A Brief History of Hemp

Hemp originated in Central Asia. Hemp cultivation for fibre was recorded in China as early as 2800 bc and was practiced in the Mediterranean countries of Europe early in the Christian era, spreading throughout the rest of Europe during the Middle Ages. It was planted in Chile in the 1500s and a century later in North America.

Hemp artifacts have been found in ancient culture across the globe, particularly in Africa. It was the development of hemp sails (canvas) during the Islamic Golden Age that allowed colonial expansion to take place, as cotton or linen sails quickly rotted on the open seas.

The value of hemp was evident when the British arrived in the Americas. It was required for farmers to grow hemp, a tradition the early United States maintained. Washington, Jefferson and several other founding fathers grew hemp.

Hemp fibers and oils were in use in the United States until the late 1800s, when newspaper mogul William Randolph Hearst elected to use has vast newspaper network to demonize the plant. This was in part because he was a renown racist, and people of color (Africans and Mexicans) in the states were typically proponents of using marijuana. Indeed, using this Spanish word for the plant was part of the demonization process.

Though there are clear distinctions between hemp and its mind-altering cousin marijuana, Hearst intentionally let the distinctions become clouded. It is said that he preferred printing his yellow press on paper from the forests he owned, though hemp was a cheaper alternative.

The Marijuana Tax Act in 1937 further eroded hemp use, and Richard Nixon maintained that tradition with the Controlled Substance Act in 1970.

Curiously, all that was thrown out the window during World War II when the US government faced a great need for hemp ropes and oils. “Hemp for Victory” was a popular film produced by the government.

In 2018 the United States congress passed The Hemp Farming Act making hemp growing, production and processing again legal in the United States.

Now that hemp is able to be grown and processed legally in the U.S., this seems like a great opportunity for an area like ours to leverage the plant.

Types of Cannabis plants

There are two main types of cannabis species, cannabis sativa and cannabis indica. Indica is more commonly used as marijuana, while sativa can be grown with little to no THC, making it ideal for a host of products.
Uses and Products

The plethora of uses for hemp are indicated in this graphic…

New uses and composites like hempcrete are emerging as well!
Hemp Production

Hemp is easy to grow, does not require pesticides and needs only minimal fertilizer to be successful. The rolling hills of Southern Ohio and much of Kentucky provides a terrific environment for growing the plant. Various strains can be used that focus on fiber, oils, bulk content etc.

Harvesting is a simple process as well, typically the plant is cut just above ground level and dried in barns.

Hemp can be processed in a number of manners, depending on the intended use. ‘Decortication’ is the process for separating the fibers (bast) from the ‘hurd’, the softer, less fibrous material. There are a number of machines and systems to accomplish this process, varying in scale for a wide variety of potential uses.

The bast can be used for textiles while the hurd can be used in a slurry to produce paper, building materials and many other products.

Jobs

All of these products and potential uses require labor and a skill set. The skill requirements are not formidable, and the labor requirements are reasonable. Young people especially would be well-suited to bring new businesses online for growing and processing hemp.

As employment is a huge issue in many of our urban neighborhoods, hemp related businesses would seem a natural fit, especially since hemp processing is so scalable. One can imagine an old warehouse or storefront finding new life as a hemp production facility.

Indeed, it is estimated that industrial hemp production will increase over 20% between 2020 and 2030. With plastic-replacing composites, we could see even greater growth.

The future looks promising!
Environmental Impact

Hemp’s great versatility is matched by its environmental impact, which is notably benign. Pesticides are not required to maintain healthy plants, in stark contrast to cotton, which requires significant pesticide and fertilizer use as shown in this chart.

Cloth, paper and plastics could all be produced using hemp which would be a great advantage over current methods for producing such products.

Further, because hemp inherently breaks down heavy metals and radioactive materials, it’s been planted extensively for hundreds of miles around the Chernobyl nuclear power plant. Hemp is a natural catalyst that helps mitigate radiation and heavy metals.

Even the human body is acclimated toward hemp. There are more cannabinoid receptors in our bodies than receptors for any other plant or food. This helps to explain why CBD oils have been so popularized in recent years.

The Hemp/Casein Connection

Casein is a milk protein product commonly used in cheese or as a body-building protein. Prior to oil-based plastics, casein was used to make buttons, handles, tableware and other products. Traditionally it was processed with formaldehyde, a harsh preservative. Indeed, the word ‘plastic’ was first associated with casein-based products.

The problem with many casein plastics is they’re hardly more biodegradable that oil-based plastics, which is where hemp comes in. Hemp makes the casein stronger and potentially more porous, helping with decay. Tannic acid, a common acid found in acorns, can be used to replace formaldehyde, making this process more environmentally friendly.

