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In This Issue



The promise of Latin America – 7

- 1% THC limit puts Ecuador in global vanguard
- Brazil on cusp of surge in medical cannabis
- Briefings nation by nation
- Hemp's potential in a former war zone



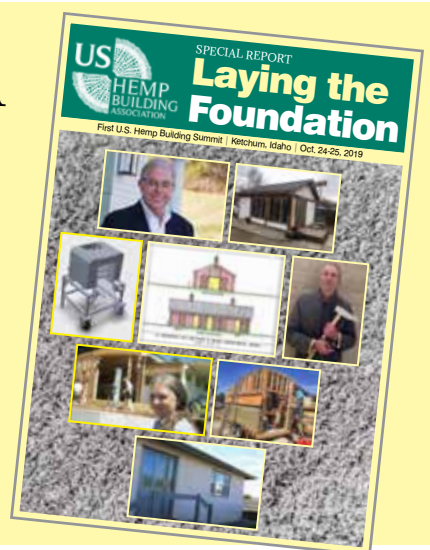
INTERVIEW

'A rare kind of game changer' – 12

Luke Dandrea, Clone Connect, USA

SPECIAL REPORT – 13 Hemp Building USA

- AUTUMN FLOWERS** 14
Beginnings, by Dion Markgraaff
- MEET THE PRESIDENT** 15
Interview: Bob Escher, AIA
- BUILDERS SOUND OFF** 16, 17
Pamela Bosch, Steve Allin
- PIONEERING BUILDS** 20
Hemp buildings across the USA
- ARCHITECTURE** 22
Small, functional & green
- ROLLING, ROLLING** 24
A hemp house on wheels
- THE HURDMASTER** 27
A mighty, micro-decorticator



USA

Hemp fields quadruple – 28

Don't panic over CBD – 29

Mike Leago, iHempX: 'Let's wait and see'



EUROPE

The case for extracts – 30

The European Industrial Hemp Association proves hemp extracts have been in food for centuries



A solar-powered hemp food factory goes on line – 32

Challenges to European CBD – 36

Joscha Krauss: Five key barriers to overcome



ASIA

Genetic diversity & energy – 38

PLUS: CBD players target Thailand

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Latin America & The Caribbean

The region can become a hemp epicenter

While hemp is not a panacea for endemic poverty in Latin America & The Caribbean, the region's climate, land mass and generally liberal policies toward cannabis signal vast potential for a thriving sector.

"The hemp industry is in line with sustainable business principles, providing economic, social and environmental benefits," said Barbara Galletti, CEO of Pronatura Ltda., and co-creator of Nutranabis, the first Chilean brand dedicated to the re-introduction and commercialization of organic hemp products in Chile.

"These principles are essential not only to reduce poverty levels but also to promote social justice and a healthier planet," Galletti said. "The hemp industry fits perfectly in this new business model."

Enlightened policy

Latin American governments are steadily moving to decriminalize marijuana and other soft drugs, along the way clearing the path for industrial hemp. Argentina, Chile, Colombia, Peru and Mexico all have passed medical cannabis laws.

Uruguay has perhaps set the best example, with enlightened laws that guide its cannabis and hemp markets from production to distribution to retail, while putting human rights at the center of the country's strategy. Uruguay also pioneered the "full 1% THC" standard for industrial hemp. Ecuador followed this year.

Cultivation, production and distribution of hemp is legal throughout Latin America, and a system of effective banking and regulation for trade is in place. With policies that allow access to cannabis for therapeutic uses, there is a wide berth for hemp extracts in Latin America, most importantly CBD. The region's total population of more than 650 million spends \$354 billion on health-care and \$117 billion on pharmaceuticals,



indicating dramatic potential.

Promise in exports

The region's potential for export is also being demonstrated. Canada-based PharmaCielo recently made its first shipment of CBD isolate produced in its Rionegro, Colombia operations to Australian nutraceuticals maker Creso Pharma's unit in Switzerland. Creso is expected to benefit from recent expansion of PharmaCielo oil processing capabilities at its Rionegro facility where it has invested \$3 million in high-performance, high-volume extraction technology.

