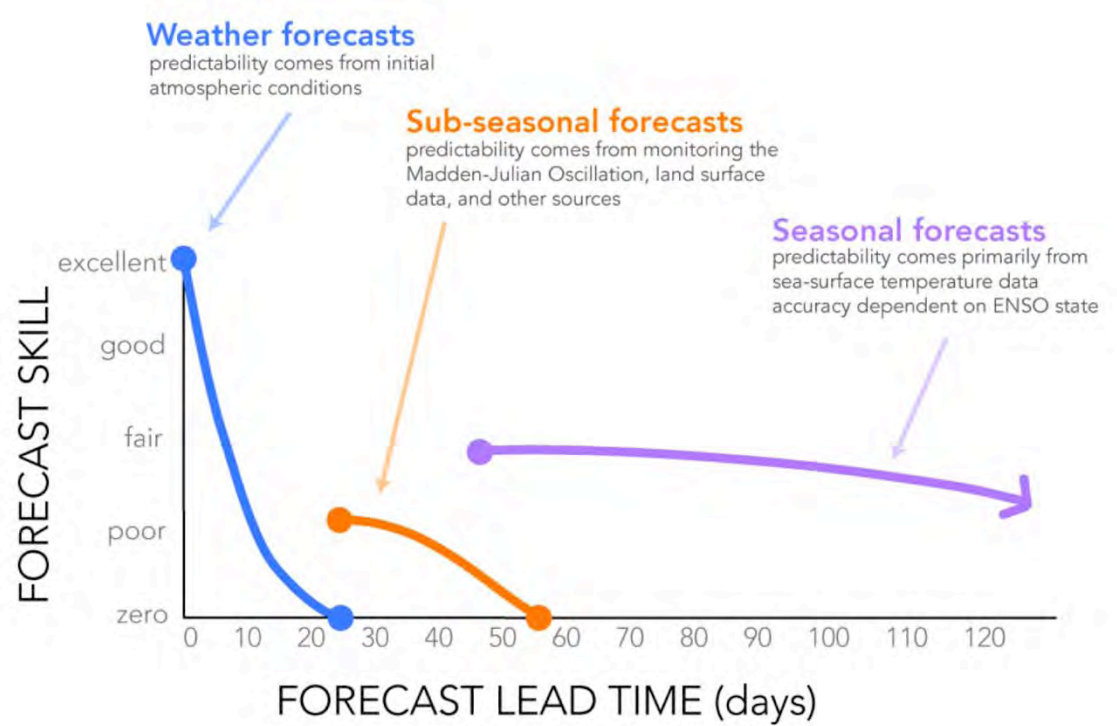


Forecast Accuracy

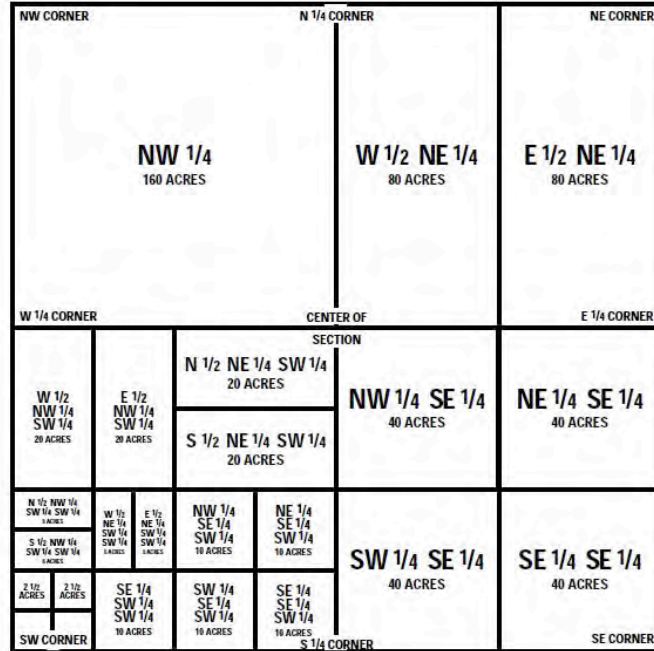


Milestone Weather Forecasting Stone, Newtown St Boswells, Scottish Borders

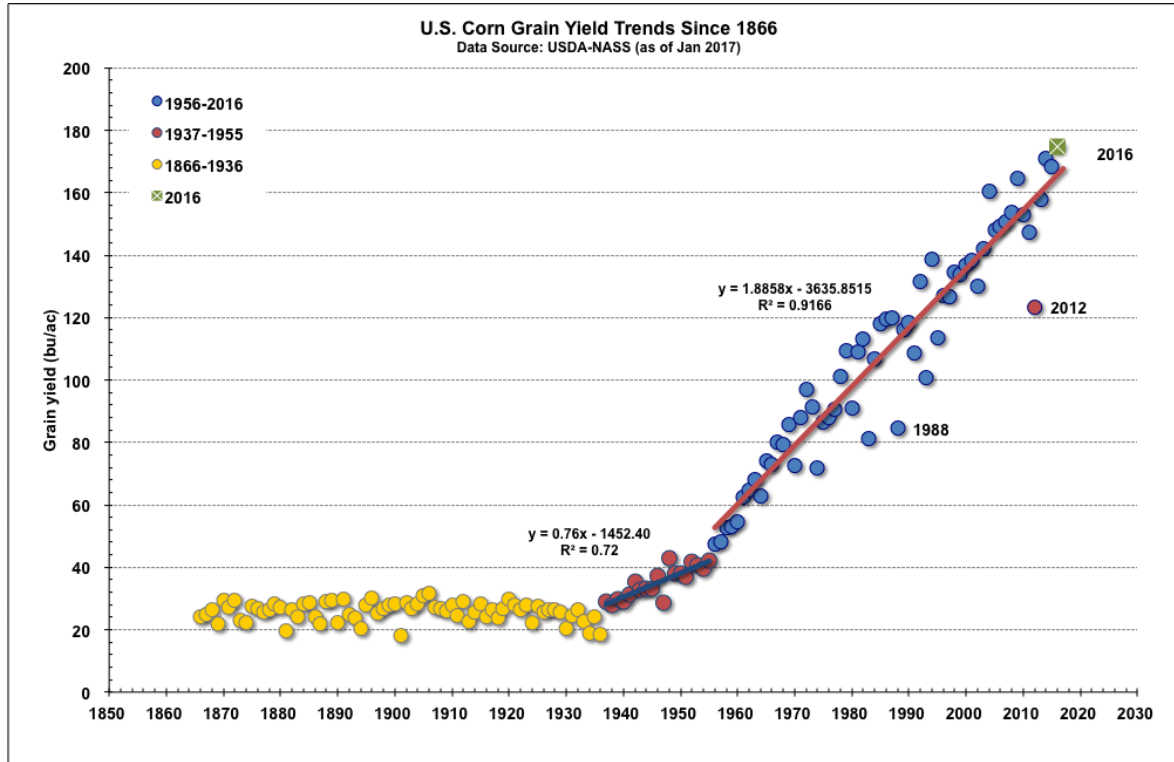


Where to use what?

Typical Section Format



What the Big Deal about Big Data?



Purdue Agronomy - Purdue University

Gathering Data

The screenshot displays the Morning Farm Report web application interface. The top navigation bar includes "Home", "My Farms", "Products", "Partnerships", "About Us", "Weather Story", and "Resources". The left sidebar contains "Farm Tree", "My Data", "My Maps", "My Summary", "Field Story", "Field Forecast", "Tractor Time Daily", "Tractor Time Hourly", "Yield Engine", "Nutrient Engine", "Hail Events", and "Spray Smart".