By mixing hemp hurd and casein, and processing the mixture with tannic acid, we find an incredible array of opportunities to replace plastic. The tannic acid, via its purity and volume, can make hemp/casein plastics that are as porous as desired. The more porous, the more quickly it biodegrades. There is also work being done to produce bioplastics from CBD oil. Polymeric CBD has tremendous potential to replace oil-based single use plastics.
Strategies to Implement

Like any other initiative, this transition will take time, effort and focus. From growing and processing the hemp to selling products made from hemp, new infrastructure is needed. No clear ROI studies exist as this is a new way forward for western culture. Still, it seems likely that small investments can have huge results in furthering the hemp businesses in our area. Here are some thoughts on potential strategies…

- research into the best methodologies for growing and harvesting hemp
- investing in educating our young people so that they are empowered to join or start hemp related businesses
- research into historical and modern methodologies that leverage hemp for various products
- investing in hemp-related assets through micro-loans
- investing in public relations, media and social media to further plant the idea of our area becoming a hemp hub
- create an online portal for organizing and compiling hemp related best practices
- use that same portal to connect people with each other and the various products
- initiate high school and college accredited courseware to support these efforts
- work with Hamilton County and other municipalities to support implementation
- partner with P&G, Kroger and Cintas to expedite this transition
- work with local companies to migrate to hemp, mitigating their use of oil-based plastics

Co-op Cincy

Co-op Cincy was started in 2011 with the expressed purpose of growing co-op businesses in our area. Co-ops are simply worker-owned businesses, and there are several that are part of Co-op Cincy’s network.

Member businesses include: Our Harvest - an organic farm in College Hill. Sustainergy - residential insulation services, Renting Partnerships - rental assistance and Cincy Cleaning Co-op - residential cleaning services.

It is part of their mission to “assist motivated teams in launching worker-owned businesses”. As this initiative will require any number of startups, Co-op Cincy could be a valuable partner in moving this idea forward.
Commercial Hemp Processing Examples

Hempwood - Murray, Kentucky

Hempwood is a hemp processing company that makes a variety of wood-like products that actually outperform wood. Notably 20 times stronger than oak. You can purchase flooring, paneling, hempwood for furniture and building materials.

Hempwood uses a process of soy-based adhesive resin combined with hemp fibers to create these durable, sustainable hemp wood products.

Midwest Hemp Technology - Augusta, Kansas

Processing the whole plant into sustainable solutions for humans and animals, MHT manufacturers hemp seed food, hurd and clean, short fiber. Throughout the hemp supply chain, MHT contributes to healthy environments and sustainable agriculture.

Hemp seeds are a near perfect source of protein. Rich in essential fatty acids omega-6 and omega-3, hemp grains are an excellent source of nutrition. MHT produces branded hemp protein powder, hemp hearts and hemp seed oil products for retailers.

Hemp hurd produced by MHT is highly prized as horse and animal bedding, fungus resistant mulch and renewable building materials like hempcrete. Hemp contributes positively to supply chains across the world serving textiles, paper, biofuels, food production and many other manufacturing processes. MHT carries wholesale supplies of grain, hurd, fiber and dust.

Midwest Quality Processing - Minneapolis, Minnesota

Their website states: Our goal is to create trusting relationships with farmers to source only the highest quality hemp flowers for extraction. Extract and refine these flowers into highly purified concentrates using industry-proven methods. This is how we deliver the highest quality product possible. With a team of multicultural backgrounds and expertise, we collectively contribute different aspects to create a well rounded professional experience.

They produce bulk products like ‘crude CBD oil’ and full spectrum distillates. On the consumer side, they offer supplements, salves and pet products. They will also produce custom hemp and CBD formulations and create white label products for rebranding.
Building a Sustainable Future with Hemp (from plantpeople.co)

1. Regenerative Agriculture

Regenerative agriculture aims beyond just achieving sustainability and farming with organic methods. It is a set of farming principles and practices designed to increase biodiversity, enrich soil, and enhance ecosystems. Hemp is well-suited for use in regenerative agriculture, since the fast-growing and quick-to-mature plants require little water and no pesticides, pull large amounts of carbon dioxide from the air, and increase carbon and microbial content in soil.

2. Soil Cleanup

Through a process called phytoremediation, hemp production decontaminates soil. Cannabis plants absorb contaminants through fast-growing, deep roots, which store or even transforms toxins into a harmless substance. The plant draws out harmful heavy metals from the soil, for example, and hemp has even been used to decontaminate soil around the Chernobyl disaster.

