

Industrial Hemp Research Pilot Program

Kentucky Department of Agriculture

October 11, 2018



Legal and Legislative Update



“Industrial Hemp” is Defined by Federal Law

- Section 7606 of the 2014 Farm Bill provides this definition:
 - “The term ‘industrial hemp’ means the plant *Cannabis sativa* L. and any part of such plant, whether growing or not, with a delta-9 tetrahydrocannabinol concentration of not more than 0.3 percent on a dry weight basis”
- Another key term:
 - “agricultural pilot program” means a pilot program to study the **growth, cultivation, or marketing** of industrial hemp



Commissioner Ryan Quarles's Strategy for Industrial Hemp



- “Our strategy is to use KDA’s research pilot program to encourage the industrial hemp industry to expand and prosper in Kentucky.”
- “Although it is not clear when Congress might act to remove industrial hemp from the list of controlled substances, my strategic objective is to position the Commonwealth’s growers and processors to ultimately prevail as national leaders in industrial hemp production.”

The Quarles Strategy is Working

- 2016: Comprehensive Redesign of the Program
 - *Acreage Planted: 2,300*



Hemp ≠ Marijuana (KRS 218A.010)

- (27) "Marijuana" means all parts of the plant *Cannabis* sp., whether growing or not; the seeds thereof; the resin extracted from any part of the plant; and every compound, manufacture, salt, derivative, mixture, or preparation of the plant, its seeds or resin or any compound, mixture, or preparation which contains any quantity of these substances. The term "marijuana" does not include:
- (a) Industrial hemp that is in the possession, custody, or control of a person who holds a license issued by the Department of Agriculture permitting that person to cultivate, handle, or process industrial hemp;
 - (b) Industrial hemp products that do not include any living plants, viable seeds, leaf materials, or floral materials;
 - (c) The substance cannabidiol, when transferred, dispensed, or administered pursuant to the written order of a physician practicing at a hospital or associated clinic affiliated with a Kentucky public university having a college or school of medicine;
 - (d) For persons participating in a clinical trial or in an expanded access program, a drug or substance approved for the use of those participants by the United States Food and Drug Administration;
 - (e) A cannabidiol product derived from industrial hemp, as defined in KRS 260.850; or
 - (f) A cannabidiol product approved as a prescription medication by the United States Food and Drug Administration;

The Quarles Strategy is Working

- 2016: Comprehensive Redesign of the Program
 - *Acreage Planted: 2,300*
- 2017: General Assembly overhauls state law to enable new growth
 - *Acreage Planted: 3,200*



KRS 260.858

(3) It is unlawful for a person who does not hold a license issued by the department, or who is not an agent of a licensee, to cultivate, handle, process, or market living industrial hemp plants or viable seeds, leaf materials, or floral materials derived from industrial hemp. Penalties for persons who cultivate, handle, process, or market living industrial hemp plants or viable seeds, leaf materials, or floral materials derived from industrial hemp without a license are the same as those penalties that are applicable to persons who violate KRS Chapter 218A, relating to marijuana.



The Regulatory Framework

Administrative Regulations – 302 KAR 50:020 to 070 (Adopted by KY General Assembly, January 2018)

- Increased transparency through written program rules and policies
- A single regulation for:
 - Growers 302 KAR 50:020
 - Processors 302 KAR 50:030
 - Universities 302 KAR 50:040
- Incorporates THC testing procedures developed by UK Regulatory Services
- Fees to meet the needs of an expanding program



The Quarles Strategy is Working

- 2016: Comprehensive Redesign of the Program
 - *Acreage Planted: 2,300*
- 2017: General Assembly overhauls state law to enable new growth
 - *Acreage Planted: 3,200*
- 2018: KDA implements nation's best regulatory framework
 - *Acreage Planted: 6,700*



Federal Changes Are Coming Soon

Senator McConnell and Commissioner Quarles Announce Hemp Legislation



Download photos [HERE](#).

FRANKFORT, KY – U.S. Senate Majority Leader Mitch McConnell (R-KY) and Kentucky Commissioner of Agriculture Ryan Quarles (R-KY) announced today the impending introduction of legislation in the United States Senate to support Kentucky's hemp industry. The *Hemp Farming Act of 2018* will legalize hemp as an agricultural commodity and remove it from the list of controlled substances.