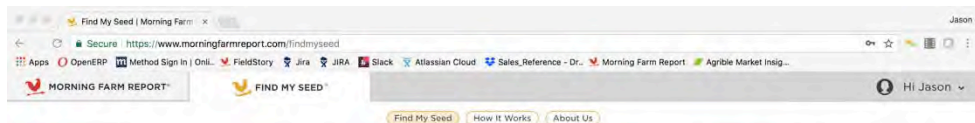
The main content area shows a mission report for 4/15/2017. The report includes:

- Account Data:** Org Name: 1 Todd's Master Plan; Grower Name: Todd & Renee Ho...
- Mission Data:**

Date	Pilot	Field Size	Flight Duration	Damage
4/19/2017	Todd Weitekamp	65 ac	15.9 mins	0%
4/19/2017	Todd Weitekamp	65 ac	15.9 mins	0%
4/15/2017	Todd & Renee Ho...	65 ac	15.9 mins	4.43%
- Damage Assessment:** No Damage, 100%, 65 ac

The right side of the interface features a large aerial map of the field. A sidebar on the right contains "Layers and Details" with options for "Flight Details", "Flight Images", and "Picture Pixel". The "Flight Details" section is expanded, showing "On" status for "Share" and "Field Scene Image", and "On" for "Flight-Images". A "Select a Weather Layer" dialog box is visible at the bottom right of the map area.

Organize the Data



4,167 Trials

646 Varieties

Crop: Soybeans

Location: USA, Illinois

Brand: RR2Y, BOLT, RR2X, Balance GT

Ag Practices: 3, 4

Soil

Results

Top Seed Varieties

Based on your selections these are the top seed varieties. Click on a specific seed card to see its yield advantage and agronomic information. Click again to review more detailed information including trial results.

Seed Variety	Yield Advantage (bu/ac)
LG Seeds C311R2	+7.0
NK S30C1	+6.8
Stayer 4303R2	+6.8
Stayer 4704XR	+6.4
Fx Seeds H540A32	+6.2

Top Seeds Summary

LG SEEDS C311R2 earned a Rooster Score of Excellent based on its performance across all trials. Based on your selected factors, there was 1 trial and the yield was 66.5 bu/acre with a yield advantage of 7.0 bu/acre. Click a card to know more.

The Yield Advantage represents the number of bu/acre that a variety produced over the average of the trial group. A high Yield Advantage number indicates a high yielding variety on average. A lower Yield Advantage number indicates a lower yielding variety on average.

More Details

POCKET RAIN GAUGE

Learn More

POCKET DRONE CONTROL

Learn More

AGRIABLE MORNING FARM REPORT

Home My Farms Products Partnerships About Us Weather Story Resources

My Data My Map Summary Field Story Field Forecast Tractor Time Daily Tractor Time Hourly Yield Engine Harvest Engine Mail Events Spray Smart Field Engine Critical Periods Systemwide Sourcing Air & Space Market

Field location with selected Morning Farm Report account and purchased Agribility items

My Account

- Todd's Master Plan
- Demo Account
- My Group
- Littlefoot
- Home 8D
- North 6G
- Surrounding

Chemical Application

Application Method: Aerial	Carrier: Water	Water Additives: No	Add Applicator and Certification Number: Stickers	Percent of Field Sprayed: 100.0%	Pesticide Type: Fungicide
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Flight Log

UAS Name: P4 PRO	Pilot Name: Jason	Flight Duration: 0 : 10 (hours:minutes)	Incidents: No	Field Finance: Grower Share: 100.0%	Cost Entry Method: Total Cost for Field
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Chemical Application

Application Method: Broadcast	Carrier: Water	Water Additives: Adjuvants	Add Applicator and Certification Number: Yes	Applicator Name: Jason	Certification Number: 123456789
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Fertilization

