6th Seed Congress of the Americas

Promoting Seed Business in the Americas | September 5-7 2017 - Colombia Cartagena de Indias

Why seed applied technologies are important and its impact on high quality seeds

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- Insect Resistance Management IRM programs are critical
- Quality seed production is key
- Importance of SAA

Seed treatment market trends

Tough economic conditions

- Low commodity prices
- Currency volatility
- Trade barriers
- Increasing R&D costs

Technology evolution

- Seed treatment products complexity
- Resistance building
- Pest shifts
- Biologicals part of the offer
- Abiotic environmental stress

Political/regulatory pressure

- Political insecurity
- Changing regulatory landscape
- NGOs shaping perception

Market dynamics

- Market consolidation
- Intense generic activity
- International trade increasing

Research and development process: high level of investment and multidisciplinary project teams required

100'000 compounds	**5000** compounds	**30**	**1 - 2**
			
Discover	Profile	Evaluate	Launch



Resistance development and pest shifts remains key driver: requires evolving and complementary technologies

TRENDS

- Resistance development is a threat to all pest control options
- Loss of older chemistry puts increased resistance pressure on new chemistry
- Insect traits losing efficiency in some regions

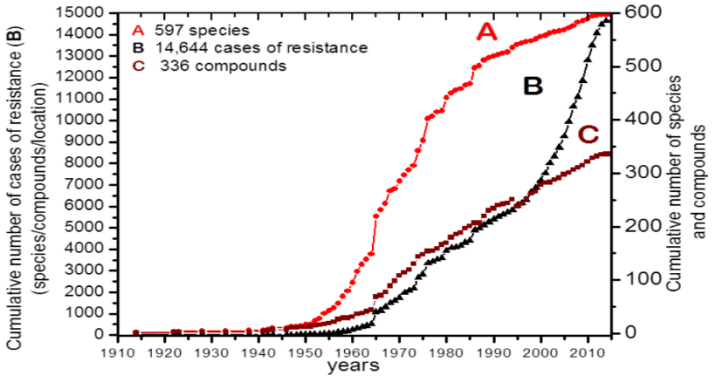


Fig 1. Evolution of arthropod insecticide resistance from 1914 to 2015. (species, compounds and total number of cases).

INDUSTRY IMPLICATIONS

- Innovative pest control products essential to fight ever evolving resistance
- Seed treatment is a critical element of pest and resistance management in many crops

NEEDS

- Diverse portfolio – Multiple MOA
- Proactive stewardship
- Promote resistance management including seed treatment for traits
- Adjacent technologies
- New AI

Source: IRAC 2015 Insecticide Resistance Database Report (Extract from MSU)

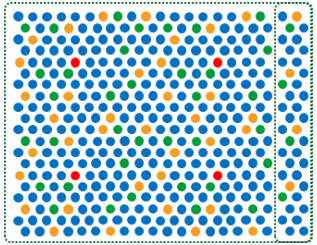
Importance of Resistance Management

Principle: A second non-Bt mode-of-action dramatically eases selection pressure

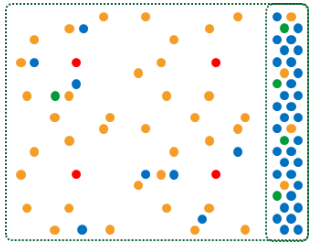
1. Crop Rotation
2. Refuge Adoption
3. Seeds + Seed Treatment + CP protocols

Fortenza® Duo

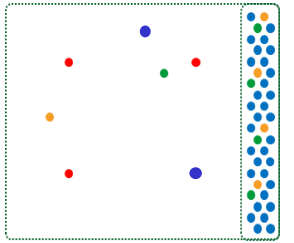
Before Bt selection



After Bt selection



After Bt + chemical selection



- Sensitive to both (Bt & chemical)
- Resistant to Bt
- Resistant to chemical
- Resistant to both (Bt & chemical)

Changing regulatory landscape with complex matrix of requirements: leads to License To Operate challenges

TRENDS

KEY REGULATORY CHALLENGES	EAME	NAM	APAC	LATAM
Bee guidance document – New requirements and criteria for pollinator assesment	●			
More stringent **bird & mammal tox** guidelines	●			
More challenging **dust exposure** and **water risk** assessments	●	●		
NGO's suing agencies	●	●		
Potential restrictions on **free movement of treated seeds**	●	●	●	
Restrictions on **number of AI's** in mixtures	●		●	

INDUSTRY IMPLICATIONS

- License To Operate in seed treatment is more challenging
- Poor stewardship quickly becomes a LTO issue!
- Tradeoffs between efficacy vs. registrability profile for new AIs
- Time and cost increasing

