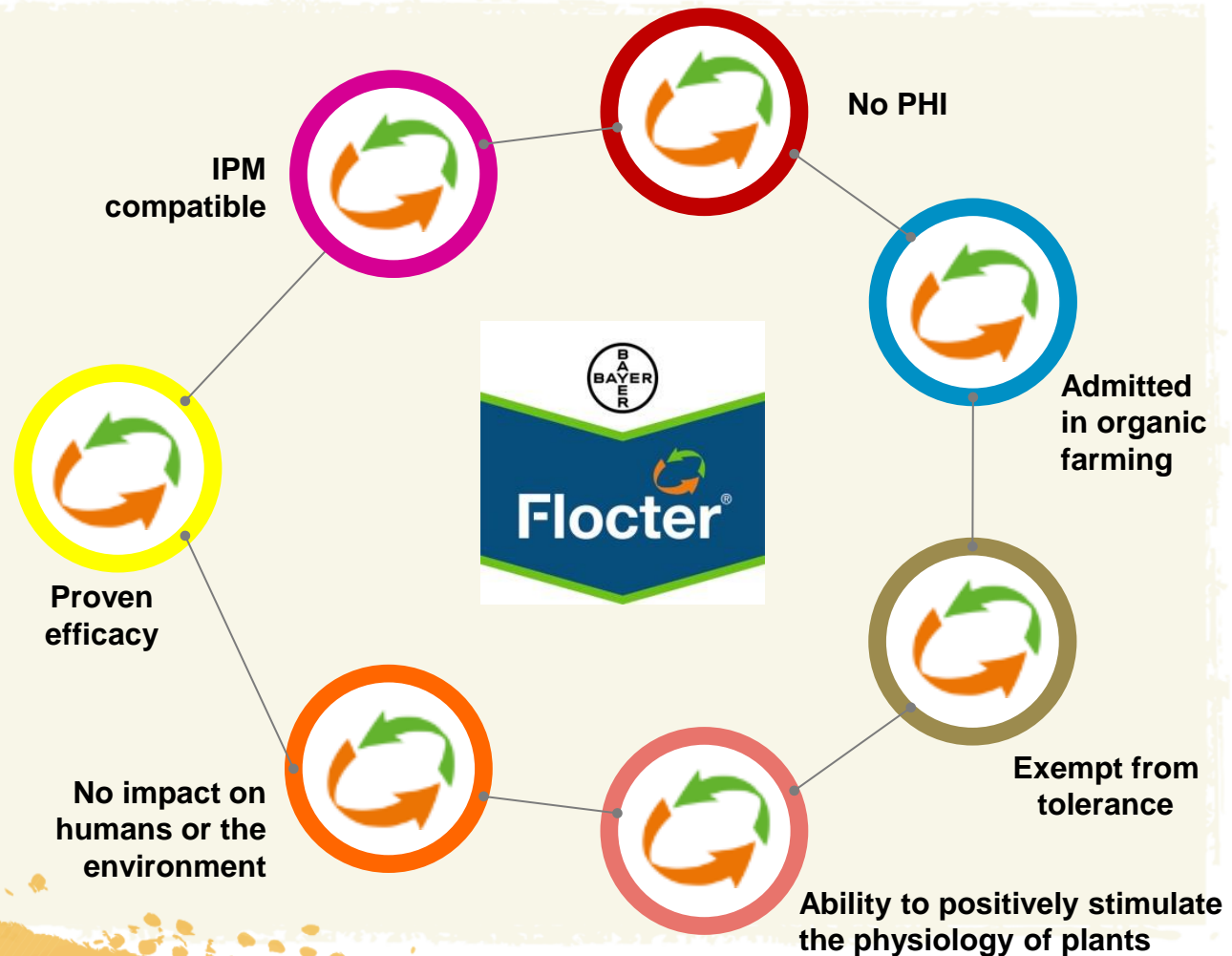
	Tomato		Melon
	Eggplant		Watermelon
	Pepper		Cucumber
	Carrot		Zucchini
	Tobacco		Pumpkin



Flocter® | Summary



Flocter, a new nematicide based on the bacteria *Bacillus firmus* I-1582, is another tool within the Bayer solutions portfolio which contributes to develop sustainable agriculture and addresses unmet customer needs. Among the product interesting features:





THANK YOU
FOR YOUR
KIND ATTENTION