Type: Dry Synthetic	Fertilizers: Urea 46-00-00	Manufacturer or Supplier: Generic	Entry Method: Product Amount	Product Amount: 150.0 lb/acre	N Amount: 69.0 lb/acre	Stabilizer: No
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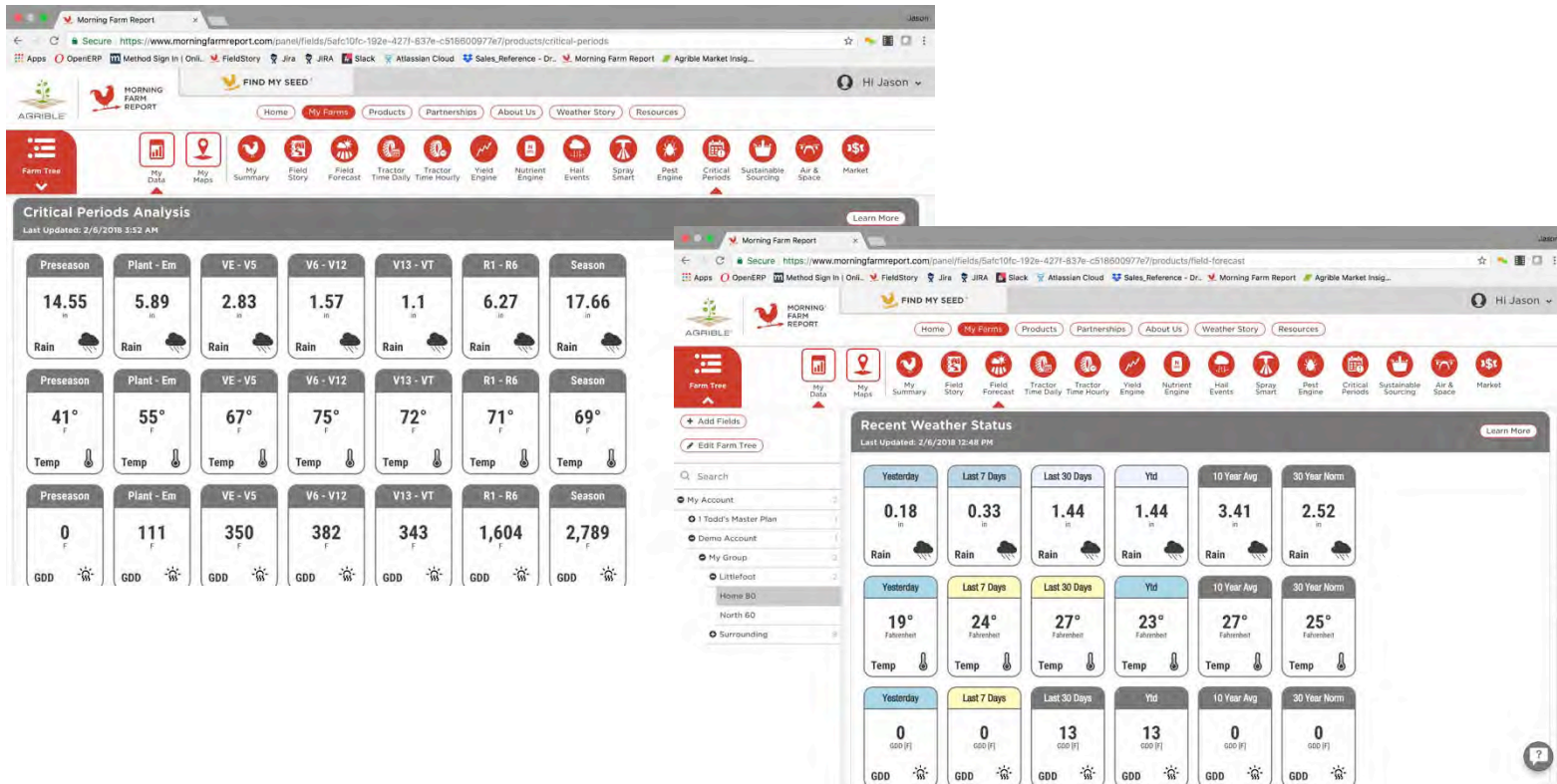
Planting (Sowing)

Crop: Corn	Specific Crop: Field Corn	Seed Type: By Brand	By Brand: AGRIGOLD	Seed Name: A64995TXRB	Seed Treatment: Fungicide, Insecticide	Seeding Method: Row
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Tillage

Tillage Type	Equipment Type	Remaining Residue	Field Finance: Grower Share	Cost Entry Method	Total Cost for Field
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Converting Data to Information



Using Predictive Analytics

1

Forecast / Historical Weather

Weather Forecasts are generated. These are from multiple sources across the world. Historical data sources have been compiled in our system.

