**EXP Foliar Biostimulant - Corn**

**Why this concept?** A foliar biostimulant containing a complex array of bioactive compounds that elicit crop responses to combat yield robbing stresses.

**What to look for as concept is monitored throughout trial:** Monitor corn for indications of improved plant health (stay green, improved stalk health) during grain fill and up to harvest.

**OBJECTIVES:**
- Demonstrate and document the response of a biostimulant, EXP BS15001, applied with either ground or aerial application.
Trivapro - Wheat

Why this concept? Demonstrate and document the yield response and disease control of the new, 3 active ingredient fungicide, Trivapro, on wheat applied during the flag leaf stage.

What to look for as concept is monitored throughout trial: Monitor wheat for indication of improved plant health and disease control.

OBJECTIVES:
- Demonstrate and document the response of the new, 3 active ingredient fungicide, Trivapro, on wheat applied during at the flag leaf stage.
- Reduce disease and improve wheat performance during flowering and grain fill.

Solatenol™ Fungicide in Wheat

Technical Overview

Solatenol™ fungicide is a new broad-spectrum active ingredient under development by Syngenta, with first product registration expected in 2015. In combination with azoxystrobin and propiconazole, it will be marketed as Trivapro™ fungicide in wheat upon registration for disease control, crop enhancement and resistance management. Solatenol fungicide is a third generation SDHI (succinate dehydrogenase inhibitor) in FRAC group 7 that demonstrates excellent broad spectrum activity on many foliar diseases in wheat, such as rusts and powdery mildew. Solatenol fungicide strongly binds to the plant’s waxy layer and slowly penetrates the tissue. This binding plus translaminar activity and extremely high potency deliver long-lasting disease control.

Trivapro Technical Features
- Uses three different modes of action with no cross-resistance among strobilurins, triazoles and SDHIs
- Fits easily into wheat programs
- Mixes well with other products
- Unique chemistry designed for maximized protection against rust
- Demonstrated preventive and curative fungicidal activity
- Exceptional rainfastness
- Protects the flag leaf
- Excellent residual control

Diseases Controlled
- Rust (leaf, stripe and stem)
- Powdery mildew
- Septoria

Trivapro™
Trivapro Fungicide - Corn

Why this concept? Demonstrate and document the yield response and disease control of the new, 3 active ingredient fungicide, Trivapro, on corn applied at the Vt-R3 stage.

What to look for as concept is monitored throughout trial: Monitor corn for indications of improved plant health (Stay green, stalk health, standability) and disease control.

OBJECTIVES:
• Demonstrate and document the response of the new, 3 active ingredient fungicide, Trivapro, on corn applied during the reproductive phase in corn (VT – R3 stage).
• Reduce stress and improve corn performance during pollination and grain fill.

Solatenol™ Fungicide in Corn and Soybeans

Technical Overview

Solatenol™ fungicide is a new broad-spectrum active ingredient under development by Syngenta, with first product registration expected in 2015. In combination with azoxystrobin and propiconazole, it will be marketed as Trivapro™ fungicide in corn and soybeans upon registration for disease control, crop enhancement and resistance management.

Solatenol fungicide is a third generation SDHI (succinate dehydrogenase inhibitor) in FRAC group 7 that demonstrates excellent broad spectrum activity on many foliar diseases in corn and soybeans, such as rusts and leaf spots. Solatenol fungicide strongly binds to the plant’s waxy layer and slowly penetrates the tissue. This binding plus translaminar activity and extremely high potency deliver long-lasting disease control.

Trivapro Technical Features
• Uses three different modes of action with no cross-resistance among strobilurins, triazoles and SDHIs
• Fits easily into corn and soybean programs
• Mixes well with other products
• Demonstrated preventive and curative fungicidal activity
• Exceptional rainfastness

Diseases Controlled
• Rust (Asian soybean, common, Southern)
• Leaf spots
Trivapro Efficacy on Asian Soybean Rust

Trivapro Efficacy on Gray Leaf Spot in Corn

Trivapro Efficacy on Rust in Corn

Corn treated with Trivapro exhibits fewer rust spots and healthier veins.

All photos are the property of Syngenta unless otherwise noted.

