

Cornell Cooperative Extension

New York State Hemp Industry

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Hemp Industry NY

- Regulated in NYS via NYS Department of Agriculture and Markets
 - Application Process
 - Growing CBD
 - Growing Fiber/Grain
 - Processing CBD (Closed)
 - Processing Fiber/Grain
- 480 Growers
- Over 20,000 Acres
- Processing
 - CBD: 72
 - Grain and Fiber: 44
 - Total: 116



Hemp Uses (Over 20,000)

Fiber/Textile

Fabrics

Handbags

Rope

Paper

Building Materials

Seed

Seed

Hemp Oil

Hemp Milk

Hemp Hearts

CBD

Lotions

Soap

Tinctures

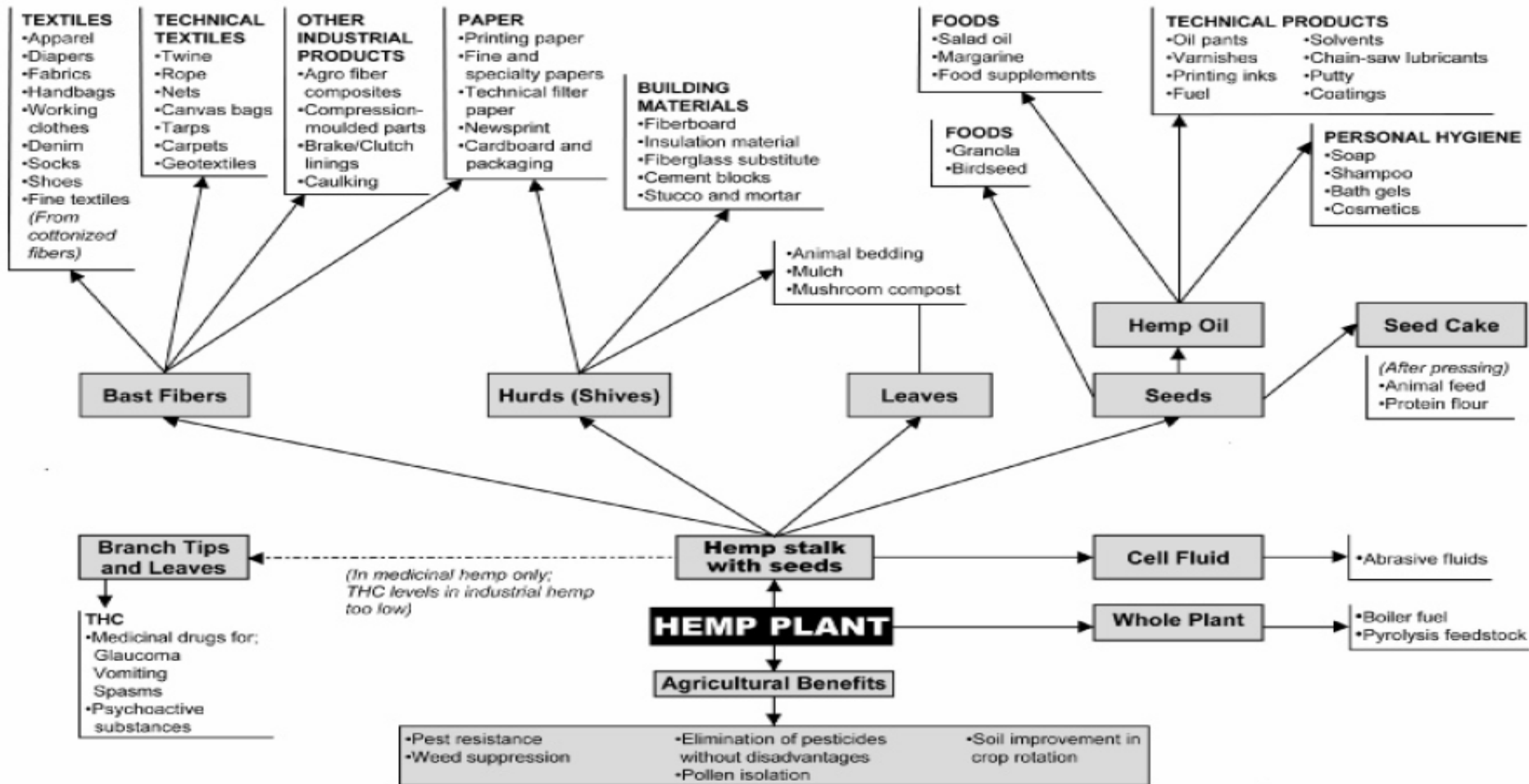
Not Allowed

CBD Food and
Drinks: NYS

Flower/Buds: NYS

Production
Smokeable: NYS

Livestock Feed:
Federal



NYS Products

- CBD: tinctures, lotions, bath bombs, chocolates, lotions
- Seed
- Tinctures
- Cooking Oil
- Soap
- Lotions
- Microgreens

Hemp Products

- Hemp Products vs. CBD Products
- Full Spectrum vs. Isolates

CBD Full Spectrum vs. Isolate

- THC
- THC-A
- THC-V
- CBN
- CBD
- CBD-A
- CBC
- CBC-A
- CBG
- CBG-A





Hemp Products FDA

- “Over the past several years, FDA has issued several warning letters to firms that market unapproved new drugs that allegedly contain cannabidiol (CBD). As part of these actions, FDA has tested the chemical content of cannabinoid compounds in some of the products, and many were found to not contain the levels of CBD they claimed to contain. It is important to note that these products are not approved by FDA for the diagnosis, cure, mitigation, treatment, or prevention of any disease. Consumers should beware purchasing and using any such products.”-FDA Website
