Agenda

- Indigo Overview
- Water Credits, Data, Benchmarking Ideas
- Survey Closeout
Indigo Overview
Harnessing Nature to Help Farmers Sustainably Feed the Planet

... by focusing on improving farmer profitability

... by improving the sustainability of agriculture

... and by better aligning agricultural practices with consumer health
In 2016, our introductory year, we planted ~50,000 acres of commercial cotton trials and ~20,000 acres of commercial wheat trials (non-revenue generating). Data from these commercial trials (11% yield increase in cotton and 8% yield increase in wheat) gave growers confidence in our products for 2017 adoption.
We evaluate thousands of microbes each year to find the ones that work best for a particular region and crop

**HOW IT WORKS**

**High-Stress Fields**
Indigo collects thousands of plant samples from highly targeted fields experiencing stressed conditions.

**Laboratory**
We sequence DNA, run experiments and identify beneficial microbes.

**Greenhouse**
We conduct ongoing experiments in our Boston and RTP greenhouses.

**Field Trials & IRP**
Small-plot field trials and IRP fields in locations around the world.

**Commercial Fields**
Top-performing microbes are selected for commercial use.

**Indigo Research Partners**
Indigo collects thousands of plant samples from highly targeted fields experiencing stressed conditions.

**Indigo Atlas**
Top-performing microbes are selected for commercial use.

**Other Enabling Indigo Platforms**
- **Microbial Technology**
- **Field Technology**
- **Digital Agronomy**
- **Carbon Credits**
- **Geospatial Technology**
2018 & 2019 HIGHLIGHTS

Indigo cotton demonstrates greater biomass, earlier boll formation and improved resiliency to water stress

Lowake, TX

Increased resiliency to water stress* 46%
Increase in dry root biomass

Earlier boll formation 66%
Increased boll per plant

12% Yield increase

Wall, TX
Indigo Water Solutions
Situation #1

Consumers are demanding more sustainably sourced and/or grown products

Consumer Demand Trends

- **SUSTAINABLY GROWN**: 38% of global consumers would pay premiums for sustainable products¹
- **TRACEABLE TO FARM**: 10% globally, consumers are willing to pay as much as 10% more for traceability²
- **CLIMATE POSITIVE**: 55% of consumers are willing to pay for climate-friendly products³
Situation #2

Water is the #1 goal of fashion brands yet they are not engaging with farmers

In a recent survey of 20 major brands 85% have sustainability goals >> 75% which relate to water savings

Apparel Brand Goals

- Brands mainly focus on water savings during the manufacturing phase, yet more could be done by engaging and cost sharing with farmers
- Brands find it increasingly difficult to connect with farmers to meet their goals and offset their footprint
Situation #3

Growers margins are squeezed so tightly that irrigation optimization decisions are challenging.

How do we solve them?

Now - thinking about #1, #2, & #3

Seasonal costs and returns per acre

- Fuel Costs $0.50
- Inputs - N, P, K, chemistry $0.40
- Maintenance $0.10
- Labor $0.20

Every season is a balancing act for a grower’s livelihood. Currently the burden of farm water sustainability falls solely on farmers.

Will I be profitable?

$0.59 - loss
$0.64 - loss
$0.75 - break even
$0.90 - profitable

How do we solve them?
Indigo can bridge the gap between growers and brands to allow for increased profitability at the farm

**Growers**
- Reward farmers already using water efficient practices
- Increased profitability per acre
- Completely voluntary - opt in.
- Ensures privacy of data
- Sharing expensive equipment costs

**Brands**
- Connect with farmers to reach water goals
- Increased supply chain transparency
- Scalability of sustainable projects
- Quantifiable outputs (marketing messages to consumer)
Growers generate water credits for using less water than a benchmark, Indigo sells those credits to consumers and brands

You can generate a water credit by improving irrigation efficiency used on your farm

**Concept**

**Program priorities**

**Voluntary**
- Program is only if you want it (opt-in)

**Recognition**
- Program is here to reward what you are already doing, increase your profitability per acre and allow for further improvements to your operation