3. Automotive

Cars with exteriors made of hemp plastic and running on hemp biofuel lessen the human impact on the environment. Driving such a vehicle could be nearly five times greener than a conventional automobile. An acre of hemp can produce power equivalent to 1,000 gallons of gasoline.

4. Paper Products

When hemp is used to produce paper products, the consumer, the company, and the planet benefit. One acre of hemp, grown in about 20 weeks, can produce the same amount of paper as four to 20 acres of trees over a 20-year period. Hemp paper can be recycled up to eight times, while paper from trees can be recycled only three times. Hemp paper is more durable and can be made without the use of toxic chemicals.

5. Building Materials

Made from the shiv, the inner woody stem of the hemp plant, mixed with a lime-based binder, hempcrete forms a lightweight, durable building material. Hempcrete acts as an excellent insulator and sound-proofer, plus has the following benefits:

- Non-toxic, with no off-gassing and no solvents
- Mold resistant, with high vapor permeability and humidity control
- Carbon sequestration, storing carbon dioxide
- Fire resistant
- Pest resistant
6. Textiles

Hemp fiber is among the most durable and versatile of all-natural textile fibers. Textiles from hemp:

- Hold shape without stretching
- Are mold-resistant
- Are water absorbent, so they retain dye and color better
- "Breath" in warmer weather and retain warmth in cooler weather

7. Livestock Bedding

As bedding for livestock such as horses, chickens, and cattle, hemp hurds (the inner stalks) is longer lasting than traditional straw or wood shavings. Hemp bedding not only is long-lasting, it is very absorbent, produces low dust, controls odor, and is biodegradable.

8. Beauty / Skin Products

Described as the most balanced seed oil, hemp seed oil is rich in antioxidants, vitamins, and all 21 known amino acids. Made from cold-pressing hemp seeds, the oil moisturizes well. Hemp seed oil also is antibacterial, does not clog pores, calms redness, and includes some UV protectant. For these reasons, hemp seed oil appears in a variety of skin lotions, creams, serums, and treatments.

9. Superfood

Hemp seeds are nutritious, rich in healthy fats and essential fatty acids. An excellent protein source, hemp seeds also contain high amounts of important nutrients, including vitamin E, potassium, calcium, iron, and zinc. Hemp flour made from hemp seeds is gluten-free and easily digestible. Grinding hemp seeds with water produces a dairy alternative, hemp milk.

10. Hemp Oil (CBD) for Health

For thousands of years, people across the globe have used hemp plants for medicinal purposes. Research into the health benefits of CBD, a chemical compound extracted from cannabis plants, is ongoing, but preliminary research suggests promising results. Alleged health benefits of CBD oil include:

- Stress management
- Anxiety relief
- Sleep improvement
- Reduction of pain
- Reduction of inflammation
The Queen City of Hemp

Hempopolis. The queen city of hemp. Has a nice ring to it.

One can imagine larger vacant lots across town as assets now that hemp is being grown on them. They’re green and the trash is gone, as these tiny hemp farms are managed and cared for.

Imagine area high schools and colleges getting into the field with research and education to create existing hemp products and opening the doors to new ones.

Imagine the City of Cincinnati and Hamilton County leading our already large industrial base into a more modern and wholesome resource, as older technologies make way for newer ones.

One can imagine folks visiting Cincinnati from all over the world to learn from what we are accomplishing here. Cincinnati already benefits from a vibrant downtown and strong tourism. Hempopolis can only enhance such aspects of local life.

One can imagine our largest corporations, P&G, Kroger and Cintas all leveraging this new local resource. P&G can migrate to hemp for diapers and paper products. Kroger can make incredible inroads into packaging and alternatives to single use plastics. Cintas built its business on uniforms, which could be made from hemp, along with their other commercial products. These three alone can change the landscape dramatically.

Now imagine the impact as hemp products permeate the local culture and beyond. Replacing single use plastic with an alternative that biodegrades easily would be historic.

Imagine our many other local businesses switching to hemp based products as these projects and products come into market. This can provide local markets for local products. A powerful combination.

One can imagine transformational changes in our local culture by implementing strategies to grow, process and commercialize hemp. There are bound to be ancillary effects from making hemp a focal point of our local culture that we do not yet see or consider as well. These mini-farms and cottage industries will encourage community health. These many job and work opportunities will replace many the dead-end situations so many citizens find ourselves in.

One can imagine a lot when we re-invest in humanities oldest plant ally - hemp.

Please contact Jim Prues for further discussion | 513.608.8112 | jim@world5.org

A digital version with links to resources can be found at:
cincycfoward.com/hemp
world5.org/hemp