



APPLICATION



WHAT DO YOU NEED?



syngenta®

INNOVATING IN SEED TREATMENT

SEED TREATMENT MARKET TRENDS

Tough economic conditions

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

Market dynamics

- Market consolidation
- Intense generic activity
- International trade increasing

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

INNOVATION BROUGHT TO LIFE BY SYNGENTA SEEDCARE™

- New AI **specifically designed** for seed treatment
- Works on all **major crops**
- SDHI **next-generation fungicides**; broad spectrum of diseases
- **Root biostimulant effect**

DISEASE CONTROL

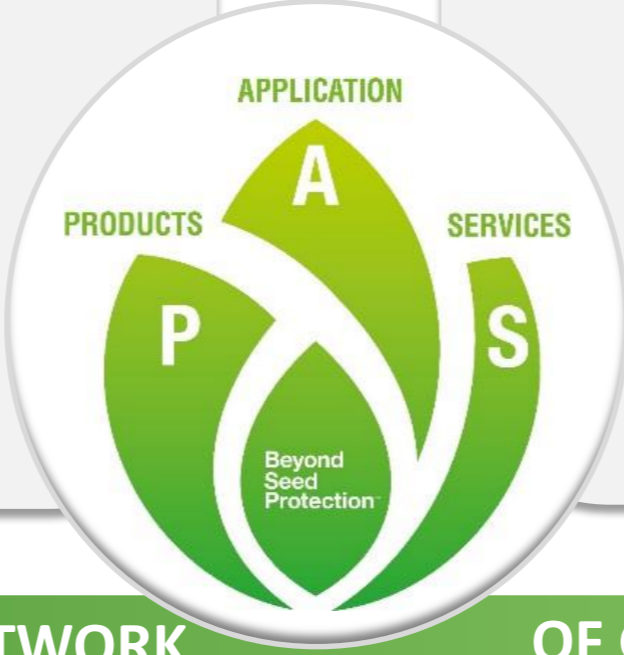
ABiotic STRESS MANAGEMENT

Higher, more consistent yield

Addressing **abiotic stresses** and **crop enhancement** via seed treatment

Treatment	Yield [Kg/ha]
Standard ST	3467
Standard ST + EPIVIO™ Vigor	3654

Brazil soybean – EPIVIO™ Vigor large band strip field testing
46 locations, significant yield difference (+5.7%) meta-analysis CV: 3.83%



THE SEEDCARE INSTITUTE™ – A NETWORK OF GLOBAL SEED TREATMENT EXPERTS

Map labels: CANADA, US, MEXICO, BRAZIL, ARGENTINA, FRANCE, GERMANY, SWITZERLAND, UKRAINE, RUSSIA, SOUTH AFRICA, EAST AFRICA, INDIA, SINGAPORE, CHINA, JAPAN.

Legend: EXISTING (teal), PLANNED (purple)

RECIPE DEVELOPMENT

APPLICATION, QUALITY ASSESSMENT & ENGINEERING

STEWARDSHIP

TRAINING

SEED SAFETY & BIOLOGY

PRODUCT MARKETING SUPPORT



Innovating in seed treatment requirements and future trends in the industry

Ioana Tudor
Head Global Seedcare at Syngenta



syngenta®



AGENDA

1. SEED TREATMENT MARKET TRENDS
2. INNOVATION BROUGHT TO LIFE BY SYNGENTA SEEDCARE™

Seed treatment market trends

Tough economic conditions

- Low commodity prices
- Currency volatility
- Trade barriers



Technology evolution

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



Political / regulatory pressure

- Political insecurity
- Changing regulatory landscape
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Market dynamics

- Increasing R&D costs
- Market consolidation
- Movement of seed increasing



Resistance development and pest shifts remain key drivers: require 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



INDUSTRY IMPLICATIONS

- Innovative products needed 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
- New AI