Cooperative Federalism

- Removes hemp from federal CSA list
 - Crop insurance eligibility
 - Will pesticide manufacturers update their labels?
- Offers two options for regulating hemp:
 - “State Plan” to be led by State Depts of Ag.
 - “Federal Plan” to be led by USDA



Cooperative Federalism

- **Minimum requirements for a State Plan:**
 1. GPS growing site registration
 2. THC testing
 3. Disposal program for noncompliant crops
- **Negligent Violation → Corrective Action Plan**
- **Intentional Violation → Mandatory Report to:**
 - US DOJ & DEA
 - Kentucky State Police



Industrial Hemp Research Pilot Program:

How It Works

**Doris Hamilton
Hemp Program Manager**



Today's Presentation Topics

- Legal and Legislative update
- Basics of Hemp Crop Production
- Hemp Program Operation
- Application Process
- Maps and GPS Coordinates
- Land Use Restrictions
- Brief Program History



Hemp – 3 Different Crops

Fiber



Grain



CBD



Three Main Harvestable Components of Hemp



Grain or Seeds.
For human food (hemp hearts, oil, and protein powder), or seeds for planting hemp.



Floral Material.
For extraction of plant resin (which includes CBD and other cannabinoids) for health and wellness products.



Fiber from stalks.
Bast (bark – long, outer fibers), and Hurd (core – inner woody material).





Grain Crop

CAUTION

Predicting ideal harvest window will prove difficult for first time growers. Must be harvested in very short window due to seed shatter issues.



Grain Yields



- Seed/Grain Yield = Average 800-1,000 lbs. per acre, KDA max.= 1,600+
- \$0.65- \$0.75 per pound
- Returns per acre, max. \$1,200
- Hemp Grain is high in oil and protein, consumer demand for health food



Fiber Production



- Very dense plant population (twice as dense as grain).
- Desire tall plants with small stalk, and less leafy material.
- Harvested using typical hay equipment: mow, field retting 2-3 weeks, then roll baling.
- Some areas of the world harvest by chopping, not sure yet, which method will be most used here.



Fiber Crop Mowed



Fiber Crop Chopped



Fiber Yields

- Yields 1-5.5 tons per acre of dry matter (whole dry stems).
- Fiber price \$70-\$135 / ton for whole stems.
- Fiber crop vs dual purpose.
- Return per acre up to \$700.
- Stems = 15-20% Bast, 70+% Hurd, 5-10% Waste.
- Fiber uses -polymer composites to horse bedding.



Cannabinoid/CBD Production

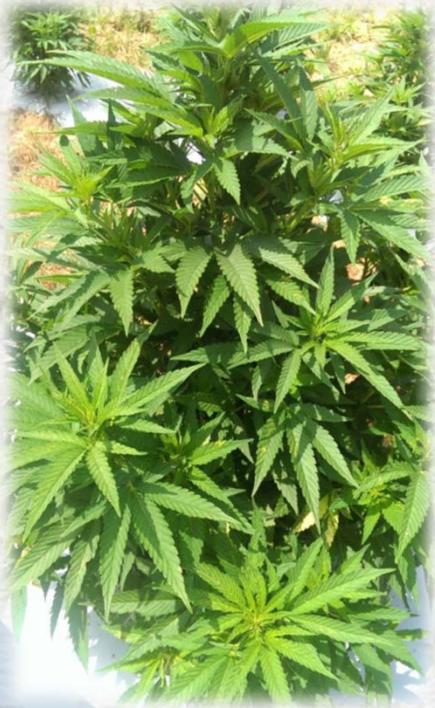


Cannabinoid/CBD Production

Two different varieties
and
Two different
production methods



Cannabinoid/CBD Production



- Majority of growers - Only female plants. (Seeing movement to direct seeded field crop and male/female crops.)
- Desire bushy plants with large number of flowers.
- Current Production models tobacco or vegetable.
- CBD Levels are highest in the floral materials.
- Both field & greenhouse production.



Cannabinoid/CBD Yields

- Maximum production for one plant = approx. one pound dried floral material for extraction.
- The very first year of the program KDA received reports of prices as high as \$1,000 / lb for dried material, **HOWEVER** prices today continue to decline **RAPIDLY**.
- Emerging market; more product on market will see reductions in price to between \$5-\$10/lb.
- Extract generated per lb of dried material varies widely.
- Transition to mechanized harvest will change things.



30 days post-planting

**Biggest
Challenge -
Weeds**

60 days post-planting, SAME field



I want to grow hemp. Where do I start?

