Hemp:

“the plant species *Cannabis sativa* L. and any part of that plant, including the seeds thereof and all derivatives, extracts, cannabinoids, isomers, acids, salts, and salts of isomers, whether growing or not, with a delta-9 tetrahydrocannabinol concentration of not more than 0.3 percent on a dry weight basis.”

USDA-AMS 7 CFR Part 990 Final Rule
Establishment of a Domestic Hemp Production Program
• 1645: Hemp introduced to U.S. — New England to VA and PA
• 1775: Hemp brought to KY from VA
• 1840-1860: Hemp industry flourished
• Late 1800’s through 1912: Hemp industry declines
• 1915: 8,400 acres produced in U.S.
• 1917: WWI, 41,200 acres in U.S.
• 1933: 140 acres of hemp in U.S.
• 1943: WWII, 186,700 harvested acres
• 1953: Not enough hemp produced in U.S. to
• 1958: Small hemp fiber industry existed in WI until this time
• 1999-2003: Experimental 0.25-acre plot in Hawaii
• Agricultural Act of 2014
• Agricultural Improvement Act of 2018
• 2019: IFR est. Domestic Hemp Production Program
• 2020: Final Rule, Domestic Hemp Prod. Program
Fig 1.—Field of hemp in Kentucky at harvest time.
CBD (and other cannabinoids, terpenes) contained in *Cannabis* resin
Initial Considerations

- What are the current laws and rules for hemp production and marketing?
- What are your goals for the crop?
- How much will it cost to produce, harvest, and cure?
- What skills, equipment, supplies, labor, buildings, land, and time will be needed to achieve your goals? Where will you get what is needed?
- If you want to sell, what is your marketing plan? If you have a contract, how good is it (binding, terms, payment, timeframe?)
- Rely on facts only, not emotion, and verify your sources of information, fact check.
Budgets

- Good hemp budgets are available, but profitability is dependent on surety of market
- University-developed budgets are best tool – non-biased; verify other sources
Information from a 2020 hemp presentation

- Industrial hemp market projected to grow from $4.6 billion in 2019 to $26.6 billion in 2025*
  - Snacks and cereals estimated as largest market share in 2019
  - Hemp fiber segment projected as largest market share during forecasted period
  - Europe projected as largest market share during forecasted period
    Source: Vote Hemp

- Consumers will demand information on plant origin, farming practices, product composition, and sustainability
- Baby Boomer consumption escalates, hemp as mental aid (today, one in five Americans)
- Other cannabinoids in future – CBN, CBG
  Source: Forbes

- 28% of U.S. adults consumed CBD
- 17% of U.S. consumers purchased a hemp product in 2018-2019
  Source: Hemp Business Journal, New Frontier Data
Current situation

• Many are optimistic about cannabis in 2021, but less committal about hemp specifically
  – How will legalization of medical and recreational cannabis affect the hemp industry?
• There are predictions for more market stability for CBD in 2021, a relatively small but stable hemp grain market, and a speculative but optimistic outlook on hemp fiber
  – Considering history, sources, and agendas, I don’t know what 2021 holds for hemp
  – This is still a new, developing, and rapidly changing industry
  – Hemp derivatives have shifted some focus to other products – legality, DEA?
  – Attrition in the industry, some commitments not honored, short-term vs. long-term players
• There is – and will remain – a market for hemp products, and therefore, a long-term viable hemp industry
  – It is unknown at this point who the long-term players will be, the size of the industry, and what the market looks like
• Control what you can, be careful, smart, and measured, and do your homework
Agronomics

- Limited research-verified information – hemp is a new crop again, takes time and $$$
- Relatively easy to grow from transplanted clones or seedlings if agronomic practices are sound
  - Proven source of hemp seed, clones, or seedlings is absolutely critical – don’t count on variety name only
  - Fertile, well-drained, clean site – avoid red, rocky ridges and wet-natured, poorly-drained sites
  - pH 6-7, model tobacco or tomato production model, tobacco fertility works – studies are being conducted
  - For hemp for extracts, 500-3000+ plants per acre (transplant model) – varies by operation
  - Transplant May-July, ability to irrigate is recommended
- Weeds, insect, diseases, males/herm - Start and stay ahead, scout every day
Agronomics - continued

- Hand-harvest for most – whole plant harvest like dark and burley tobacco
- Hang plants in tobacco barns, curing structures, sheds or place in greenhouses, warehouses, or other areas to dry crop
- Spacing plants out to dry, ventilation, and fans are critical to mitigate late-season and post-harvest molds
- Area to dry plants/bucked material
- Dryers, green chop? (have backup)
- Proper storage to preserve and prevent post-harvest molds
- Late-season and post-harvest molds are a tremendous problem
Many Questions
Many Questions
Past, present, future

- Hemp as a crop in the U.S. is new again
  - Perception, emotion major driving forces; science, economics gaining
  - Absent in U.S. for nearly 60 years

- Look to history as we approach future – consider all agriculture
  - Increases in scale, efficiency, and production
  - Decreases in prices
  - Consolidation, integration, and globalization
  - Regions in U.S. better suited to hemp production will become evident

- Hemp is not emus, prawns, switchgrass…
  - Cannabis here to stay: too much money at stake, public and political support
  - Immediate needs and strategic needs: crop will evolve, production practices will change
  - Hemp has been and will continue to develop into a viable crop for some
    - Short-term: A relative few will do well – those with good, sound contracts or markets
    - Long-term: Follow history, market (USDA, FDA, DEA) will decide, stabilize, another U.S. crop
Hemp for extracts:

- Diverse industry: experience, background, scale, finances, agenda
- Many who are hopeful to dangerously optimistic – can skew judgment
- Many are vulnerable to unverified, confidently spread information that sounds good – prices, market, efficacy
- Involvement in the hemp-for-extracts industry is expensive and risky – especially now: market, USDA hemp Final Rule, FDA
- Concerning hemp, fact-check everything, be absolutely objective – everyone seems to know everything or nothing, go with proven sources in region
- Producing a good crop is not the biggest challenge for most; the biggest challenge is selling the crop for a good price and receiving payment in a timely manner
Thank you