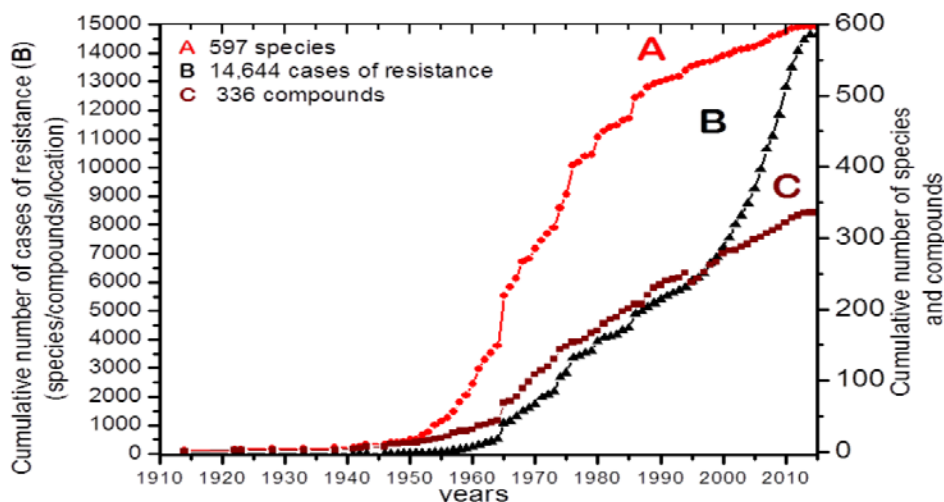


Fig 1. Evolution of arthropod insecticide resistance from 1914 to 2015. (species, compounds and total number of cases).

Changing and complex regulatory landscape: 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!
- Trade-offs between efficacy vs. registrability profile for new AIs
- Time and R&D cost increasing



NEEDS

- Sound regulatory expertise for development, registration and maintenance of products
- Stewardship excellence
- Increasingly specific local product profiles

Source: Syngenta internal assessment

Movement of treated seeds: unclear operational framework

TRENDS

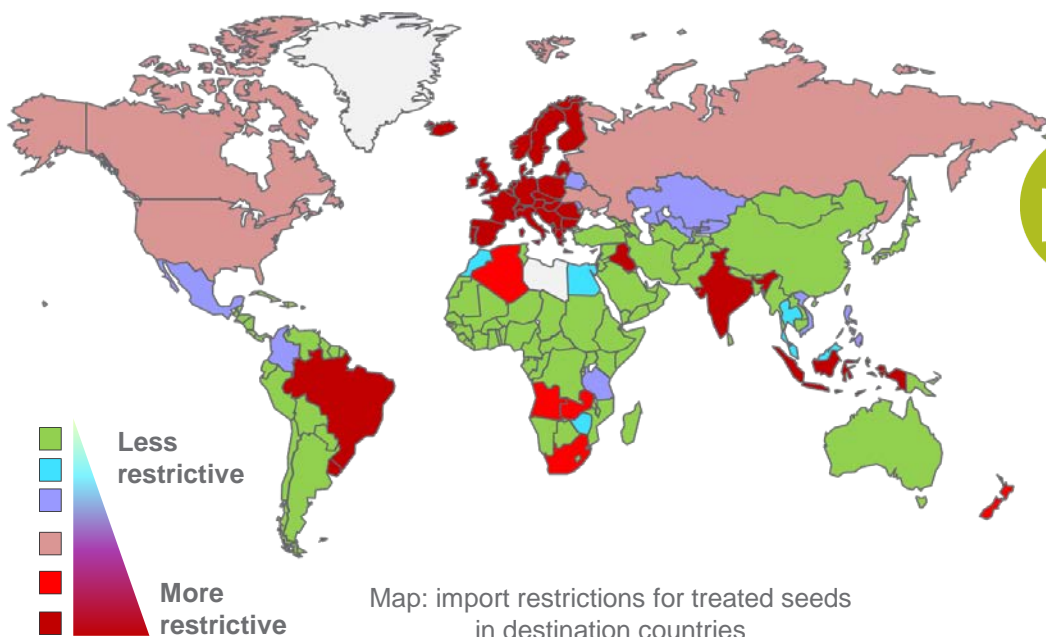
- Significant seed export by global companies
- Limited clarity of regulatory frame applying to the movement of treated seeds

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

Research and development process: increasing investment required and longer timelines

