



Empowering Hemp Growers with Premium Seeds and Solutions



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

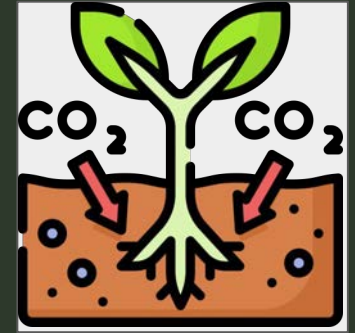
#1 Fiber Seeds Distributed by Volume 2024
#1 Selling Fiber Variety in the US | Yuma
Successful Grows in over 30 states
Partners to Underserved Communities



Why Fiber Hemp For a Sustainable Future?



Materials contribute
20% of global GHG emissions.
Mckinsey



~6 Tons/CO₂/Acre

Net-Zero Material Transition

Unique Properties &
Versatilities
Practical & Scalable

Fastest Carbon Sink
Environmental Benefits

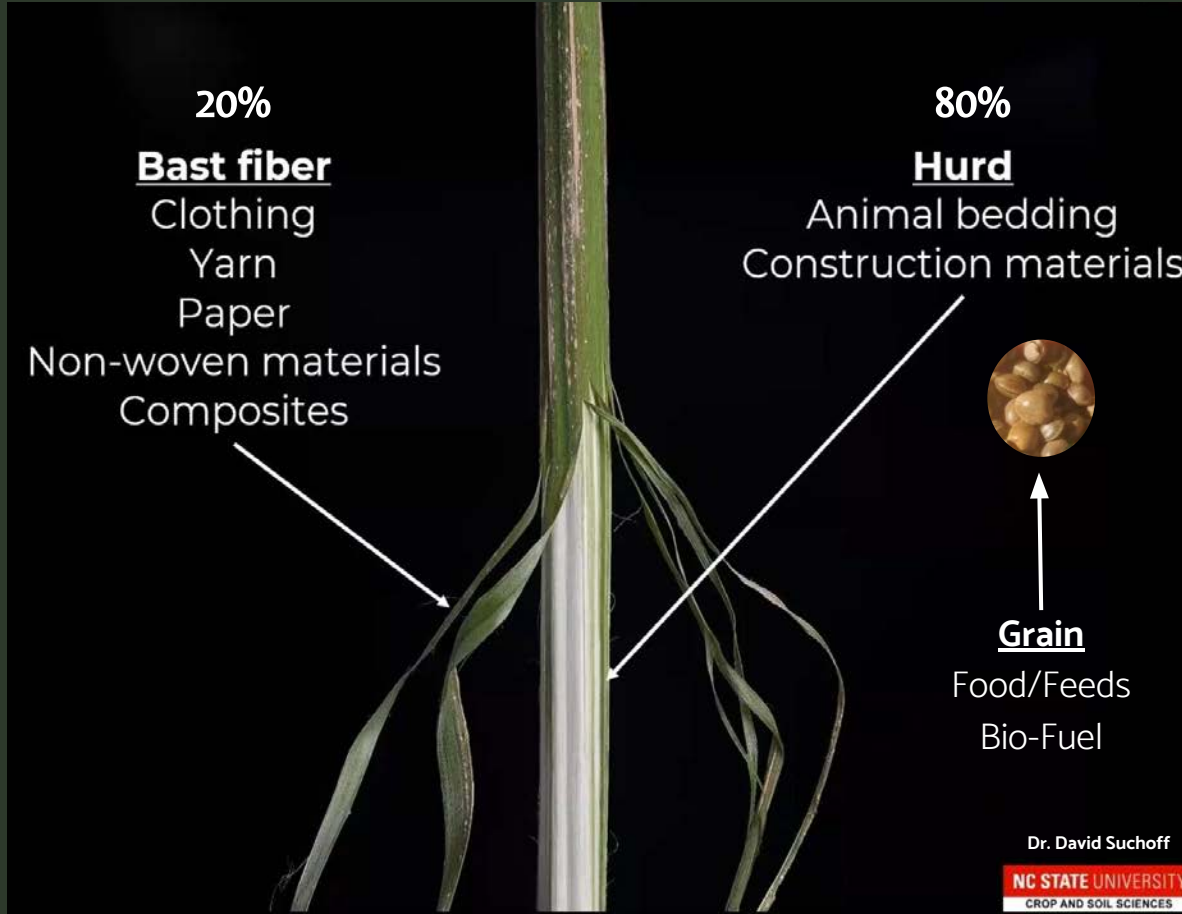
Fiber Hemp Parts Breakdown



Long Fibers
~10%



Short Fiber
(<5 inches)
~10%



Hurd
~80%



Grain

Massive Hemp End-Product Market Opportunities



Textile
\$1,027 Bn



BioComposites
\$36 Bn



Construction Materials
\$365 Bn



Food
\$5 Bn



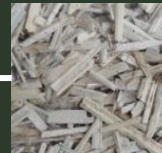
BioFuel
\$154 Bn



Long Fiber



Short Fiber



Hurd



Grain

Barriers to Fiber/Grain Hemp - US and Hawaii

1. Seeds Deficiencies



Unsuitable Varieties
High Seed Costs

2. Equipments Deficiencies



Specialized Cultivation/Harvest

3. Underdeveloped Markets:



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



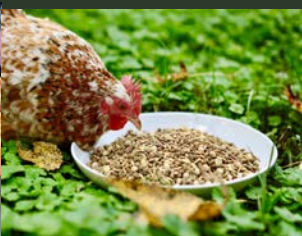
Affordable
Hemp Homes



BioFuels
BioMaterials



Tourism/Food



Animal Bedding/
Feeds

Confirm Raw Materials Spec



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



New Fiber Line (KHS) ET: 2025



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



Powered By
Friends of Waimanalo

Soil Reports
Amendments \$\$\$

BROOKSIDE LABORATORIES, INC.	
Soil Report	
Client	Job No.
OHV-KHS	2024-06-19
Location	OHV-KHS
Sample No.	1
Sample Date	06/19/2024
Sample Time	08:00 AM
Sample Method	Hand
Sample Depth	0-10 cm
Sample Description	Topsoil
Sample Weight	100 g
Sample Moisture	10.0%
Sample Temperature	25.0°C
Sample pH	6.5
Sample EC	0.5
Sample CEC	15.0
Sample Cation Exchange Capacity	15.0
Sample Anion Exchange Capacity	15.0
Sample Nitrogen	0.1
Sample Phosphorus	0.1
Sample Potassium	0.1
Sample Calcium	0.1
Sample Magnesium	0.1
Sample Sulfur	0.1
Sample Chloride	0.1
Sample Fluoride	0.1
Sample Bromide	0.1
Sample Iodide	0.1
Sample Barium	0.1
Sample Strontium	0.1
Sample Zinc	0.1
Sample Copper	0.1
Sample Manganese	0.1
Sample Nickel	0.1
Sample Lead	0.1
Sample Cadmium	0.1
Sample Chromium	0.1
Sample Cobalt	0.1
Sample Selenium	0.1
Sample Silver	0.1
Sample Tellurium	0.1
