DryMAX Drying

DISRUPTIVE WATER REMOVAL TECHNOLOGY

By SOBTONE

DRYMAX

DRYMAX

Our Mission

Find the best way to remove water from material using RF energy

Our Vision

Benefit multiple industries by designing dryers that lower costs, improve quality and eliminate emissions

Our Story

Started by asking the question, **“Can things be dried without heat?”**

- Invented the DryMAX process over a 2 year period.
- After 500+ experiments, the breakthrough moment happened.
- Patents filed.

INTRODUCTION

Reversing a millennium of thought on DRYING:

*** High Heat Drying is now Obsolete ***

The highest energy user in the world is **drying**

The highest polluter in the world is **drying**

Sea Change: New Science: How?

1. Biomass Drying through **"ForceField Tech"™**

2. kWh instead of BTUs

3. Drying from the **inside out**, rather than **outside layers in**

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PROBLEM

Drying is Expensive

- Propane can account for 10-50% of material costs
- Propane price is volatile and unavailable at times
- Added costs for large and dangerous equipment

Harmful to Grains/Food/Feedstocks

- Heat damages grain - cracking, mangling proteins/starches
- Nutrition loss – From 10-100% loss
- Propane/Gas embeds into food supply – hexane poisoning

Uneven Drying

- Micro-cracks, mold, toxins result
- Inside not dry, though outside is overdried
- Degrade quality/price if under or overdried (tea, hemp…)

Heat is Dangerous

- Explosions and Fires
- Natural Gas, Propane, Diesel, Steam, Wood, Coal…
- Corn takes 6 weeks to cool in bins, problems occur often

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DRYMAX SOLUTION™

Significant Improvements to the Drying Process

- RadioWave Energy™ (new science/3 patents)
- Electricity (easy to install/no Propane/no Gas)
- NOT Microwaves – (no heating)
- Energy penetrates entire material (microwaves do not)
- Water exits as Vapor (not Steam/instant/cool temp)
- Dry from from inside out (gentle, fast)
- **Cool process**: (room temperature drying)
- Lower OPEX significantly (exponentially lower costs)
- Modular: (can be built to move easily)
- Easy to Scale: (Grow over time, Add components)

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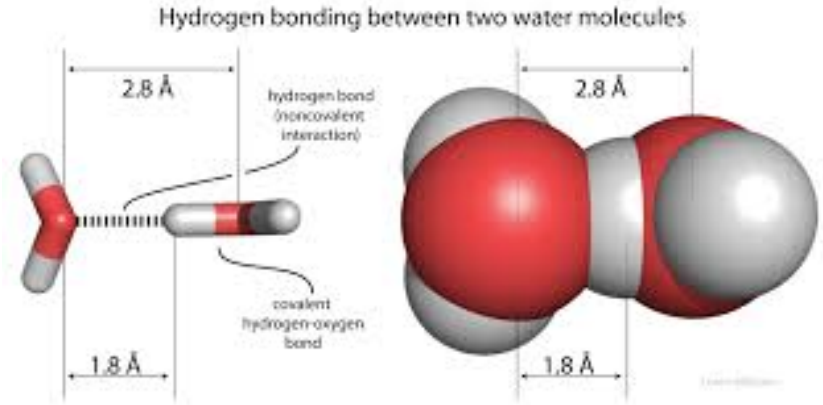
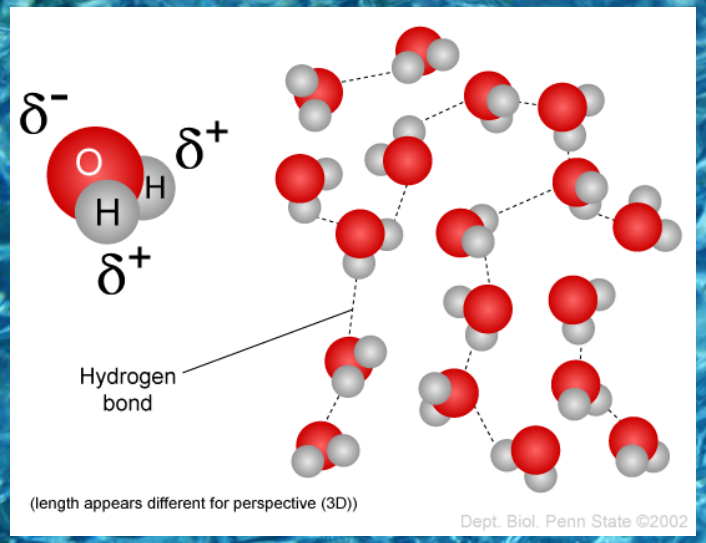
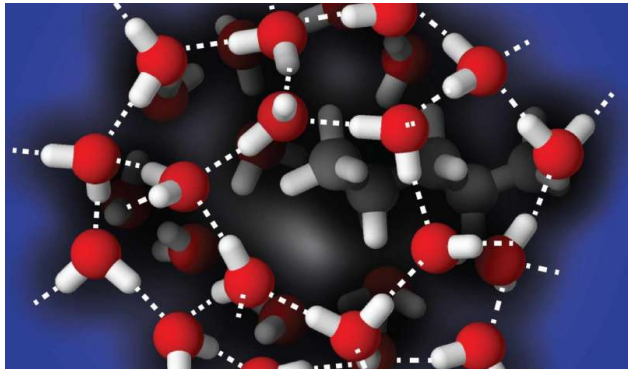
Hydrogen Bond Cutting