Logical Steps to Enter the Industry

- Determine what type of hemp you want to grow; what fits your farm operation: Grain, Fiber, CBD
- Apply for and obtain a hemp Grower License from Kentucky Department of Agriculture
- Find a buyer/processor for your intended harvest. As a starting point, the 2018 Processor/Handler List is found on the KDA website.
- Locate and obtain legal industrial hemp seeds or transplants (processor will typically dictate what strain you plant)
- Research proper crop production techniques before planting the crop



Program Operation

- **Only legal hemp production in Kentucky is within the Industrial Hemp Research Pilot Program**
- **Annual Application Period**
- **Annual Background Check**
- **Evaluation and Approval**
- **3 Types of Licenses**



Program Operation

1) Processor/Handler License

- **NO live plants**
- Process harvested crop into products
- Possess, handle, store, market Hemp
- Brokers, labs, seed cleaners

2) Grower License

- Live plants
- Fields
- Greenhouses
- Storage
- Dry, Chop, Grind
- Market Crop



Program Operation

3) Affiliated universities and colleges

- Live plants
- Fields
- Greenhouses
- Labs
- Possess, Handle, Store hemp
- Any necessary research procedures



Program Operation - Timeline

- Grower Applications – Oct. 1 - Nov. 30
- Evaluations Complete – Jan. 15
- Mandatory Orientation – late Feb.
- Licenses Issued in March 2019
- Processor/Handler Applications Oct.-May
- All Program Regulations, Forms, etc. found on our website: www.kyagr.com/hemp



Program Operation



KENTUCKY INDUSTRIAL HEMP RESEARCH PILOT PROGRAM

Welcome to the Kentucky Department of Agriculture (KDA) Industrial Hemp Research Pilot Program website.

APPLICATIONS ARE NOW AVAILABLE for the 2019 Industrial Hemp Research Pilot Program. You can access the **Grower Application Packet**, the **Processor/Handler Application Packet**, and the **University/College Affiliation Application Packet** on the **Program Page** titled "Applications for the Hemp Program" in the right side bar (or scroll further down on mobile devices) or through the green link in the description below. Complete instructions and guidelines for applicants are contained in the application packets. **Grower applications are due November 30, 2018 at 4:30 PM Eastern Time.**

The Kentucky Department of Agriculture will hold our first-ever Industrial Hemp Pilot Program -

Office Of Agricultural Marketing

- Direct Farm Marketing
- Education & Outreach
- Grants
- Kentucky Proud
- Livestock
- Plant**
 - Forage Program
 - GAP
 - Ginseng
 - Hemp**
 - Horticulture
 - Organic
- Promotion & Development
- Shows and Fairs

Program Pages

Program Operation

Program Pages

- Industrial Hemp Research Pilot Program Overview
- Hemp and the Law
- Applications for the Hemp Program
- License Holders - Forms and Deadlines
- Restrictions on Sale or Transfer
- Picture Gallery

- Handout on the KDA Hemp Program Table



Application Process

- Download the application
- Obtain a KSP Background Check
 - Mailed requests are delayed, walk-ins are processed while you wait. Please submit **WITH** your application
- Complete **EVERY** question and check every affirmation on the application
- Include **ALL** attachments



Application Process

- Requested Locations are in 3 Tables
 - A) Field Locations
 - B) Greenhouse/Indoor Growing
 - C) Storage Locations
- Need GPS coordinates for each location, in Degrees Decimal Minutes
- MUST attach maps of each address



Application Process - MAPS

- GPS Coordinates - Google Earth Pro is the preferred method to obtain GPS coordinates for your hemp locations
- Maps - Generate maps for your applications and Site Modification Requests using Google Earth Pro
- Tutorial found on our website on the Applications page



Application Process - MAPS

- If Google Earth is not convenient
- Get a color aerial map (PVA, FSA, friend)
- Handwrite necessary information
 - Name
 - Address of the farm
 - Dot for each field, greenhouse, building where GPS coordinates were taken
 - Write the Location ID (your name for each location)
 - Outline the boundaries of each field



Application Process

Attachments

- Application Fee (\$100 check, KY State Treasurer)
- Copy of Driver's License for applicant
- KSP Background Check
- Maps for EACH Address
- Signing Authority for Business Entities form, only if applying for a license for a business entity



302 KAR 50.020, Section 5

Land Use Restrictions

Section 5. Land use restrictions for licensed growers.



- (1) A licensed grower shall not plant or grow any cannabis that is not hemp.
- (2) A licensed grower shall not plant or grow hemp or other cannabis on any site not listed in the Grower Licensing Agreement.



302 KAR 50.020, Section 5

Land Use Restrictions

Section 5. Land use restrictions for licensed growers (continued)

- (3) A licensed grower shall not grow hemp or other cannabis in or adjacent to any structure that is used for residential purposes.
- (4) A licensed grower shall not handle or store leaf or floral material from hemp or other cannabis in or adjacent to any structure that is used for residential purposes.