2

Agronomic Management

Field Story field management is reviewed and compiled for simulation. Factors are integrated into the system including irrigation, application rates, and other details.

3

Simulation

Simulations are completed for all forecasting. Crop growth is simulated. Stresses are derived. Yields and nutrient requirements are simulated. Ensembles are generated

4

Yield and Nutrient Knowledge

Product data are generated, data science is implemented to derive knowledge from the data. Product data are generated to inform the user.

Using Predictive Analytics

Morning Farm Report

https://www.morningfarmreport.com/panel/fields/5afc10fc-192e-4271-837e-c518600977e7/products/nutrient-engine

Hi Jason

Home My Farms Products Partnerships About Us Weather Story Resources

My Data My Maps My Summary Field Story Field Forecast Tractor Time Daily Tractor Time Hourly Field Engine Nutrient Engine Mail Events Spray Smart Pest Engine

Forecast Soil Nitrogen

Required	Available	Surplus
13.8 lb/ac	71.3 lb/ac	71.3 lb/ac
Until Maturity N	Until Maturity N	Until Maturity N

Status Soil Nitrogen

Total	Available	Inorganic	Organic
476.1 lb/ac	71.3 lb/ac	71.4 lb/ac	404.7 lb/ac
Season To Date N	Season To Date N	Season To Date N	Season To Date N

Use Crop Nitrogen

Growth Stage	Grain	Plant	Uptake
0.6	117.6	0.1	0.0%

Morning Farm Report

https://www.morningfarmreport.com/panel/fields/5afc10fc-192e-4271-837e-c518600977e7/products/spray-smart

Hi Jason

Home My Farms Products Partnerships About Us Weather Story Resources

My Data My Maps My Summary Field Story Field Forecast Tractor Time Daily Tractor Time Hourly Field Engine Nutrient Engine Mail Events Spray Smart Pest Engine Critical Periods Sustainable Sourcing Air & Space Market

Spray Smart

Last Updated: 2/6/2018 12:48 PM

Date-Time	Primary Wet Spot	Temperature Inversion	Direction Wind Speed	Conditions	Pollinator	Spray Log
2/5/2018						
3 PM	FRZN FRZN	None	6.8 mph	Cloudy	✓	Add
3:30 PM			6.8 mph		✓	
4 PM			6.9 mph		✓	Add
5 PM Sunset 5:17 PM			5.5 mph		✓	Add
6 PM			4.8 mph		✓	Add
7 PM			6.5 mph		✓	Add
8 PM			8.0 mph		✓	Add

Benchmarking

The screenshot displays the Morning Farm Report dashboard, which provides benchmarking data for various agricultural metrics. The dashboard is organized into several sections:

- Sustainable Sourcing:** This section provides an overview of sustainability metrics. It includes a "Recalculate" button and a "Plot" button. The metrics are:
 - Land Use: 25%
 - Nitrogen Use: 9%
 - Soil Loss: 194%
 - Soil Carbon: 92%
 - Energy Use: 22%
 - GHG Emissions: 12%
 - Water Use: No Water Used
 - Water Quality: 61%
- Overview Summary:** This section provides a summary of the sustainability metrics. It states: "The Agrible® Summary card sustainability metrics comparison, visit the individual product page for more information. The Nil Agrible® Nutrient Engine™ Farm Report®. Nitrogen fertilizer and energy uses. The fast manage Nitrogen in-season." It also includes an "Overview Data" section with a note: "The Overview Summary card that card's specific local benchmark. Green indicates that in some instances the..."
- Soil Use Details:** This section provides detailed information about soil use. It includes a "Recalculate" button and a "Plot" button. The metrics are:
 - Land Use: 4.83 ac/1,000 bu
 - Soil Loss: 0.18 tons/US/1,000 bu/year
 - Soil Carbon: 0.9 soil condition index

The dashboard also features a navigation menu with options like Home, My Farms, Products, Partnerships, About Us, Weather Story, and Resources. The user is logged in as Jason.