Sample Vanadium	0.1
Sample Molybdenum	0.1
Sample Boron	0.1
Sample Silicon	0.1
Sample Aluminum	0.1
Sample Iron	0.1
Sample Tin	0.1
Sample Antimony	0.1
Sample Arsenic	0.1
Sample Bismuth	0.1
Sample Cadmium	0.1
Sample Calcium	0.1
Sample Carbon	0.1
Sample Chlorine	0.1
Sample Cobalt	0.1
Sample Copper	0.1
Sample Fluorine	0.1
Sample Gallium	0.1
Sample Germanium	0.1
Sample Hydrogen	0.1
Sample Iodine	0.1
Sample Iron	0.1
Sample Lead	0.1
Sample Lithium	0.1
Sample Magnesium	0.1
Sample Manganese	0.1
Sample Mercury	0.1
Sample Molybdenum	0.1
Sample Nickel	0.1
Sample Nitrogen	0.1
Sample Oxygen	0.1
Sample Phosphorus	0.1
Sample Potassium	0.1
Sample Selenium	0.1
Sample Silver	0.1
Sample Silicon	0.1
Sample Sulfur	0.1
Sample Tellurium	0.1
Sample Vanadium	0.1
Sample Zinc	0.1
Sample Zirconium	0.1



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

Local Market: Construction, Biochar, Textile, Insulations

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:

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

Yield:

- 2 - 6 Tons Kanda Fiber varieties
- Proven Subtropical USA and beyond.

Hemp Parts Market Price | Business Models

1. Farming/Cultivation



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

Good Equipments
Unlocks Value\$ Add

2. Fiber Processing



Hurd

\$0.40 - 0.70/lb



Short Fiber

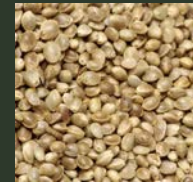
~\$0.70 - \$1/lbs



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:



Long Fibers



Specialized Fiber Decorticator



Specialized Fiber Harvester
Commercial Scale Available



Dense: 1 - 2 Million
Plant Population



Fiber-# | Yuma
Fine Fiber Varieties



Hurd | Short Fibers



Short Fiber decortication



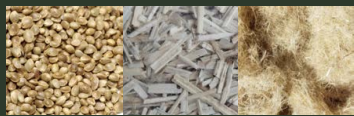
Conventional
Sickle Bar Mowers & Balers



Medium: 700K
Plant Population



HanNE | Yuma etc.
Biomass Five Varieties



Grain | Hurd | Short Fiber



Short Fiber decortication



Conventional | Specialized
Combine



Looser: 300-500K
Plant Population



New Grain (KHS)
Grain/Dual Varieties

Decortication Infrastructures

Fixed- Large Scale Decorticator

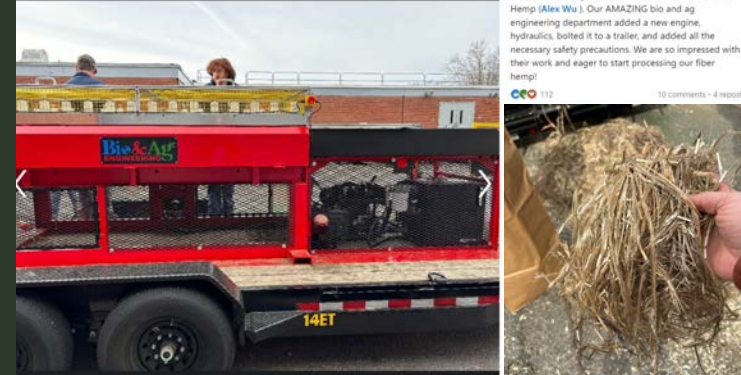


KHS-ZL-X Fiber Line

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

Mobile Decorticator



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

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	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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