- Products Disclaimer

Spring 2019: 30 Processors

Capacity

- 2,000-3,000 lbs every 6 months
- Unlimited
- 3 Tons Seed
- Over 10,000 Acres
- 3,000 acres
- Not Sure
- 27 tons (6 months processing)
- 240 lbs month

Material

- Wet or Dry

Plant Processing

- Whole Plants
- Leaves
- Flower
- Seed



Photo: Kelly McDowell

Spring 2019

Products

- Hemp Flavoring
- CBD
- Hemp Oil
- Beauty Oil
- Protein Fiber
- Hemp Seed (Food)
- Fiber
- Cold Press Juice
- Food
- Beverage

Future Plan

- Vodka
- CBD Products
- Culinary Oil: Medicine Food
- Livestock Food
- Pellets
- CBD Baked Goods
- Overseas Markets

NYS Processors Contracts

- Acreage, lb, etc.
- Transportation
- Equipment Harvesting
- Quality: CBD %, Dry vs Wet Material
- Dates (Planting and Harvesting)

- Contracts (Understand Commitments, Lawyer, Stick to Contract, etc.)



Photo: Kelly McDowell

Labor

- Fiber/Textiles
- Dual Purpose (Seed and Fiber/Textile)
- CBD
- Future: Tri-Purpose: Canada



Photo: Kelly McDowell

Fiber/Textiles

- Labor Hours per Acre: 1.7
- Field Preparation
- Planting
- Harvesting (Cutting, Field Retting, and Bundling)



Grain

- Labor Hours per Acre: 0.7
- Field Preparation
- Planting
- Harvesting



Dual Purpose (Fiber and Grain)

- Labor Hours per Acre: 2
- Field Preparation
- Planting
- Harvesting



CBD

- Labor Hours per Acre: 190
- Purchase Transplants (Seed Starting or Cloning)
 - Maintaining: Starters or Clones
- Field Preparation
- Transplanting
- Culling Males (Dioecious, Feminize, Monoecious Seed)
- Artisan CBD Growers (not included in above hours)
- Maintaining (Watering, Fertilizing, Future Pesticide, etc.)
- Harvesting via Hand