302 KAR 50.020, Section 5

Land Use Restrictions

Section 5. Land use restrictions for licensed growers. (continued)

- (5) Hemp shall be physically segregated from other crops unless prior approval is obtained in writing from the department.
- (6) A licensed grower shall not plant hemp or other cannabis plants in an outdoor growing location of less than one-quarter acre and 1,000 plants unless prior approval is received in writing from the department.
- (7) A licensed grower shall not grow hemp or other cannabis in any outdoor field or site that is located within 1,000 feet of a school or a public recreational area.



302 KAR 50.020, Section 5

Land Use Restrictions

Section 5. Land use restrictions for licensed growers. (continued)

- (8) An applicant or licensed grower shall not include any property on his or her application or Site Modification Request, incorporated by reference in 302 KAR 50:080, to grow or cultivate hemp that is not owned or completely controlled by the applicant or licensed grower.
- (9) A licensed grower shall not grow, handle, or store hemp or other cannabis on property owned by, leased from, or previously submitted in a license application by any person who is ineligible or was terminated, or denied admission to the program for one (1) or both of the following reasons:
- (a) Failure to obtain an acceptable criminal background check; or
 - (b) Failure to comply with an order from a representative of the department.



302 KAR 50.020, Section 5

Land Use Restrictions

Section 7. Land use restrictions for licensed growers. (continued)

(10) Licensed growers with plots of one (1) acre or less are required to post signage at the plot location. The signage shall include the following information:

- (a) The Statement, “Kentucky Department of Agriculture Industrial Hemp Research Pilot Program”;
- (b) License holder’s Name;
- (c) License holder’s license number; and
- (d) The department’s telephone number.

Kentucky Department of Agriculture



Industrial Hemp

Research Pilot Program

(502) 782-4113

License Holder: _____

Grower License #: _____

Location ID: _____



Program Operation – Grower Application Evaluation Criteria

- **Complete Application with all components and attachments**
- **Farming Experience: IRS Schedule F, Farm Serial Number, 1 year full-time farm work, or B.S. in agriculture. – only need one!**
- **Primary Residence in KY**
- **All growing, handling and storage sites in KY**



Program Operation – Grower Application Evaluation Criteria

- **Must live at primary residence in KY May 1 to Sept. 30**
- **Clear background check past 10 years**
- **Research Plan compliant with law**
- **Seed/Propagule acquisition plan**
- **Marketing plan compliant with law**
- **Demonstrated willingness to comply with law enforcement and KDA rules and instructions**



Program Operation – Grower Application Evaluation Criteria

- Not delinquent on any reports, payments or unpaid fines or penalties to KDA
- Made no false statements to KDA or law enforcement
- Full list of evaluation criteria found in 302 KAR 50:020 – READ the regulations!
- Every Application Meeting the criteria set forth in the regulations will be approved



Program Operation - Fees

- \$100 – Application Fee
- \$400 – Grower Participation Fee PER Address
- \$750 – Site Modification Surcharge PER field or greenhouse
- Processor Participation Fees:
 - \$3,000 Floral Material
 - \$500 Grain
 - \$500 Fiber
 - \$500 Handler



Program Operation

- Cooperation with law enforcement is critical.
- THC Analysis: Delta-9 THC measurement of field samples
- Every field and greenhouse is inspected and sampled



Why test THC?



Only THC analysis can separate hemp from illegal cannabis.



Regulation would be easy if hemp all looked like this.