ForceField Technology Targets H Bonds

- DryMAX tunes the energy so that it specifically cuts **only H bonds**
- **Far Less Energy** than Microwaves that have to vibrate the H2O molecule = HEAT





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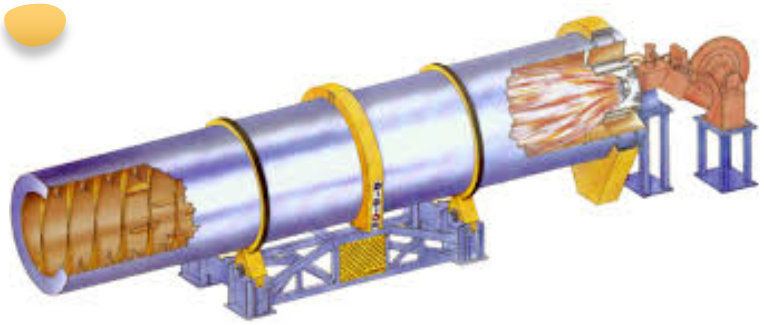
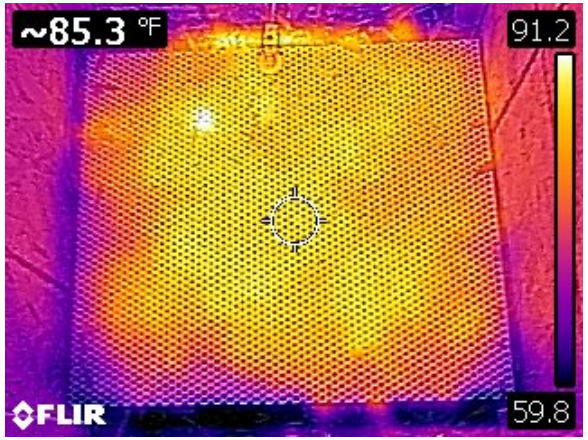
RETHINKING what the DRYER looks like

