Industrial Hemp Research Pilot Program

Doris Hamilton
Kentucky Department of Agriculture

October 1, 2018
Legal Update - Federal

Old News......

2014 Farm Bill, Section 7606: LEGITIMACY OF INDUSTRIAL HEMP RESEARCH. (now 7 U.S.C. § 5940)

• Defines Industrial Hemp: *Cannabis Sativa L.* not more than 0.3% THC

• Allows universities and departments of agriculture to conduct research under Agricultural Pilot Programs
Legal Update - Federal

Old News...“Statement of Principles”

- Tries to redefine “industrial hemp” different from Congress
  - Expands THC to include “all isomers, acids, salts and isomers of THC”
- Suggests that only grain and fiber are “industrial hemp”
- Tries to limit the movement of hemp seeds and plants across state lines
  - Ignores Congressional action expressly prohibiting using funds to prevent interstate movements (Consolidated Appropriations Act of 2016)
- After 2 letters from Commissioner Quarles – still no response!
Legal Update - Federal

NEW - Hemp Section in Senate Version of 2018 Farm Bill, may pass in November

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.
Legal Update - Kentucky

KRS 260.850 to 260.869  (became law, May 2017)

• No person shall cultivate, handle, process, or market industrial hemp in the Commonwealth unless the person holds a hemp program license from KDA.
Legal Update - Kentucky

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

- READ THESE REGULATIONS IF YOU INTEND TO APPLY FOR A LICENSE. They are all available on the KDA website.

- 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
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
KENTUCKY INDUSTRIAL HEMP RESEARCH PILOT PROGRAM
Welcome to the Kentucky Department of Agriculture (KDA) Industrial Hemp Research Pilot Program website.

At the start of 2018, KDA launched a new website. All information on the industrial hemp program was formerly located on one page. Today you will find expanded information on several pages, as listed in the right sidebar (mobile users scroll down) under the heading “Program Pages”.

- Industrial Hemp Research Pilot Program Overview. Provides a general overview of industrial hemp and the Kentucky research program.

- Hemp and the Law. Dive into the heart of hemp policy and regulation. Check in regularly for updates on laws and regulations in Kentucky and at the federal level.

- Applications. Interested in joining the program? Visit this page for the Grower and Processor/Handler License Applications, as well as University Affiliation Application forms.

- License Holders. License Holders and Affiliated Universities in the program have constant access to program forms and a convenient list of deadlines.

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
- Industrial Hemp Research Pilot Program Overview
- Hemp and the Law
- Applications for the Hemp Program
- License Holders - Forms and Milestones
- Restrictions on Sale or Transfer
- Picture Gallery
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.
• Primary Residence in KY
• All growing, handling and storage sites in KY
• Must live at primary residence in KY May 1 to Sept. 30
• Clear background check past 10 years
Program Operation – Grower Application Evaluation Criteria

• 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
• 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
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.
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.

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

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

• Similar to small grain production
• Desire short plants for ease of harvest
• Planted with a grain drill
• Harvested using combine
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 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.
Biggest Challenge - Weeds

30 days post-planting

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 KDA
• 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
2018 Kentucky Industrial Hemp Research Pilot Program

WWW.KYAGR.COM/HEMP
# Kentucky Program Highlights

## KDA Industrial Hemp Research Pilot Program

### Annual Overview

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

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

*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

University of Kentucky
Western Kentucky University
Sullivan University
Murray State University
Morehead State University
University of Pikeville
Eastern Kentucky University
University of Louisville
“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.”
Contact KDA
Industrial Hemp Program Staff

Doris Hamilton, Hemp Program Manager
Doris.Hamilton@ky.gov

Hemp Program Specialists
Melissa Bourne,
MelissaK.Bourne@ky.gov
Kim Sullivan,
Kim.Sullivan@ky.gov
Edmond Thompson,
Edmond.Thompson@ky.gov

Hemp@ky.gov
www.kyagr.com/hemp