**Privacy**
- All of your data is yours. We only need it to make sure a credit is verified. Data will be kept proprietary.
Data Collection
- Feedback Requested (Survey)
To ensure that credits can be issued - some form of data collection on the field level would be needed

Proposed Approach

Data needs for validation of credit:
- Field level verification of irrigation amount
- Field level verification of timing

Questions that we have for you

- Do you use a flow meter?
- Do you have a telemetric package on your pivot?
- How many pumps have a flow meter?
- What would stop you from adopting a program like this?
- Costs?
- Monitored water?
- What are your recommendation for data collection?
- How would you want data collected?
Benchmarking
-Feedback Requested (Survey)
We want to define a benchmark that meets grower's requirements first

Grower perspective

• Want to **minimize cost** of measurement
• Will require “**proof**” of **profitability uplift** when it comes to water use efficiency
• Like to see **comparisons** to other farmers in local area
• Would like for the **capacity** of their well(s) to be considered
• Desire a **fair** and **comprehensive** process
• Require **privacy of data** -- data collection will be used solely for validating of savings and kept proprietary

If you have any additions here - please capture on the survey handout
Here are a few more considerations we have outlined as part of this benchmarking process

Goal

• Incentivize growers to reach maximum water use efficiency

Considerations

Segment groups into peer groups based on:
- Soil texture
- Crop type
- Weather (rainfall, heat units) across each stage of crop growth

Show growers that water savings can create yield uplift

Ensure benchmarking process is done in collaboration with at least one or more of the following: Texas Tech, TAWC, Texas A&M AgriLife, and USDA
We have looked into three benchmarking options and we believe that **optimal** is the best as yield is taken into consideration.

**Grower Actuals Historically**
- Benchmark set as average of last 5 years of irrigation
- Requires field-level irrigation data for last 3-5 years to inform benchmark

**Grower Actuals from Current Season**
- Benchmark set as average of current season
- Requires current field level irrigation data to inform benchmark

**Optimal Benchmark**
- Benchmark set each season above optimal level
- Requires watering requirement curves developed by research centers of excellence in regions of crop growth

Rainfall and irrigation amounts are taken into consideration across all three options.
This is how we are envisioning the optimal benchmarking process

1. Develop grower segments based on soil texture, crop type, weather
   - Irrigation requirements vary by soil texture, crop type, and weather
   - Segment growers by these factors, and not be constrained by geography or region

2. Understand optimal watering amounts over the course of a season
   - Each grower segment has an optimal watering curve
   - We can work with research and industry partners to define optimal water needs by segment
   - We can back-test optimal water needs on IRP acres

3. Set water credit benchmark based on optimal water requirements
   - We can set a benchmark slightly above the optimal amount, representing a fair water use efficiency amount
   - Growers would be rewarded for the gap between their water use efficiency and the benchmark

Water Requirement (inches)

- 0.04
- 0.18
- 0.41
- 1.28
- 1.16
- 0.88
- 0.35
- 0.02

Set water credit benchmark based on optimal water requirements

Water applied

- Eligible for water credits
- Optimal
- Water credits benchmark
- Grower average

Yield

- Irrigation requirements vary by soil texture, crop type, and weather
- Segment growers by these factors, and not be constrained by geography or region
Here’s a quick example grower in West Texas to see how water credits would be generated:

**Grower Gaby**
- Soil texture: sandy loam
- Climate region: semi-arid
- Crop: cotton

Used 11 acre inches on her cotton crop this year.
We at Indigo would greatly appreciate your feedback to help us rollout this program with **YOU** in mind

1) If you could, please fill in the survey that has been distributed and return it to the TAWC registration desk at the end of the day

2) Indigo will be sticking around so if you have any questions - please come see us 1:1 after the last presentation

**Indigo contacts:**

Juan Cantu  
jcantu@indigoag.com  
806-928-4144

Ciara Cronin-Albert  
ccronin-albert@indigoag.com  
617-599-5634

Trent Newell  
tnewell@indigoag.com  
806-474-2316

Jeremy Webb  
jwebb@indigoag.com  
806-632-7224

**THANK YOU!**
Questions