©2014 Syngenta. Important: Always read and follow label instructions. Some crop protection products may not be registered for sale or use in all states or counties. Please check with your local extension service to ensure registration status. Trivapro and Solatenol fungicide products are not yet registered for sale or use in the United States and are not being offered for sale.

Solatenol™, Trivapro™, the Alliance Frame, the Purpose Icon and the Syngenta logo are trademarks of a Syngenta Group Company.

G&S 404.59109

SLC 4442A 05-2014
**Why this concept?** Demonstrate and document the response of the new, 3 active ingredient fungicide, Priaxor D, on soybeans applied during the reproductive stage (target R3 timing) in geographies with frogeye leafspot and other foliar diseases.

**What to look for as concept is monitored throughout trial:** Monitor soybeans for improved disease control and plant health. Look for improved control of frogeye leaf spot, brown spot, etc.

**OBJECTIVES:**
- Demonstrate and document the response of the new, 3 active ingredient fungicide, Priaxor D, on soybeans applied during the reproductive stage (target R3 timing) in geographies with frogeye leaf spot and other foliar diseases.
- Reduce disease and improve soybean plant health during flowering and pod fill.

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**Managing Frogeye Leaf Spot Resistance**

**Recommendations for Managing Strobilurin Resistant Frogeye Leaf Spot (SR-FLS)**

| Field History Indicates Low Risk of Resistance | Resistant Variety Planted |
| Field History Indicates High Risk of Resistance | Priaxor® Fungicide |
| Emergency Susceptible variety planted and SR-FLS suspected or confirmed | Priaxor Fungicide + Domark® Fungicide |

- The first step to managing SR-FLS is to plant a soybean variety that is resistant to the disease.
- If a resistant variety is planted use Priaxor fungicide to control other diseases like Septoria brown spot, Anthracnose and Aerial web blight.
- Priaxor fungicide also provides Advanced Plant Health Benefits including increased growth efficiency and increased stress tolerance.
- If a susceptible soybean variety is planted and SR-FLS is suspected or confirmed add Domark fungicide to Priaxor fungicide for three modes of action.

Plant a resistant soybean variety and apply Priaxor fungicide at R2–R4 for other disease control and Advanced Plant Health Benefits.
**Best Management Practices**

- Plant certified soybean seed with high level of frogeye leaf spot (FLS) resistance
- Use multiple fungicide modes of action at each application
- Apply Priaxor® fungicide at 4 fl oz/A
- Apply Domark® fungicide at 4-5 fl oz/A with Priaxor fungicide if an FLS susceptible soybean variety is planted and SR-FLS is confirmed or suspected
- Use recommended/labeled fungicide rates
- Ensure optimum fungicide coverage
- For intensively managed acres: consider a sequential program – R2–R3 followed by R4–R5

**Triazole Tank-mix Increases Control of High Level SR-FLS**

<table>
<thead>
<tr>
<th>Fungicide Treatment @ R3</th>
<th>Rate (fl/oz A)</th>
<th>Fungicide Class</th>
<th>Yield (Bu/A)</th>
<th>FLS Rating 0–10 Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Priaxor fungicide + Domark fungicide</td>
<td>4 + 5</td>
<td>7 + 11 + 3</td>
<td>57.4</td>
<td>1.8</td>
</tr>
<tr>
<td>Domark fungicide</td>
<td>5</td>
<td>3</td>
<td>56.9</td>
<td>2.5</td>
</tr>
<tr>
<td>Priaxor fungicide</td>
<td>4</td>
<td>7 + 11</td>
<td>55.9</td>
<td>3.5</td>
</tr>
<tr>
<td>Untreated Check</td>
<td>---</td>
<td>---</td>
<td>51.8</td>
<td>7.0</td>
</tr>
</tbody>
</table>


**Yield: Susceptible Variety with SR-FLS Present**

- Untreated Check: 51.7 Bu/A
- Priaxor fungicide: 55.1 Bu/A
- Quadris® Top fungicide: 56.5 Bu/A
- Priaxor fungicide + Domark fungicide: 57.5 Bu/A

2013 BASF trial conducted by the University of Tennessee, Dyersburg, TN. Variety Asgrow 4832–Frogeye leaf spot susceptible. Low severity of strobilurin resistant frogeye leaf spot present. Priaxor 4 fl oz/A, Domark 5 fl oz/A
ILEVO Seed Treatment - Soybeans

Why this concept? Demonstrate and document the response of Ilevo seed treatment with targeted disease protection against SDS.