DryMAX will REPLACE all current Ag & industrial dryers worldwide

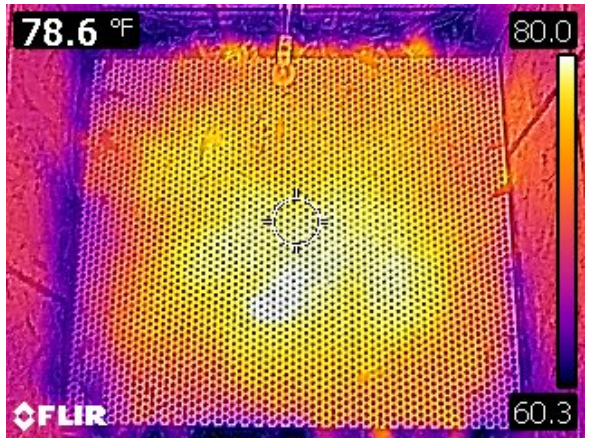


DRYING CHART 1

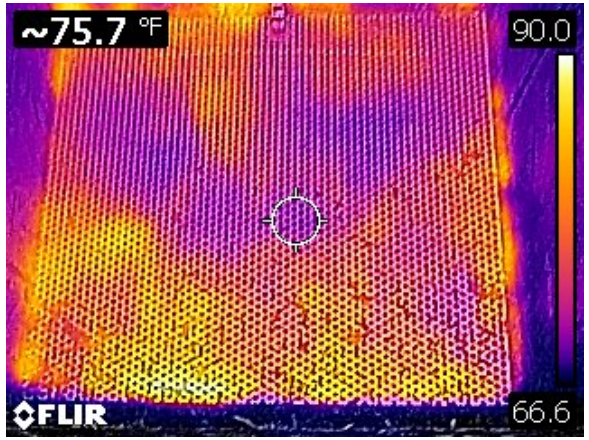
THERMAL ANALYSIS



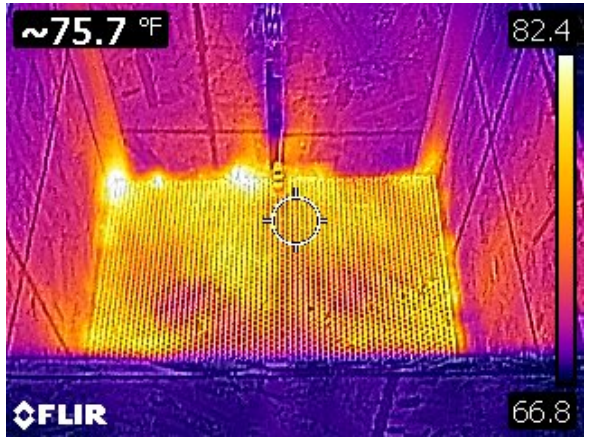
30 mins



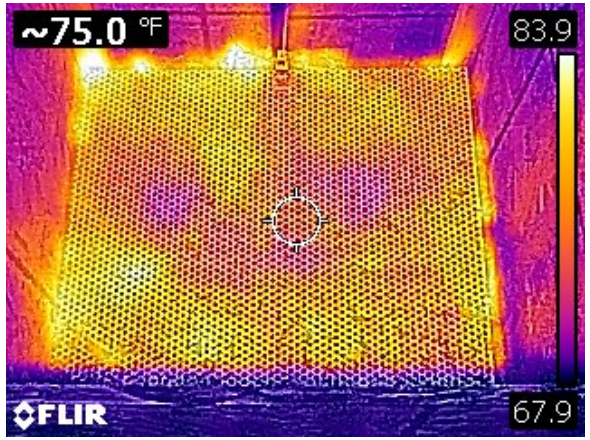
60 mins



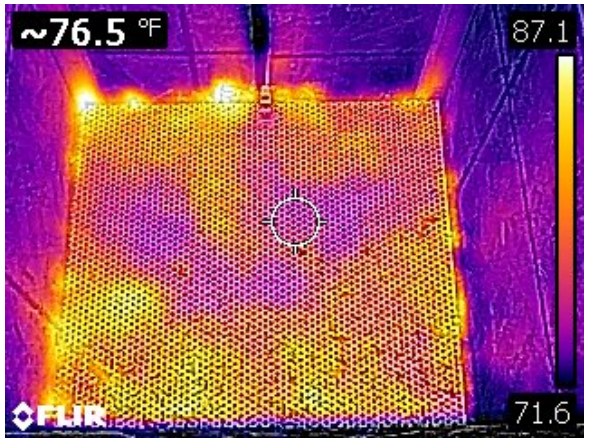
90 mins



120 mins



180 mins