NEEDS

- Sound regulatory expertise for development, registration and maintenance of products
- Ability to tailor solutions locally
- Stewardship excellence

Source: Syngenta internal assessment

Impact of the NNI Suspension in Winter Oilseed Rape in EU

WINTER OILSEED RAPE

OBJECTIVE: IMPACT ON YIELD, QUALITY & QUANTITY, PRODUCTION COSTS AND DAMAGE CAUSED

KEY LEARNING #1

THE VAST MAJORITY OF FARMERS INDICATE THAT THEY WOULD USE NEONICOTINOID TREATED SEEDS AGAIN IF THE SUSPENSION WAS LIFTED

KEY LEARNING #2

GROWERS ARE REDUCING THE AREA UNDER CULTIVATION

KEY LEARNING #3

PRODUCTION COSTS HAVE RISEN FOR MOST GROWERS, 70% OR MORE

KEY LEARNING #4

MORE APPLICATIONS OF FOLIAR INSECTICIDES ARE APPLIED

KEY LEARNING #5

IMPACT OF THE SUSPENSION ON YIELDS IS CURRENTLY DIFFICULT TO QUANTIFY

79% SAID THE NNI SUSPENSION HAD AN IMPACT ON WOSR MANAGEMENT

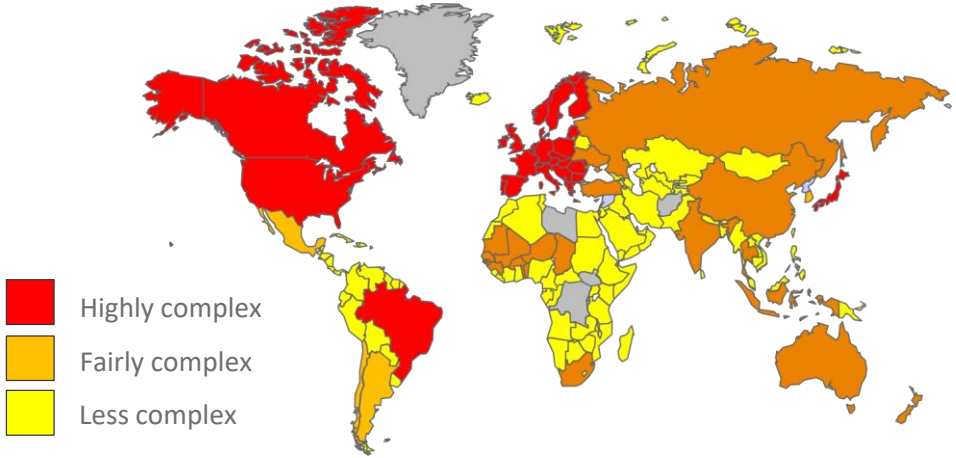
	WAVE 1 (1/2 SEASON IN SUSPENSION: NOV/DEC 2014)	WAVE 2 (1 FULL SEASON IN SUSPENSION: OCT 2015)
GROWING AREA	-8%	-18%
YIELD	34% EXPECT A DECREASE	13% EXPERIENCED A DECREASE DUE TO NNI'S
CROP QUALITY	74% EXPECT IT TO STAY THE SAME	73% SAID IT HAS REMAINED THE SAME
PRODUCTION COST	73% SAID IT HAS INCREASED	82% SAID IT HAS INCREASED
NUMBER OF FOLIAR APPLICATIONS (2013/2014 VS. 2014/2015 SEASON)	1,5 vs. 2,3 HALFWAY THROUGH THE SEASON	2,0 vs. 3,0
CABBAGE STEM FLEA BEETLE (2014/2015 SEASON)	31%	60% MOST DIFFICULT TO CONTROL

93% WOULD RATHER **GO BACK** TO **NNI SEED TREATMENTS**

Movement of treated seeds: unclear operational framework

TRENDS

- Significant seed export by global companies
- Limited clarity of regulatory frame applying to the movement of treated seeds



INDUSTRY IMPLICATIONS

- Difficult trade between countries
- Case by case guidance required
- Tedious documentation
- Hard to fulfill labelling requirements
- Operational compliance and liability

NEEDS

- Portfolio alignment
- Sound regulatory expertise and clarity about regulatory framework
- Shipment & import documentation
- Dedicated key account support

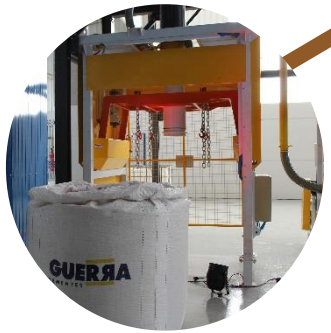
Source: Syngenta internal assessment

Areas of collaboration between Seeds and Seed Treatment: Stewardship and application quality