100'000 compounds



Discover

5000 compounds



Profile

30



Evaluate

1 - 2



Launch



\$260m



8-10 years



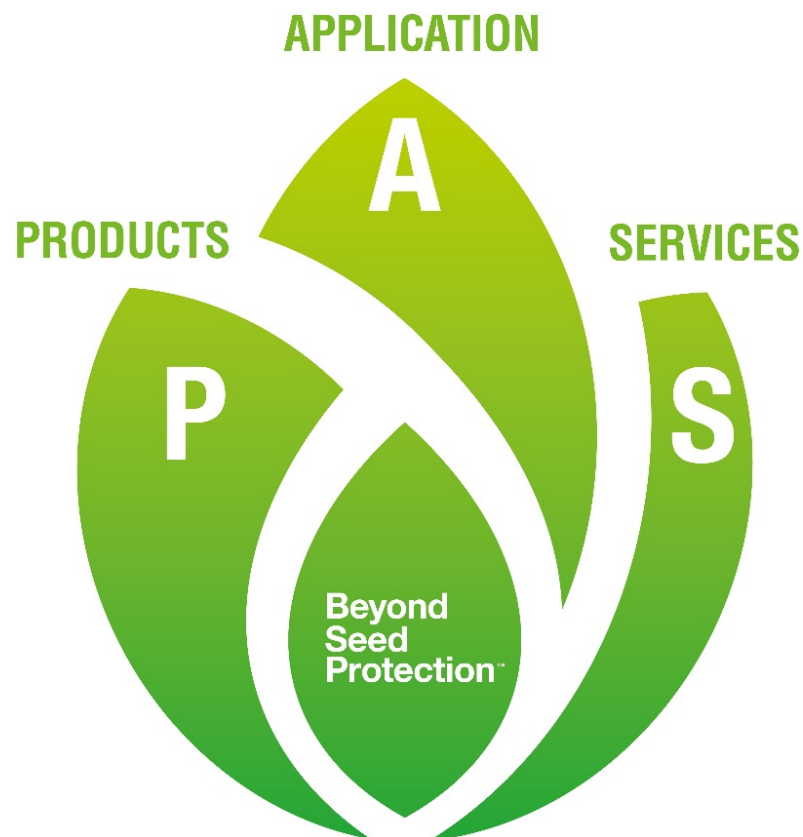
Uncertainty



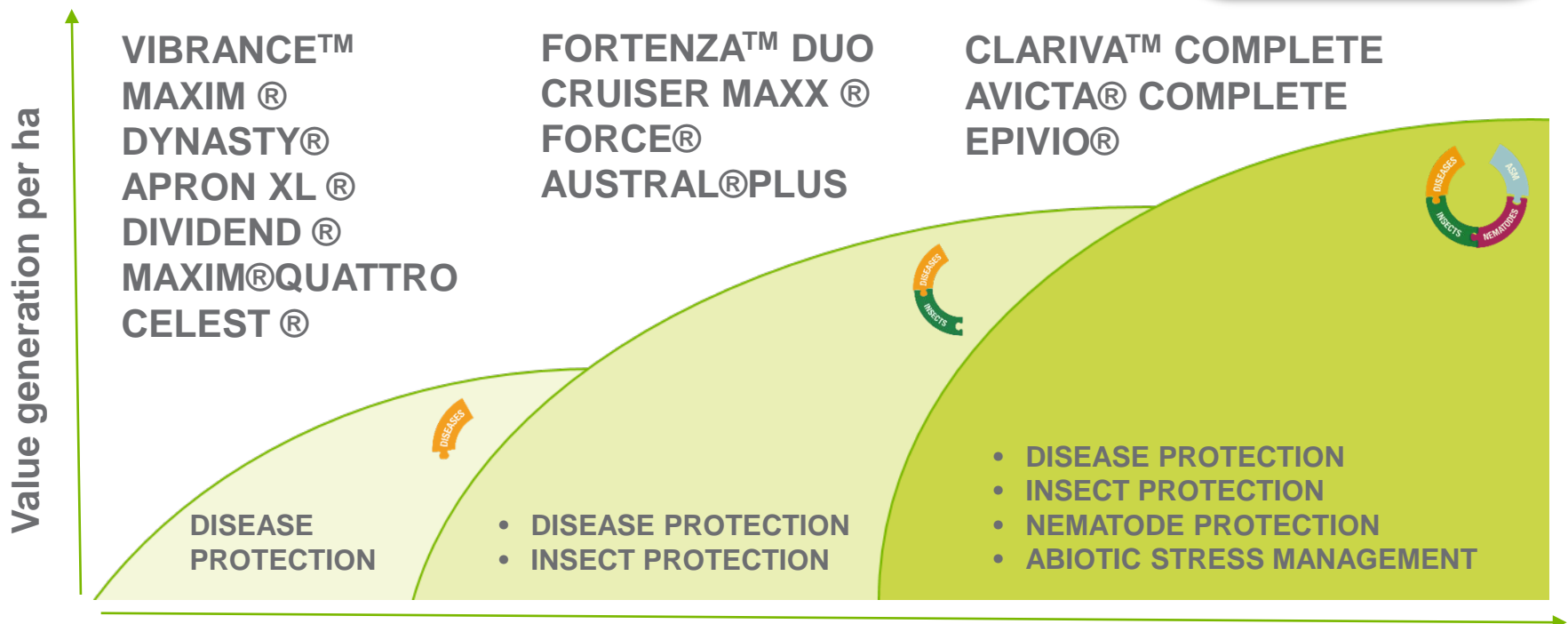
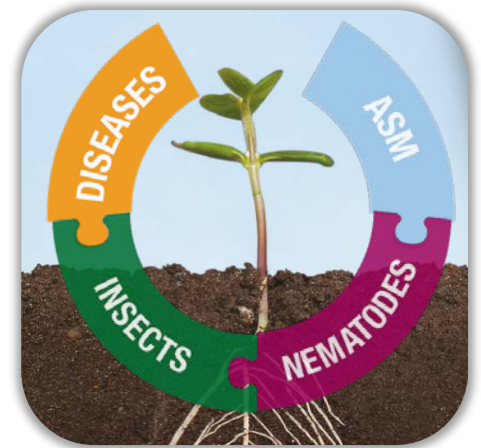
Multidisciplinary
teams