What to look for as concept is monitored throughout trial: Monitor soybeans for improved disease control and plant health. Look for improved control of frogeye leaf spot, brown spot, etc.

OBJECTIVES:
- Demonstrate and document the response of a seed treatment with targeted disease protection against Sudden Death Syndrome (SDS).
- Enhance plant health by mitigating disease stress.

ILEVO® ADVANTAGES
- Protects against early-season seedling infections, resulting in less SDS in the field at the end of the season
- Provides compatibility with all Bayer SeedGrowth™ seed-applied fungicides and insecticides, including Poncho®/VOTIVO™
- Reduces environmental exposure due to the seed-applied technology
- Complements genetic tolerances of commercial soybean seed

Bayer CropScience® anticipates the U.S. EPA approval for ILEVO® seed treatment by the end of 2014, making it available for the 2015 growing season.

Forward-looking Statements
This release may contain forward-looking statements based on current assumptions and forecasts made by Bayer Group or subgroup management. Various known and unknown risks, uncertainties and other factors could lead to material differences among the actual future results, financial situation, development or performance of the company and the estimates given here. These factors include those discussed in Bayer's public reports which are available on the Bayer website at www.bayer.com. The company assumes no liability whatsoever to update these forward-looking statements or to conform them to future events or developments.

Bayer CropScience® LP, 2 TW Alexander Drive, Research Triangle Park, NC 27709. Always read and follow label instructions. Bayer®, the Bayer Cross; Ilevo®; Poncho®; VOTIVO®; and SeedGrowth® are trademarks of Bayer. ILEVO is not available for sale. Any sale of these products after registration is obtained shall be solely on the basis of the EPA-approved product label(s), and any claims regarding product safety and efficacy shall be addressed solely by the label(s). For additional product information, call toll-free 1-888-99-BAYER (1-888-992-2937) or visit our website at www.BayerCropScience.us.
ILeVO® from Bayer SeedGrowth™ is a revolutionary seed-applied fungicide that will provide breakthrough protection for soybean seedlings from Sudden Death Syndrome (SDS) when approved by the U.S. Environmental Protection Agency (EPA). As of today, there are no seed varieties with absolute resistance to SDS or chemical treatment options on the market, and ILeVO will be the first product of its kind.

The active ingredient in ILeVO is absorbed by the germinating seed and moves systemically into the seedling’s roots, cotyledons and developing leaves (called unifoliates). This unique mode of action provides early protection against SDS.

**SUDDEN DEATH SYNDROME**

Sudden Death Syndrome, now among the top four yield-robbing diseases in soybeans, is spreading in fields across the United States. It is unpredictable and often not detected until late summer. From 2009 to 2011, average losses in the United States were estimated at 42 million bushels a year. Soybean growers in Iowa, Illinois, Indiana and states farther south have been dealing with SDS for nearly 25 years. The disease has advanced to most of the environments in which soybeans grow in the United States today.

The causal agent of SDS, *Fusarium virguliforme* (or *Fusarium solani* f. sp. glycines), can be spread easily with soil movement. Initial infections occur on the roots and crowns of young soybean plants as early as the seedling stage. SDS produces toxins that cause foliar symptoms including leaf drop, which reduces the plant’s ability to provide nutrients to promote pod fill, leading to aborted pods and, ultimately, yield loss.

Sudden Death Syndrome appears to develop in cool, wet weather and soil compaction.

- Temperatures below 60°F at planting are ideal for infection, but greenhouse research has shown that infection can still occur at temperatures up to 82°F during planting. Moderate temperatures (about 80°F) during the growing season lead to SDS symptoms developing on the leaves.¹

- Moisture enables the SDS pathogen to penetrate the soybean plant via the root system.

- Soil compaction studies at Southern Illinois University prove that higher compaction leads to higher levels of SDS. If the root is constricted, there is more stress on the plant and more moisture for longer periods.¹

¹North Central Soybean Research, SDS Update.

