

### Kanda Hemp Seeds Seeds & Equipment Solutions

Accelerating Global Industrial Fiber Hemp Growth to Support a Sustainable Future

Make Hemp Cultivation & Processing Accessible & Profitable for Growers success

#1 Fiber Seeds Distributed by Volume 2024#1 Selling Fiber Variety in the US I YumaSuccessful Grows in over 30 statesPartners to Underserved Communities



## Why Fiber Hemp For a Sustainable Future?

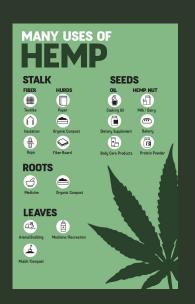




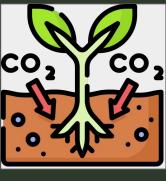
Materials contribute **20%** of global GHG emissions.

<u>Mckinsey</u>

**Net-Zero Material Transition** 



Unique Properties & Versatilities
Practical & Scalable



~6 Tons/CO2/Acre

Fastest Carbon Sink
Environmental Benefits

# Fiber Hemp Parts Breakdown



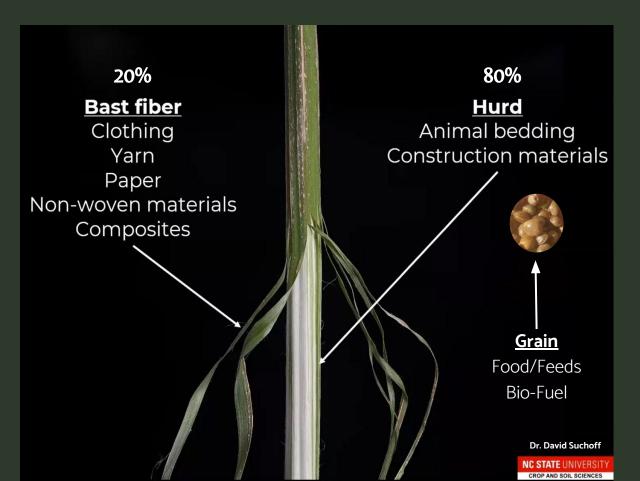


Long Fibers ~10%



Short Fiber (<5 inches)

~10%





Hurd ~80%



Grain

## **Massive Hemp End-Product Market Opportunities**





## Barriers to Fiber/Grain Hemp - US and Hawaii



#### 1. Seeds Deficiencies



3. Underdeveloped Markets:



Unsuitable Varieties
High Seed Costs



Specialized Cultivation/Harvest



Insufficient End-Product Offtake Low-Value adding



High-Costs & High-Risks

**Insufficient Processing Plant** 



Small Scale & Individual Farmers

# Solutions to Scaling Fiber Hemp in Hawaii & US



Target Key Local Markets



Affordable Hemp Homes

BioFuels BioMaterials



Tourism/Food

Animal Bedding/ Feeds

<u>Confirm Raw</u> <u>Materials Spec</u>



Low Input Costs
Pilot Scale Equipments





Establish Viable
Seed Sources



Subtropical Adapted Seeds

# Fiber/Grain Hemp Seed Varieties Types



#### **Key Attributes:**

- Latitudes Adapted
- Flowering Time
- Heights
- Stem and Fiber Quality
- Fiber Yield
- Grain Yields
- THC Compliance (USDA)



Yuma(KHS) 2022



Yuma(KHS) 2022



HanNE(KHS) CA 2021





K-State Dual Purpose Trials

**Biomass Varieties** 

**Textile-Fiber Varieties** 

**Grain/Dual Purpose** 

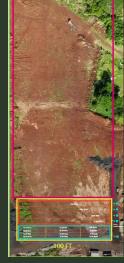
Fibers Seeds Types

### **OHV-KHS** | Seed to Market - Pilot Field

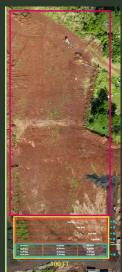




The Beginning 2023







~1.5 Acres





06/19/2024 **Planting** 



06/25/2024 **Emergence** 6 days



07/03/2024 14 days

Seeds: Yuma Fiber seeds (Kanda Hemp Seeds)

**Equipment: Heavy Duty Sickle Bar for harvesting** 

Cost-effective ZL-2 (KHS) for fiber decorticator

**End-Products:** Hempcrete, Biochar, Long Raw Fiber

<u>Local Market:</u> Construction, Biochar, Textile, Insulations

**Powered By** 

Friends of Waimanalo

### KHS Internal Cultivation Practices (Reference Only)



#### Regulation and Compliance:

- THC <0.3% | USDA Remediation <0.9%
- Early Sampling = >Compliance%
- 55-100 days | First sign of male flowers