Seedcare™ :

Delivering value Beyond Seed Protection™



Product innovation: broad portfolio to fit diverse needs





A novel compound for root health

- New AI **specifically designed** for seed treatment
- Works on **all major crops**
- SDHI **next-generation fungicides**; broad spectrum of diseases (e.g. *rhizoctonia spp*, *Fusarium spp*, *Sclerotium spp*)
- **Root biostimulant effect**
 - **RootingPower**: stronger & healthier roots
 - Enhanced **biotic/abiotic stress management**

DISEASE CONTROL

ABIOTIC STRESS
MANAGEMENT

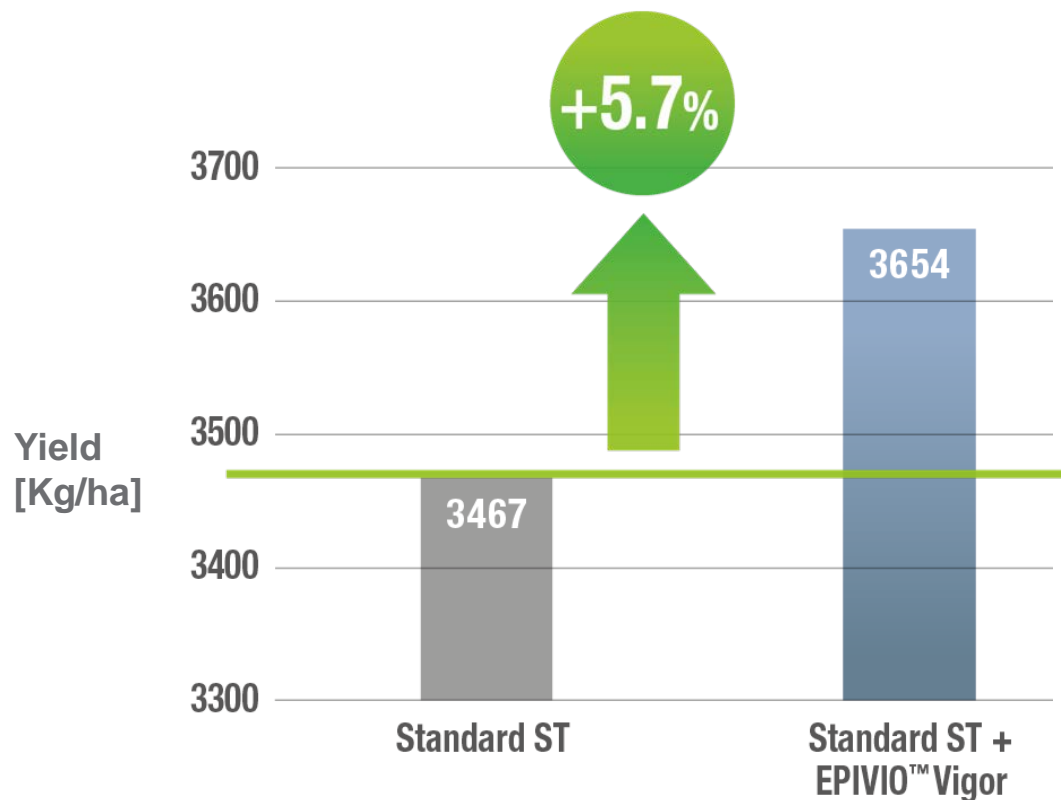
Higher, more
consistent
yield



Source: BIOtransfer, Wheat, France, 2013



Adressing abiotic stresses and crop enhancement via seed treatment