'S. Robertson, L. Leandro, Department of Pathology, Iowa State University.
Why this concept? Demonstrate and document enhanced plant health response using a bio performer combined with fungicide applied during the reproductive phases in corn (VT – R3 stage) and soybeans (R1-R3).

What to look for as concept is monitored throughout trial: Monitor corn for indications of improved plant health (stay green, improved stalk health) during grain fill and up to harvest. Monitor soybeans for indications of improved plant health (leaf retention, disease reduction, improved pod set and retention).

OBJECTIVES:
• Demonstrate and document the response of an enhanced plant health response using Regalia Rx combined with fungicide applied during the reproductive phases in corn (VT – R3 stage) and soybeans (R1-R3).
• Enhance plant health response by adding Regalia Rx to fungicide application reduce plant stress during reproductive stage(s).

REGALIA® Rx is an advanced, broad-spectrum biofungicide that activates plants’ natural defenses to improve plant health, combat fungal and bacterial diseases, and boost yield performance. Add REGALIA Rx to the mix and benefit from a crop that is healthier, stronger, and more productive.

THE VALUE OF REGALIA RX

Higher Yields

REGALIA Rx increases leaf chlorophyll content, leading to enhanced photosynthetic activity; this activity can result in more vigorous plants and higher yields. REGALIA Rx also increases lignification, which strengthens cell walls. This improves the physical barrier to attacking pathogens and has the potential to improve standability and/or reduce lodging.

Broad-Spectrum Disease Control

Using REGALIA Rx—a preventive biological fungicide—in rotation, or mixed with synthetic fungicides, improves overall disease control by delivering more modes of action against the target pathogen.

Ideal for Resistance Management Programs

Resistance to fungicides with a single site of activity is increasingly common. Conversely, REGALIA Rx features multiple modes of action, which minimizes the risk of resistance and can help extend the life of synthetic fungicides when used in rotation or in a tank mix.

No Yield Drag

Unlike many fungicides, which can negatively affect yield potential, REGALIA Rx has no yield drag.
THE SCIENCE OF REGALIA RX

REGALIA Rx has multiple modes of action collectively referred to as Induced Systemic Resistance (ISR). When applied to crops, REGALIA Rx creates a defense response in treated plants, improves vigor, and promotes growth. The result is a crop that is healthier, stronger, and more productive.

INHIBITS PATHOGEN GROWTH

ISR triggers the creation of several antimicrobial compounds that help treated plants inhibit and restrain pathogen growth. In plants treated with REGALIA Rx, phytoalexins and phenolic compounds are induced, activity of defense-related PR proteins is increased, and levels of reactive oxygen species (ROS) are elevated.

STRENGTHENS CELL WALLS

ISR signals the plant to accumulate more lignin, which thickens and strengthens cell walls. This added strength helps protect against penetration by pathogens and lends structural integrity to the plant.

PROMOTES PLANT GROWTH

In addition to disease control, REGALIA Rx also enhances plant health by stimulating the production of phytohormones and chlorophyll—a critical compound in photosynthesis, the energy-producing reaction in plants. Higher energy production can lead to more vigorous plant and root growth and, ultimately, yield increases.

REGALIA Rx mixed with Headline AMP® outyielded all other products and mixes.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Corn Yield (bu/acre)</th>
<th>Soybean Yield (bu/acre)</th>
</tr>
</thead>
<tbody>
<tr>
<td>REGALIA Rx</td>
<td>165</td>
<td>+3.6 bu</td>
</tr>
<tr>
<td>Headline AMP®</td>
<td>161</td>
<td>+9.2%</td>
</tr>
<tr>
<td>QUANTUM® 5 fl. oz.</td>
<td>159</td>
<td>+4.1 bu</td>
</tr>
<tr>
<td>QUANTUM® 10 fl. oz.</td>
<td>157</td>
<td>+9.6%</td>
</tr>
<tr>
<td>REGALIA Rx 20 fl. oz (2)</td>
<td>158</td>
<td>+4.6%</td>
</tr>
<tr>
<td>QUANTUM® 20 fl. oz (2)</td>
<td>156</td>
<td>+4.1 bu</td>
</tr>
<tr>
<td>Untreated</td>
<td>154</td>
<td>+2.0 bu</td>
</tr>
</tbody>
</table>