Photo: Kelly McDowell

Future Options

- Tri-Purpose: Fiber, Grain, and CBD Chaff
- Equipment



Hemp Market Prices Early Spring 2019

- Unpredictable Market Prices
- Internet Info
 - CBD: \$2,500 to \$40,000 per acre
 - Hemp Grain: \$250 to \$300 average acreage 1,000 lbs. acre
 - Hemp Fiber: \$260 per ton 2.5 to 3 tons per acre



Photo: Kelly McDowell

Budget Items	Hemp Fiber Production & Harvest	Hemp Seed (Grain) Production & Harvest	Hemp Fiber & Seed (Grain) Production & Harvest
		--- \$ per Acre ---	
Value of Production			
Fiber	635.20		198.40
Seed (Grain)		700.00	700.00
Total Value	635.20	700.00	898.40
Costs of Production			
Variable Inputs			
Fertilizers & Lime	76.66	76.66	76.66
Seeds & Plants	204.83	102.41	47.41
Sprays & Other Crop Inputs	18.51	65.30	41.49
Labor	38.05	15.49	46.84
Repair & Maintenance			
Tractors	3.65	18.95	20.90
Equipment	13.78	13.40	23.62
Fuel & Lube	16.94	17.18	28.37
Interest on Operating Capital	9.52	7.91	7.29
Variable Costs Total	381.94	317.30	292.58
Fixed Inputs			
Tractors	24.10	41.81	54.98
Equipment	31.91	23.31	42.53
Land Charge	101.88	101.88	101.88
Value of Operator & Family Management			
Fixed Costs Total	157.89	166.39	199.38
Total Costs	539.83	484.30	491.96
Returns			
Returns above Variable Costs	253.26	382.70	605.82

Fiber, Dual Purpose, and Seed

Expected Value

Hemp Fiber Production: \$0.08 per pound

Hemp Seed (grain) Production: \$0.70 per pound

Expected Yield

Hemp Fiber: 3.97 tons per acre

Dual purpose fiber and seed (grain): 1.24 tons per acre

Hemp Seed (grain) production: 1,000 pounds per acre

	Expected Return	Return Above Total Cost
Fiber:	\$635.20	\$95.37
Dual Purpose:	\$1,335.20	\$311.07
Seed:	\$700	\$215.70

Biomass Spot Pricing - March 2019					
Region	Midpoint		Low		High
Colorado (per % CBD Content)	\$	3.08	\$	2.75	\$ 3.40
Kentucky (per % CBD Content)	\$	3.75	\$	3.00	\$ 4.50
Oregon (per % CBD Content)	\$	3.93	\$	3.25	\$ 4.60

Example:

CO Midpoint: 10% CBD per lb. x \$3.08 = \$30.08 per lb.

Source: PanXchange, Inc.

Hemp Prices CBD

- National average \$4.00 % per lb 2018
- \$2.00% per lb
- Low \$1.35% per lb

- Research: 7% CBD Max
 - THC Delta-9
 - Total Potential THC (decarboxylation .877)



CBD Production

Input	Cost
	-- Dollars per Acre --
Variable Inputs	
Fertilizers & Lime	349.33
Seeds & Plants	4,530.80
Sprays & Other Crop Inputs	2,850.56
Labor	4,472.44
Repair & Maintenance	
Tractors	23.56
Equipment	6.24
Fuel & Lube	100.70
Interest on Operating Capital	308.34
Variable Costs Total	12,641.97
Fixed Inputs	
Tractors	168.78
Equipment	107.39
Land, Buildings and Improvements	191.67
Value of Operator & Family Management	
Fixed Costs Total	467.84
Total Costs	13,109.81