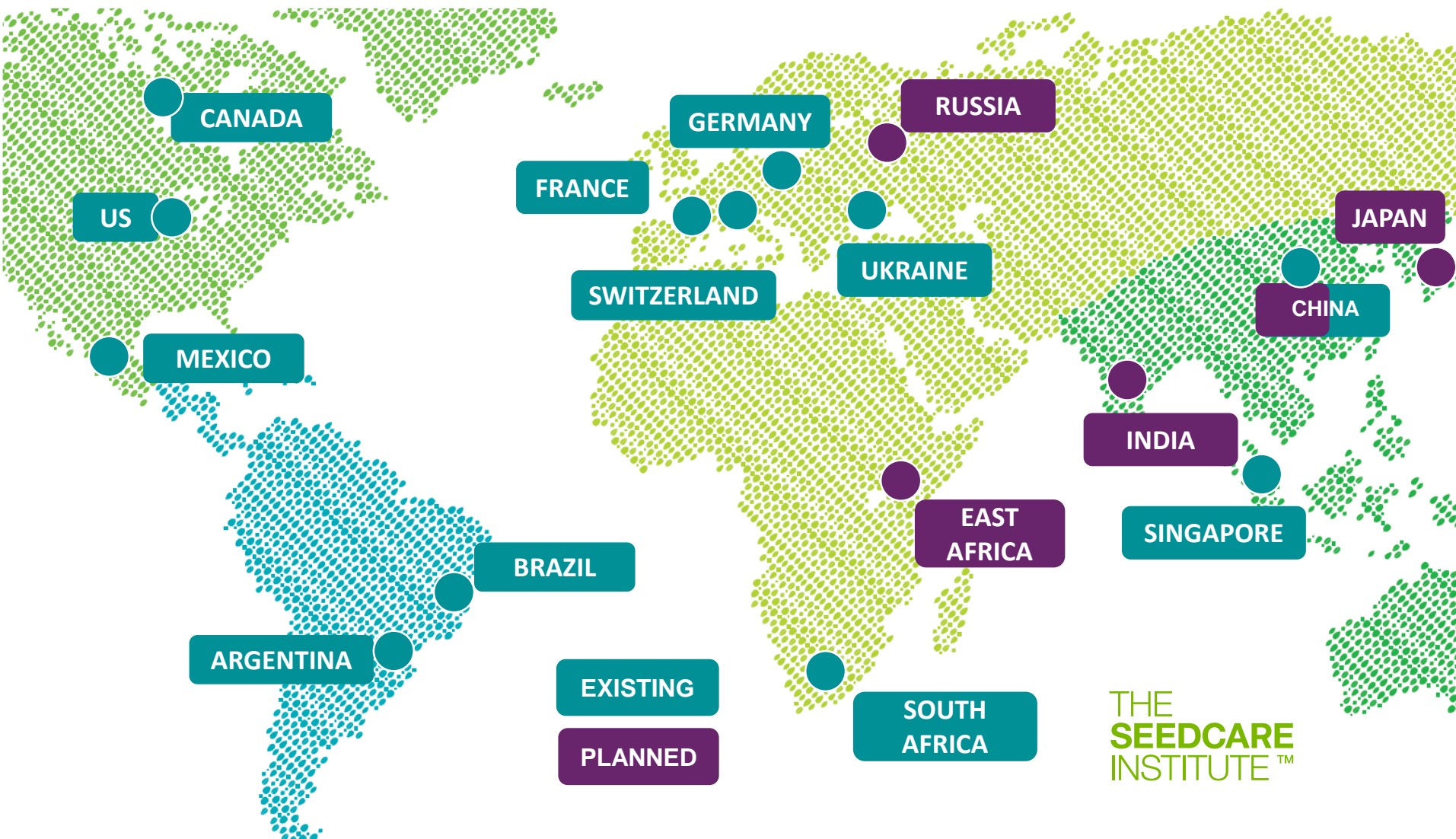
Brazil soybean – EPIVIO™ Vigor large band strip field testing

- **Biostimulant compounds** such as Brassinosteroids and Triacontanol (all derived from **natural sources**)
- **Micronutrients** for optimal seedling development
- Increases the release of **mineral nitrogen** from soil organic matter

46 locations, significant yield difference (+5.7%)
Good trials quality
meta-analysis CV: 3.83%



Services innovation: a global network of seed treatment experts



Six Seedcare Institute service categories

THE
SEEDCARE
INSTITUTE™



RECIPE
DEVELOPMENT

APPLICATION,
QUALITY
ASSESSMENT &
ENGINEERING


STEWARDSHIP

TRAINING

SEED SAFETY
& BIOLOGY

PRODUCT
MARKETING
SUPPORT





**THANK YOU
QUESTIONS?**