Added to the tank, REGALIA Rx boosts the performance of synthetic fungicides.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Corn Yield (bu/acre)</th>
<th>Soybean Yield (bu/acre)</th>
</tr>
</thead>
<tbody>
<tr>
<td>QUANTUM® 5 fl. oz.</td>
<td>49.0</td>
<td>+3.6 bu</td>
</tr>
<tr>
<td>QUANTUM® 10 fl. oz.</td>
<td>48.5</td>
<td>+9.2%</td>
</tr>
<tr>
<td>QUANTUM® 20 fl. oz.</td>
<td>48.0</td>
<td>+4.1 bu</td>
</tr>
<tr>
<td>DURATEX® 10 fl. oz.</td>
<td>47.5</td>
<td>+9.6%</td>
</tr>
<tr>
<td>DOMARK® 4 fl. oz.</td>
<td>47.0</td>
<td>+4.6%</td>
</tr>
<tr>
<td>Untreated</td>
<td>46.5</td>
<td>+2.0 bu</td>
</tr>
</tbody>
</table>

Single application at R3 (2013). REGALIA Rx applied at 1 pint/acre.
**360 Commander** - for Nitrogen Management

**Why this concept?** Nitrogen is an expensive and difficult to manage input. 360 Commander™ For Nitrogen Management provides a method to fine tune nitrogen availability weather based, VRT nitrogen applications throughout the season.

**What to look for as concept is monitored throughout trial:** Monitor corn for overall plant health, growth stage, and signs of nitrogen deficiency throughout the growing season.

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**Take Control of Your Yield Potential.**

360 COMMANDER™ gives you the insights you need to start reaching more of the potential you plant in the ground. It provides you with accurate, agronomic recommendations, so you can make informed crop management decisions.

**KEY FEATURES**

- Soil data analysis
- Crop data analysis
- Weather data analysis

**Data-Driven Decisions.**

360 COMMANDER generates optimized, actionable seed, nitrogen and irrigation recommendations based on real-time information.

**360 COMMANDER GIVES YOU CONTROL BY PROVIDING:**

- Yield-limiting factor projections for every management zone throughout the year
- Multiple management simulations to reveal how your decisions will impact yield
- Shapefiles that are compatible with nearly all equipment monitors based on up-to-the-minute variables and data:
  - Variable seed rate recommendations
  - Variable nitrogen rate recommendations
  - Pivot irrigation control plans

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360YIELDCENTER.COM
A 360-DEGREE VIEW.

360 COMMANDER™ pulls in real-time data from outside sources and combines it with your data to create customized recommendations for your farm:

- Soil zone information from the U.S. Department of Agriculture soils database
- Unique field slope data to model topography
- Historical weather records and real-time weather data, including hourly rainfall levels
- Your hybrid choice and planting data
- Your soil tests and in-season nitrogen levels

With 360 COMMANDER, you get the insights you need to make decisions that improve your yield.

GET MORE OF THE POTENTIAL YOU PLANT.

360 COMMANDER is part of a new approach to farming from 360 Yield Center. Designed to provide crop management solutions at every turn – from planning and planting to midseason nutrient application and harvesting. Giving you more control to significantly improve your yield.
**EXP Weed Control with Drift Management Systems - Corn**

**Why this concept?** To determine weed control with a novel adjuvant system designed for enhanced weed control and drift mitigation for dicamba-based herbicides.

**What to look for as concept is monitored throughout trial:** Monitor grass and broadleaf weed control in corn treated with glyphosate + Status. Take photos.

**OBJECTIVE:**
- Apply herbicides in a manner that reduces drift risk from herbicide application.
- Achieve commercially acceptable weed control.
**EXP Water Management Adjuvant - Pivot Irrigation Fields**

**Why this concept?** Availability of irrigated water can limit corn growth and development. The US EXP soil water management adjuvant provides a method to improve irrigation water use efficiency when applied throughout the growing season and in an easy to use formulation.

**What to look for as concept is monitored throughout trial:** Monitor corn for improved growth and development throughout the growing season starting after the first application of the soil water management adjuvant. Document the amount of irrigation and rain fall applied. Take photos throughout the growing season.