190 Labor Hours

1,800 plants per acre

1 pound CBD Flower per Plant

$\$2.00 \times 7\% \times 1,800 \text{ lbs} = \$25,200$

Return $\$12,090.19$

$\$1.00 \times 7\% \times 1,800 \text{ lbs} = \$12,600$

Return $-\$509.81$

Fall 2019

- 15 Processors Looking for Product
- CBD 8
- Non-CBD 5
- Both 2



“Pricing and Analysis”

“Hemp Spot Price Index”

H E M P BENCHMARKS®

U.S Wholesale Hemp Price Benchmarks

December 2019

U.S. Region Products	Units	Assessed Price	Low	High
CBD Biomass (0 - 25K pounds)	\$ / % CBD / pound	\$1.73	\$0.75	\$3.20
CBD Biomass (25K - 100K pounds)	\$ / % CBD / pound	\$1.47	\$0.85	\$2.50
CBD Biomass (100K - 1M pounds)	\$ / % CBD / pound	\$1.45	\$0.90	\$2.35
CBD Biomass (1M+ pounds)	\$ / % CBD / pound	\$1.17	\$0.75	\$1.65
CBG Biomass	\$ / % CBG / pound	\$20.29	\$13.00	\$25.00
CBD Flower (Bulk)	\$ / pound	\$221	\$75	\$450
Clones	\$ / each	\$3.53	\$2.50	\$4.00
Industrial Seeds	\$ / pound	\$4.38	\$2.90	\$8.00
CBD Seeds (Non-Feminized)	\$ / pound	\$1,967	\$550	\$4,300
CBD Seeds (Feminized)	\$ / seed	\$0.88	\$0.40	\$1.50
Crude Hemp Oil	\$ / kilogram	\$890	\$525	\$1,250
Refined Hemp Oil (Aggregate)	\$ / kilogram	\$3,051	\$1,630	\$5,200
Distillate - THC Free	\$ / kilogram	\$3,677	\$2,700	\$5,200
Distillate - Broad Spectrum	\$ / kilogram	\$3,073	\$2,100	\$4,200
Distillate - Full Spectrum	\$ / kilogram	\$2,445	\$1,630	\$3,500
CBD Isolate	\$ / kilogram	\$2,218	\$1,350	\$3,500

Hemp Benchmarks® is an independent Price Reporting Agency (PRA). Our goal is to bring price transparency to wholesale hemp markets in order to allow businesses to operate with confidence and efficiency.

We do not have physical or financial exposure to the commodities that we assess, and therefore do not profit from liquidity, volumes or price movement, avoiding the potential for any perception of conflicts of interest that could arise for marketplaces and exchanges.

Commodity market participants benefit from increased price transparency.

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Report Contents

Price Commentary

- Price erosion continues in the aftermath of the harvest. [Continued on page 2](#)

The 2019 Hemp Harvest: A Mixed Bag

- Available planting and harvest information varies widely state-to-state; accounts from the field suggest crop loss from numerous factors will dent what is certain to be a record harvest. [Continued on page 7](#)

Producers Attempt to Navigate an Uncertain Market Post-Harvest

- Buyers reportedly backing out of purchasing contracts, as some producers are attempting to store harvested crops in the hope of better market conditions in the future. [Continued on page 9](#)

Hemp Benchmarks & AlmaStone U.S. Hemp Extraction Survey Results

- Most respondents have throughput of less than 100,000 pounds of biomass monthly; responses and recent statements suggest price erosion has impacted extractors' tolling rates. [Continued on page 10](#)

Federal Regulatory Update

- USDA rules continue to be criticized, particularly required timing of THC testing; FDA emphasizes potential danger of CBD to consumers, but enforcement remains limited to warning letters to businesses. [Continued on page 12](#)

State Updates

- State agriculture officials collaborate with eye on improving hemp regulatory programs; Colorado approves new certified seed varieties; New York passes hemp and CBD regulations into law. [Continued on page 16](#)

www.hempbenchmarks.com
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Thank you!

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