Processor/Handler Applications

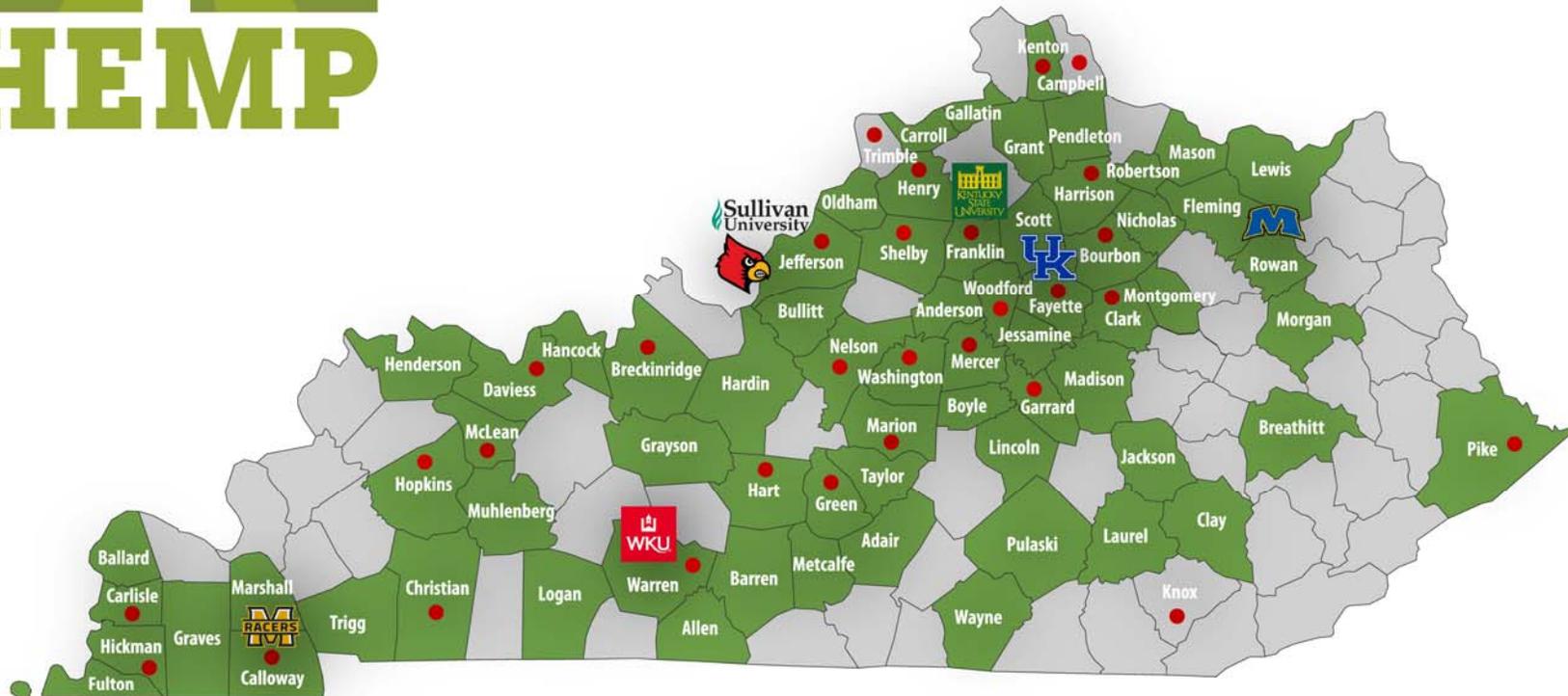
- Processors - entities using harvested hemp materials to develop finished products
 - CBD Extraction
 - Pressing, dehulling, roasting Hemp Seed
 - Processing stalks into fiber
- Handlers - entities possessing or marketing hemp seed, leaf, or floral material
 - Analytical Labs
 - Seed Cleaners
 - Drying and Grinding (for others)
 - Brokering in KY





2018 Kentucky Industrial Hemp Research Pilot Program

- Processors
- Growers



WWW.KYAGR.COM/HEMP

Kentucky Program Highlights

KDA Industrial Hemp Research Pilot Program

Annual Overview

Production Year	# University Projects	Approved Processors	Approved Growers	KY Counties with Hemp	Approved Acres	Planted Acres	Harvested Acres	% Grain or Seeds	% Fiber	% CBD	% Grain & CBD	% Grain & Fiber
2014	7	9	20	14	-	33	-	47%	32%	21%		
2015	8	29	99	41	1,742	922	500	47%	6%	47%		
2016	17	45	137	60	4,600	2,300	2,000	34%	6%	60%		
2017	17	49	204	71	12,800	3,200	2,300	36%	5%	27%	32%	
2018 (Sept)	14	72	210	73	16,100	6,700	TBD	18%	4%	61.5%	14%	2.5%



Kentucky Program Highlights

- **2017 Processor Production Reports**
 - **\$7.5 Million Paid to Kentucky Growers**
 - **\$25.6 Million Capital Investments made**
 - **81 Full-time Jobs Created**
 - **\$16.7 Million Gross Product Sales**



Production Report Data*

<u>2017</u>	<u>Grain</u>	<u>Fiber</u>	<u>Floral</u>
Growers	20	14	112
Acres Planted	1,227	159	1,883
Acres Harvested	826	120	1,371
Avg. Yield lb/acre**	518	2,556	1,024
Avg. Price per lb	\$1.70	\$0.34	\$7.20

**Preliminary; analysis of 2017 production report data is not complete.*

***Average Yield was calculated only from plots with reported yields above zero. (Does not include dual purpose Grain & Floral)*





2014-18 University Affiliations



Contact KDA

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