**OBJECTIVE:**
- Demonstrate and document the response of corn under irrigation with US EXP Soil water management adjuvant.
- Improve corn yield under irrigation with the inclusion of US EXP Soil water management adjuvant in irrigation water.
**FMC 3RIVE3D**
Registered in CO, CT, DE, IA, IL, IN, KS, KY, MA, MD, ME, MI, MN, MO, ND, NE, NH, NJ, NY, OH, OK, PA, RI, SD, VA, VT, WI, WV

**Why this concept?** 3RIVE 3D™ application technology is an at-plant crop protection delivery platform. This new technology integrates formulation, application and active ingredient to efficiently cover more ground in less time with fewer refills – saving water, fuel, labor, and time.

**What to look for as concept is monitored throughout trial:** Monitor crop for insect control and stand preservation. Experience new application technology.

**OBJECTIVE:**
- Demonstrate and document corn response to FMC 3RIVE3D insect control.

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**Introducing 3RIVE 3D™ from FMC Agricultural Solutions.**
Increase net planting speed, in-furrow protection and early season success.

3RIVE 3D seamlessly integrates formulation technology, application technology and active ingredient to offer a revolutionary at-plant, crop protection delivery platform.

This patent-pending technology sets growers free to easily and efficiently cover more ground in less time with fewer refills – **saving water, fuel, labor and time.**

**How it works:**
- The 3RIVE 3D applicator includes a water tank, product tank and all moving parts required for application. Its compact design easily mounts to all major planter brands.
- Water and control products exclusively formulated for use in the 3RIVE 3D system are mixed by the applicator, requiring no measuring, mixing or tank agitation and simplifying system clean out at the end of the planting season.
- The 3RIVE 3D manifold precisely mixes the right amount of product with a low volume of water and expands the mixture up to 50X into a three-dimensional, continuous Zone of Protection delivered directly into the furrow.
- The advantages of low water volumes include no need for large saddle tanks or changing tender rigs, less soil compaction, fewer refills, faster net planting speed and minimal storage requirements.
- This exclusive delivery platform provides future opportunities for combining multiple active ingredients including insecticides, fungicides and biostimulants.
Discover a whole new precision performance platform.

CAPTURE® 3RIVE 3D™ will be the first formulation designed exclusively for use with the 3RIVE 3D delivery system.

As the leading liquid at-plant insecticide brand¹, Capture® LFR® has proven its value to growers who have seen that in-the-bag protection isn’t enough. The patent-pending CAPTURE 3RIVE 3D formulation offers all the benefits of Capture LFR and more.

By overcoming issues like handling, convenience, water usage and weight, CAPTURE 3RIVE 3D opens opportunities for more growers to take advantage of an at-plant solution that won’t slow them down and fits the way they farm.

3RIVE 3D technology will be sold to growers through the FMC network of qualified Star Retailers. Emerge Application Solutions™ will produce, install and service the 3RIVE 3D Applicator units.

Quick Facts:

- Soil pests are increasingly hard to control and damage to emerging corn can seriously impact yields
- CAPTURE® 3RIVE 3D™ delivered in furrow creates a continuous Zone of Protection against soil pests
- Protects against corn rootworms, cutworms, wireworms, grubs and other pests before they inflict damage
- Allows growers to plant 480 acres without refilling, based on standard corn rootworm application rates
- Numerous field trials throughout the Midwest show that Capture® LFR® can help increase stand counts by an average of 1,441 plants per acre²
- Years of cumulative reports also show that Capture® LFR® can help boost yields by an average of 11 bushels per acre³

Now is your opportunity to thrive.

3RIVE 3D is novel technology that combines molecule and machine into a precision platform for solutions and use patterns that will enhance productivity through seedling defense, plant health and farming efficiency.

To learn more, talk to your FMC representative.

Always read and follow label directions. Capture is a restricted use pesticide. FMC, Capture and 3RIVE 3D are trademarks and Investing in farming’s future is a service mark of FMC Corporation. Capture 3RIVE 3D is not currently registered for use. It is currently in the development stage for use in corn. This technical fact sheet is for informational purposes only and is not to be used as a recommendation for sales.

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¹AgroTrak data
²Data available upon request.
³Corn, based on studies from 2006 to 2011.