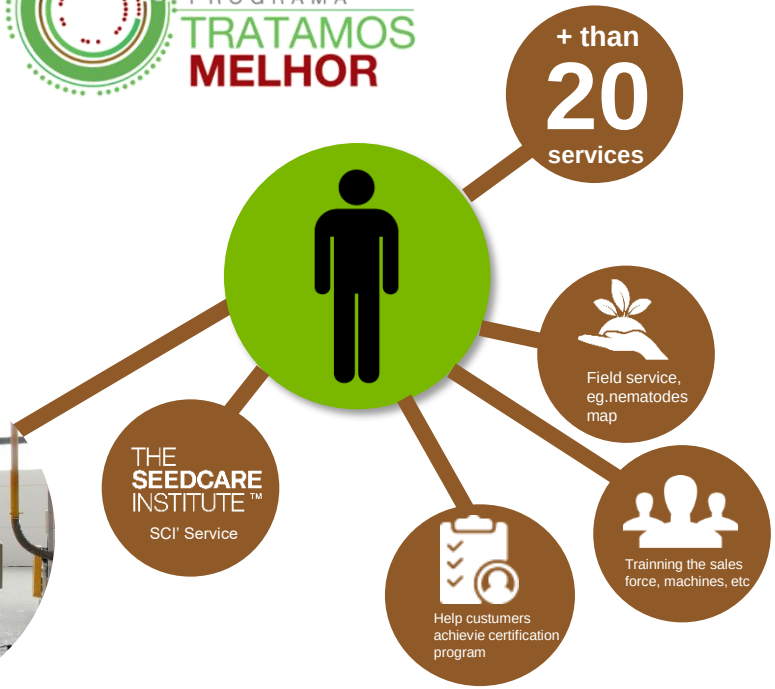
Case study: Brazil, Tratamos Melhor program

- Seed Treatment quality certification program developed by Seedcare for soybean multipliers
- Promotes industrial Seed Treatment application quality
- Treated seeds with Tratamos Melhor label offer ability for differentiation at grower level for certified soybean multipliers

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PROGRAMA TRATAMOS MELHOR



Areas of collaboration between Seeds and Seed Treatment: high quality seeds production

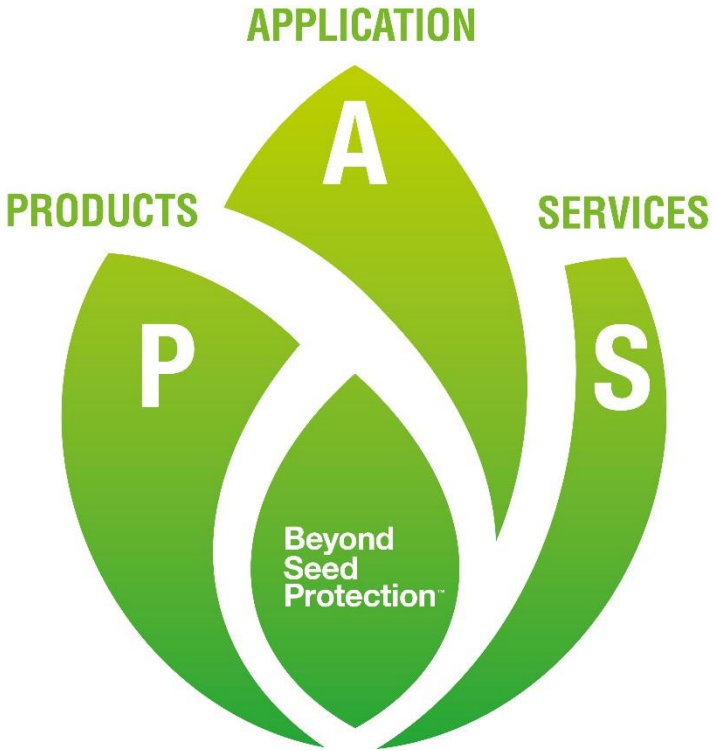
Case study: seed production/processing project in China with corn seed companies



Steps to ensure your seed quality:

- Seed testing capabilities and the Seed production protocol
- The processing improvement step
- The Seed Treatment application part is crucial
- End-to-end continuous training brings it all together
- A multi-season journey

Seedcare™ :
Delivering value Beyond Seed Protection™



Seedcare™ syngenta

Seed congresses essential for our industry



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...JOIN THE Seedcare WELCOME PARTY @ 8PM


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PREGUNTAS?

Thank you for your attention!