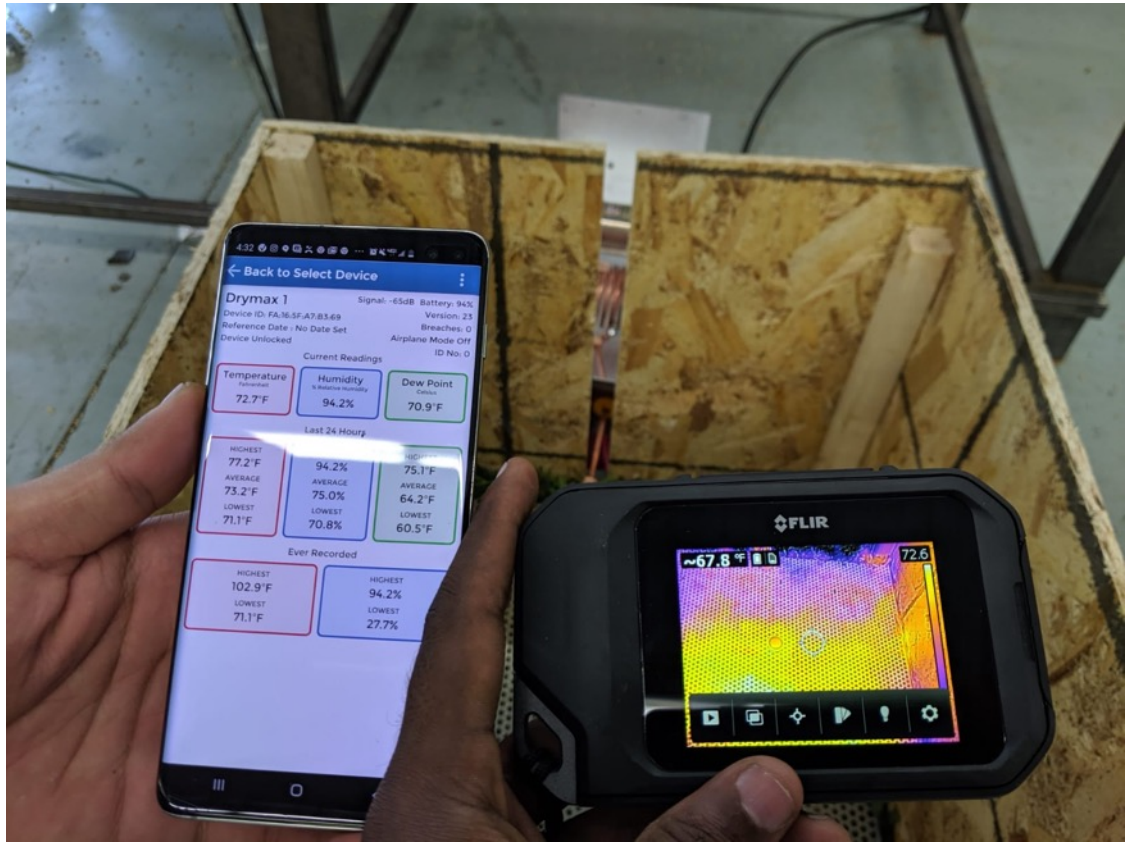
210 mins

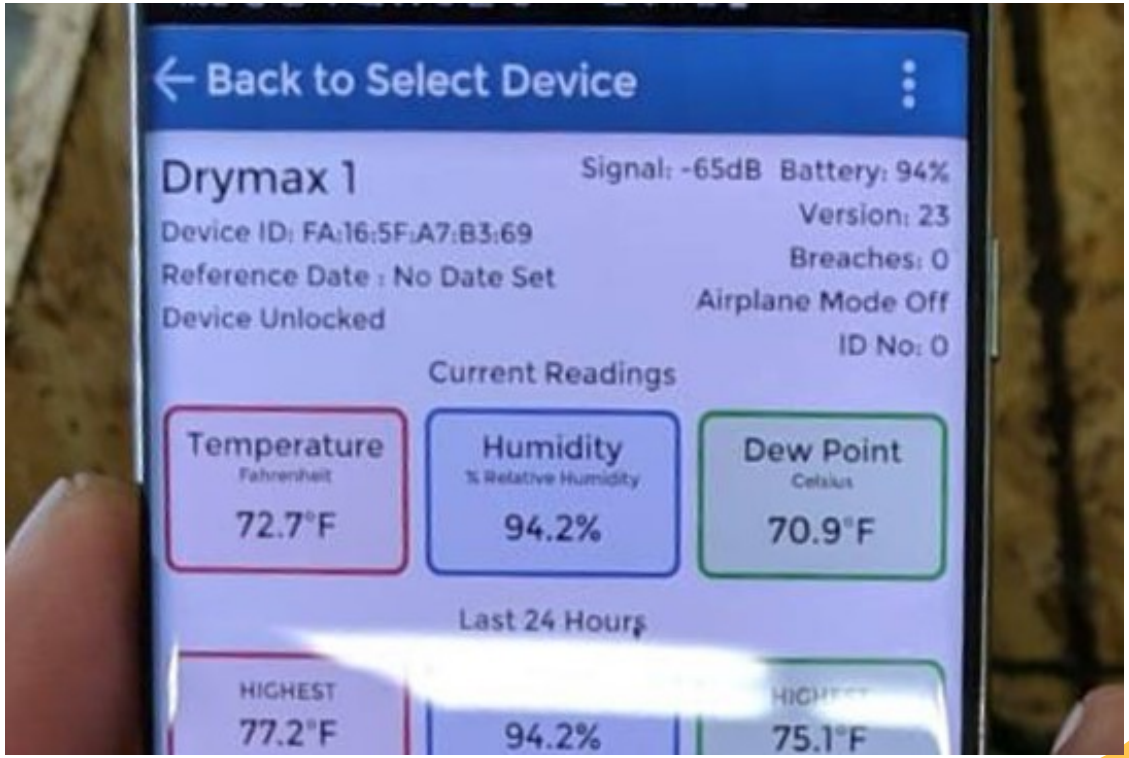
DRYING CHART 1

HUMIDITY ANALYSIS

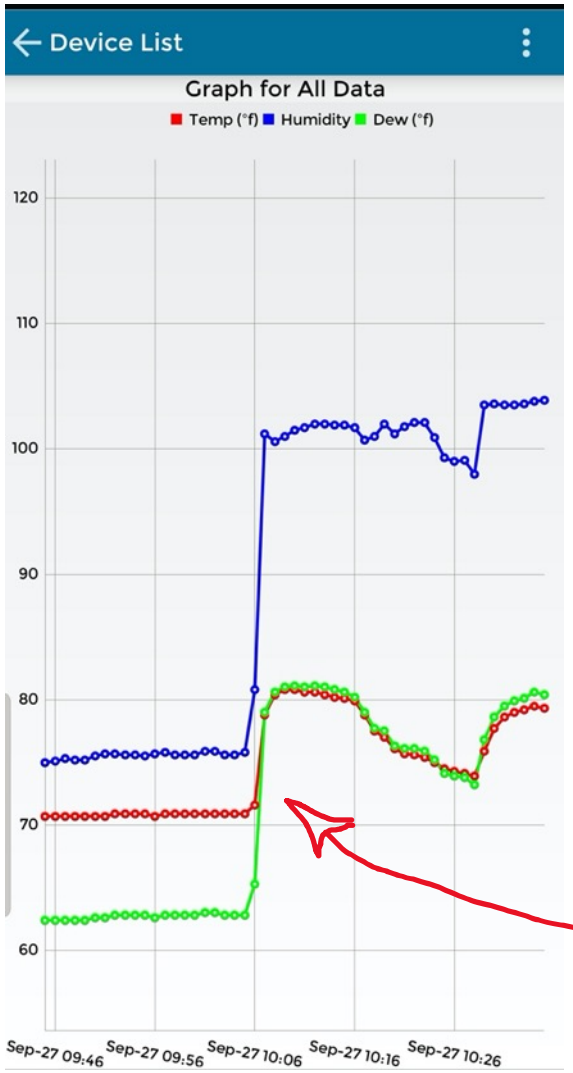
Material Temperature = 67.8° F
Exit Air Temp = 5° F > Ambient
Humidity = 46% above Ambient!!

NEVER SEEN BEFORE!





POWER USE
EXTREME LOW OPEX



GRAIN DRYING ANALYSIS

Soybeans Start at 15.6% Moisture

Ambient Humidity - 75%
Starting Temp - 71F

RF Power – 3000 W – power on 10 seconds, off 10 seconds
Effective Power – 1500W

LARGE SCALE = 36kW RF can support 1600 bushels/hour (40-60amps) 480v 3 Phase
$ 1.7 cents per bushel for 6% moisture removal!!

As soon as RF is turned on, Air Temperature and Moisture % go up immediately
GRAIN TEMP STAYS NEAR AMBIENT!