#### Field Selection:

- Well-drained loamy soils
- pH 6.5-7.5 ideally
- Pre-plant herbicides Sonalan®

#### Planting Date:

- Soil temps 46°–50°F
- Planting depth: ½"- 1 ½" max

#### **Stand Establishment:**

- Calculate live seeds per pound,
- 350,000 1.2 million seeds/acre.
- ~Grain –Hurd—Fiber Spec

#### Harvest:

- <u>Fiber:</u> First sign of male flowers
- Hurd: weeks later for hurd
- Grain:
  - 10 20% moisture
  - o Golden Brown/crackings
  - Dry below 10% to store

#### Yield:

- <u>2 6 Tons</u> Kanda Fiber varieties
- Proven Subtropical USA and beyond.

# **Hemp Parts Market Price | Business Models**



### 2. Fiber Processing



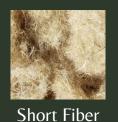


Hemp Bales \$200 - 350/T \$0.10 - \$0.18/lbs





\$0.40 - 0.70/lb



~\$0.70 - \$1/lbs



Long Fiber

\$1- \$2+/lbs

### 3. Grain Processing



Grain
Conventional
~\$0.50-0.70/lbs



Grain Organic ~\$1.00+/lbs

# **Begin with End-Product in Mind:**





### **Decortication Infrastructures**



#### Fixed- Large Scale Decorticator



KHS-ZL-X Fiber Line

**Strength:** High capacity, Low Unit Costs, Quality Fiber **Weakness:** High initial investment, Set Up, Labor, rigidity

**Input:** 1 Mt/hr dry stalks

Output: 500+ lbs fibers, 1000+lbs hurds/hr.

Output Yr: 1000-2000+ metric tons.

Area: 24,000 + square feet



KHS-ZL-2 Fiber Decorticator

NC. State Modified safety and installed on a trailer (~5x8ft)

**Strength:** Mobile! Low Costs. Great for Coops

Weakness: Low output, Lower Quality Fiber, Elements

**Input:** 200-500lbs/hr

**Output:** 40-100/lbs fibers | 120 - 300lbs hurd

Output Yr: 100-200+ metric tons.

**Area:** 40 square feet & a tow car

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## **Financials and Support**



#### Key Take Away:

- 1. Processing Greatly Increases Value
- 2. Operational Challenges
- 3. Market Challenges
- 4. Require Tailored Solutions

#### Disclaimer:

The following cost estimates are based on rough calculations using data from mainland states and may not fully represent all cost factors. Specific factors such as packaging costs, additional labor, material costs, and the actual operation of equipment are not entirely considered in these estimates. The purpose of this slide is to illustrate the potential value-add of processing and facilitate discussion on equipment needs and costs.

	Farming/Cultivation		Processing				
	Hemp Bales		Hen	Hemp Hurd/Short Fiber		Hemp Long Fiber	
Seeding rate( lb per Acre)		50.00		50.00		100.00	
Yield Per lb		8,000.00		4,800.00		1,200.00	
Selling \$/lb	\$	0.15	\$	0.40	\$	2.00	
Gross Revenue		\$1,200.00		\$2,720.00		\$2,832.00	
Seed Cost (with Shipping)	\$	225.00	\$	225.00	\$	450.00	
Planting Cost	\$	433.00	\$	433.00	\$	423.00	
Machinery Cost	\$	80.00	\$	160.26	\$	160.26	
Team Salary Cost	\$	60.00	\$	762.67	\$	645.33	
Transportation to buyer	\$	20.00	\$	100.00	\$	100.00	
Land Cost	\$	40.00	\$	40.00	\$	40.00	
Comliance Cost	\$	2.00	\$	2.00	\$	2.00	
TOTAL Cost ( per Acre)	\$	860.00	\$	1,722.92	\$	1,820.59	
One off Cost							
Compliance (Others)	\$	200.00	\$	200.00	\$	200.00	
Profit/Acre	\$	340.00	\$	997.08	\$	1,011.41	
# of Acres		100		100		100	
Total Profit		\$34,000.00		\$99,707.69		\$101,141.03	

# Hemp for Hawaii!



#### 1. Fiber Hemp is a Solution in Hawaii:

- Need for domestic production
- Requires extensive agronomy trials and market data for success

#### 2. Differences Between Hawaii and Mainland:

- Unique climate, transportation and geographic conditions
- Develop a domestic market tailored to Hawaii's specific needs and strengths

### 3. Strategic Approach - Start Small then Scale Up:

- Identify the market, strengths, and weaknesses of each island
- Focus on minimal initial costs to build momentum for the hemp industry in Hawaii





# Thank You!

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