Our products and services provide estimates and recommendations based on models and do not guarantee results. We do not endorse any brand or product. We encourage you to consult other agricultural professionals, such as crop consultants, agronomists, or other trusted advisors. Farming decisions inherently involve risk; our goal is to help you in your risk management and operational decisions. Best of luck and good weather with your fields! Agrible! You may also be interested in downloading related reports.



Look for ROI

The image displays two overlapping screenshots of the Morning Farm Report website's 'Sustainable Sourcing' dashboard. The top navigation bar includes 'FIND MY SEED' and a user profile for 'Hi Todd W.'. The dashboard features a 'Farm Tree' sidebar and a main content area with various data cards and a navigation menu.

Water Use Details (Left View):

- Water Use:** 1,086.2 gallons
- Yield Gain:** 5 bushels
- Description:** The Water Use card shows your data from Field Story™ used to calculate bushels. The second card, for Yield Gain, compares the field yield with an math showing the gain in yield that irrigation made this season.

Nitrogen Use Details (Right View):

- N Use:** 1.2 lbs/bu
- N Converted:** 98.0% applied
- Description:** Nitrogen fertilization is a large cost of production and a large energy input in agriculture. The Use card shows how much Nitrogen the crop is utilizing to grow and any losses from the plant environment. The converted number is the efficiency of that grower-added Nitrogen converting to plant growth. Nitrogen fertilizer dynamics in a soil are complex and depend on soil types and weather. The Nitrogen Converted value will never get to 100%, but managing applications towards higher percentages should be a goal.

Both views include a 'Farm Tree' sidebar with a search function and a list of farm locations including Littlefoot, Home 60, North 60, Surrounding, Aifalfa, Liberty Link, Liberty Link, Non GMO, Orchard, Pollinator Pocket, and RR2. A disclaimer at the bottom states: 'Our products and services provide estimates and recommendations based on models and do not guarantee results. We do not endorse any brand or product. We encourage you to consult other agricultural professionals, such as crop consultants, agronomists, or other trusted advisors. Farming decisions inherently involve risk; our goal is to help you in your risk management and operational decisions. Best of luck and enjoy working with your friends at Agrible! Your own information and decisions about results.'

Extracting Value from the Data

Where is the crop, how big is it and when will it be harvested?



- Efficient basis determination
Areas of surplus and shortage
- Efficient draw area utilization
Capture the bushels that make sense
- Crop movement logistics planning
Anticipate when trucks, trains and barges are needed
- Asset throughput optimization
Know the crop size and harvest timing early to avoid plugging the system

Close the Loop



Predict

Analytics drive the conversation regarding management.



Confirm

Drone flight review, Scouting, and In-Season services confirm the problem.



Decide

Using recommendation engines, services are recommended to the grower.



Take Action

Actions are taken by the grower, by the agronomist, or by the retailer to complete the process.



Self-Learning

Artificially-intelligent systems learn to be better while improving for each user experience



How is YOUR Data being used?

The Ag Data Transparency Evaluator is a non-profit corporation backed by farmer-led industry organizations and Ag Technology Providers (ATPs)

- Farmer-led organizations must approve all significant decisions made by the corporation.
- Companies under evaluation cannot influence the review process.
- The ATPs involved include all sizes, from multi-billion dollar corporations to start-ups.
- Only companies receiving approval are allowed to use the “Ag Data Transparent Seal”

How do growers use it?

- Look for the “Ag Data Transparent” seal which indicates a company has been through the review process.
- Go to the Ag Data Transparent website and compare different company offerings.



Questions?

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