SUSTAINABILITY APPEAL

REDUCE ENERGY CONSUMPTION

– Lower Need for Gas, Propane and Wood as Fuel Source

- Expand Need for Electrical Plants

ELIMINATE GAS EMISSIONS (POLLUTION)

- kWh instead of BTUs

- Improve electrical grid/extend rural 3-phase adoption

SMALL FOOTPRINT PROCESSING

- Improve Revenue & chance to build more locations

- Village & Town Size

EASY TO SCALE

- Modular instead of Massive Infrastructure

BENEFITS

Cool Drying Process

NO CRACKING

– No micro cracks/Less Bees Wings/Much Less pieces loss

HIGHER TEST WEIGHT

- Earn more per bushel

NO COOLING IN BIN AFTER

- Less fan cost/Less spoilage

INSTANT ON

- Reliable/No adjustments needed/Automated

LIMITED FIRE POTENTIAL

- Less risk of fires

ALL THE NUTRITION

- Higher quality grains/Keep all the volatiles

LESS TOXINS

- We lowered aflatoxin by 70%

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Large Prototypes

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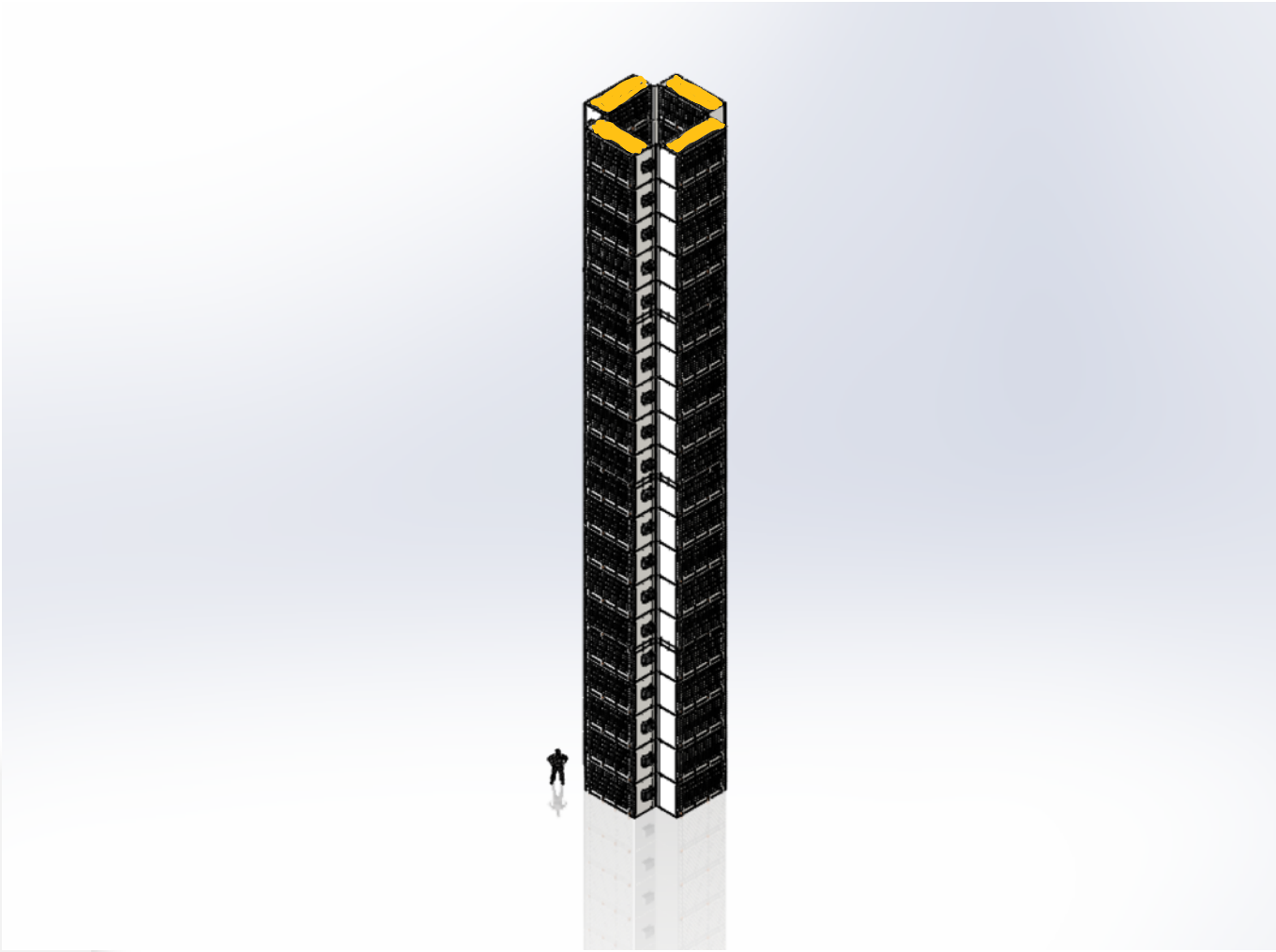
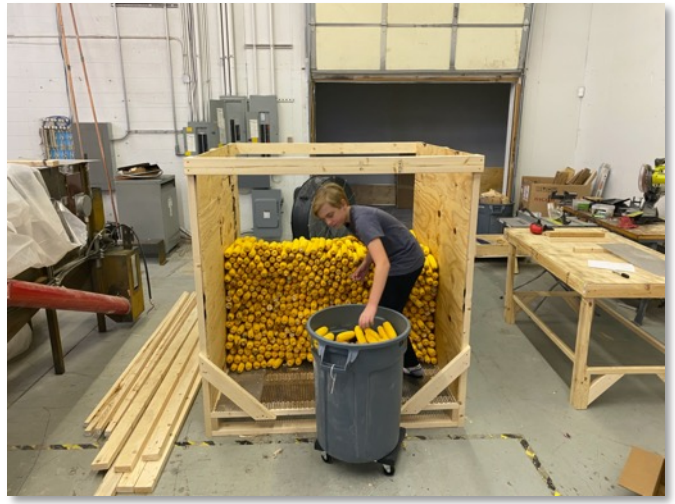
Large Prototypes

Commercial Tower – 10,000 bph



Large Prototypes



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CORN HARVEST EXAMPLE

FAST PAYBACK

Dryer Cost

- $500,000 – DryMAX Dryer
- $380,000 - Current propane dryer
- **DIFFERENCE = $120,000 CAPEX**

Energy Savings (10pts)

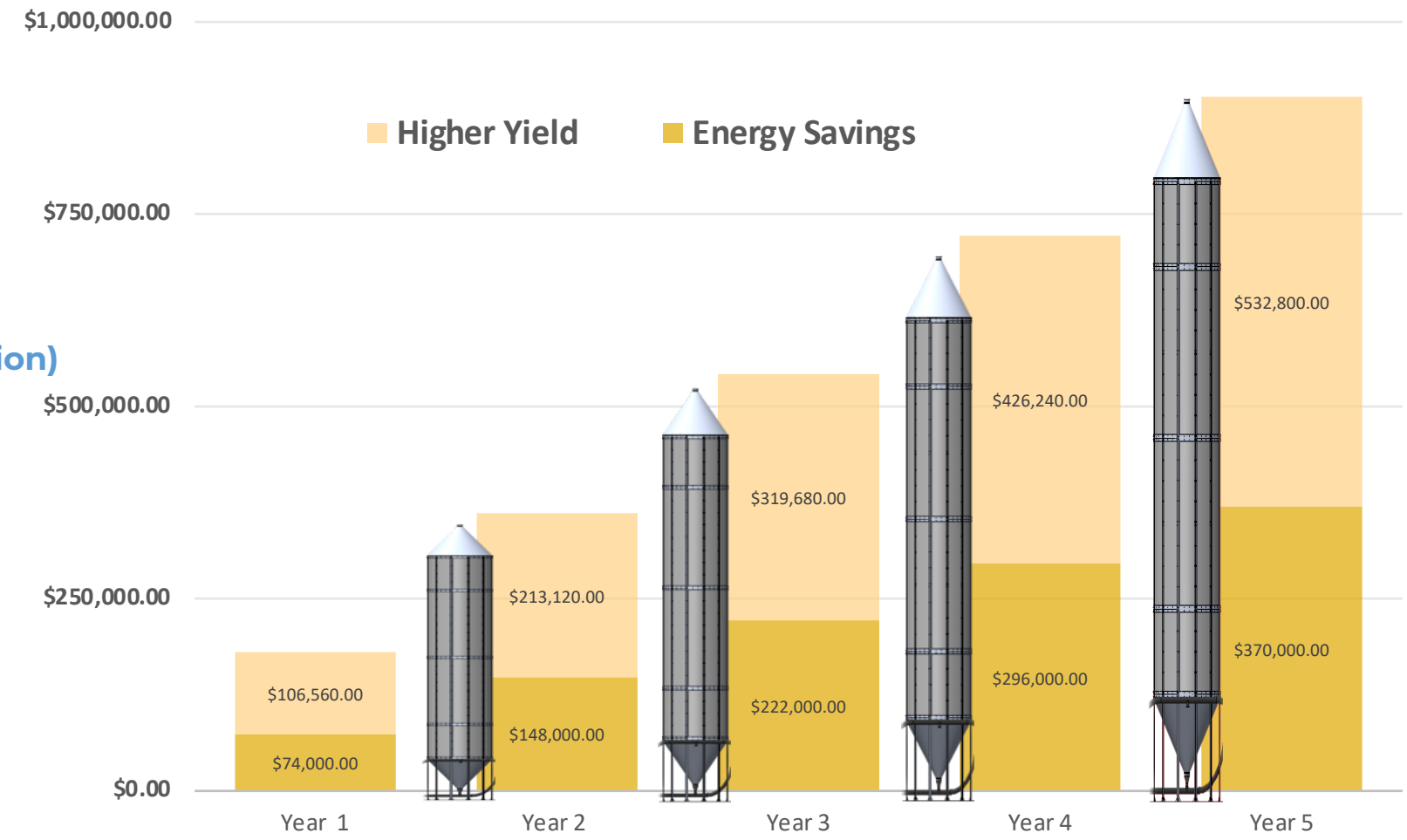
- PROPANE: $.04/pt = $.40/bushel (10 pts)
- $.001/pt = $.01/bushel **(1/40th cost reduction)**
- **5 year = $780,000 SAVINGS!!**

Field Loss Revenue

- 2% loss/week left in field
- Corn left in field for 6 weeks to dry
- Loss of YIELD = 12% or 24 Bushel
- Down to 176 bu/acre after 6 weeks
- **5 Year = $960,000 GAIN!!**

5 Year Gain

- **TOTAL = $1,740,000 GAIN**
- **More Control, Less Worry = PRICELE$$**



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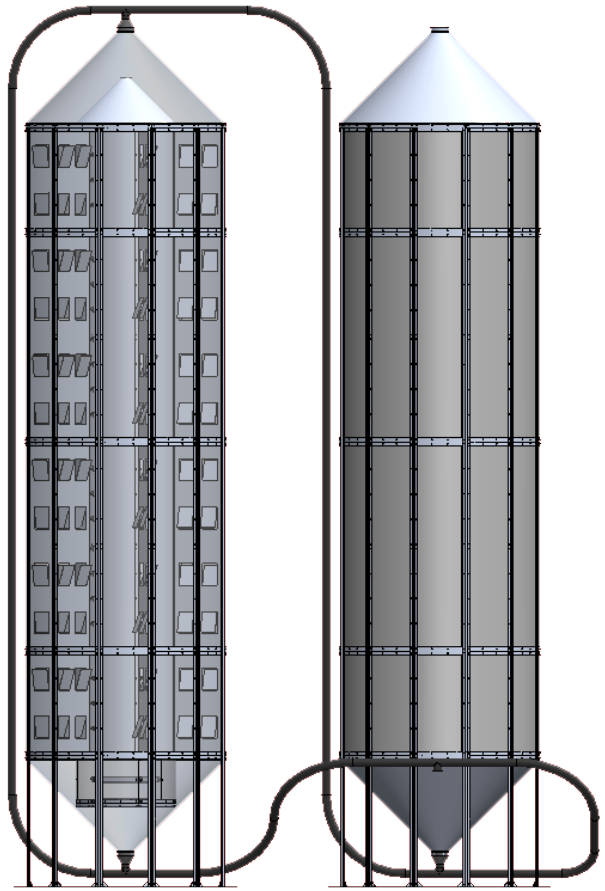
OPPORTUNITY

Drymax is Looking for JV Partners in 2020/21

- Food Processing Plants
- Multiple types of Grain Producers
- Large Feed Company
- Manure or Municipal sludge
- Alfalfa Grower
- Ethanol Refinery
- Food – Higher Quality
- Aggregates, sand and minerals
- **Other Industrial Drying Needs**



Thank You

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