PharmaCielo, which is listed on Canada's TSX Venture Exchange with a market capitalization of \$675 million, has operations in Canada, South America, Mexico and Italy. Assets include PharmaCielo Colombia Holdings, the largest cannabis producer in Colombia. And that's just one example of how investors are expressing their confidence in cannabis and hemp across the region.

And no wonder. With projected legal sales of cannabis, hemp, and CBD in Latin America expected to grow from \$125 million in 2018 to more than \$776 million by 2027. (Arcview Market Research/BDS Analytics), there's potential for a bonanza,

particularly in Brazil and Argentina, which far outweigh other countries in terms of spending.

Latin American medical cannabis stakeholders say the region could supply CBD to markets such as Canada, Mexico, Germany and Australia, all of which are developing clear legal frameworks to import cannabis-based products.

Other uses

But hemp proponents point to the potential of the plant in sectors other than medical and health products.

"Latin America produces a tremendous amount of food, which could be exported," said Sergio Vazquez Barrios, who heads Uruguay's industrial hemp program in the Ministry of Livestock, Agriculture and Fisheries (MGAP).

"From the textile and construction point of view, a great revolution can be generated if legislators, entrepreneurs and investors work together to take advantage of the opportunities the crop presents," Vazquez Barrios said, citing Uruguay's forestry sector, which has attracted global players in pulp production to set up large-scale industrial plants.

Strategy required

"I believe that the poverty levels of a country or an agro-exporting region are not overcome only with the large-scale production of a crop for which the demand is temporarily higher than the supply," Vasquez Barrios said of hemp's potential for Latin America. "To achieve this, a strategic objective and strategy must be combined with education and development policies."

Said Pronatura's Galletti: "Companies should focus on making positive changes to alleviate social and environmental challenges by including sustainability, circular economy, organic, fair trade and other concepts to their business."

1% THC limit puts Ecuador in global vanguard

The Ecuadorian government has set the maximum THC level for industrial hemp at a full 1%, following the lead of Uruguay, Switzerland and Australia.

The limit was set in policy changes outlined during a legislative session in September that legalized industrial hemp by removing it from the Ecuadorian criminal code. The 1% THC limit is based on dry weight of hemp green matter. The reformed criminal code states clearly that hemp under that limit is no longer a prohibited crop, and that regulation of THC levels is the responsibility of the National Agrarian Authority.

Thorny issue

Cannabis regulation has proven a thorny issue in Ecuador. “Many politicians are aware of the economic potential that hemp represents in their different areas,” Oscar Farith Pino Herrera, founder of NGO Cñamo Industrial Ecuador, told HempToday. “However there is still a struggle against economic interests of conservative elites who do not want it to be approved.”

Ecuador in 2015 approved a new law that decriminalized cannabis consumption. However, lack of clarity has caused confusion among the public as well as authorities surrounding CBD and other compounds.

The vote among Ecuadorian legislators showed 83 in support, while 23 assembly members chose to abstain from the vote and 20 voted against the changes.



By setting the 1% benchmark, Ecuador puts itself in the legal vanguard on a global stage. In most parts of the world, the THC limit for industrial hemp is 0.3%, while European nations labor under an even stricter 0.2% THC limit, which stakeholders on the continent are working to change. North America observes a 0.3% THC limit.

Which strategy to take?

The changes in Ecuador more broadly address the use of cannabis for medicinal purposes, and at least partially clear the way for the local CBD market, although many questions remain. Some have advocated importing CBD in the beginning, to guarantee quality, and making pure CBD products available only in pharmacies.

“Many producers make oils and these medicinal products in pots,” Omar Vacas Cruz, a researcher at the QCA Herbarium of the Pontifical Catholic University of Ecuador, recently told journalists, a process that “should be done in a technical way, through a laboratory.

“There are people who make money off of the pain of others. That’s why I think that importing in the first instance seems fine to me,” Cruz said, acknowledging “that will create a black market, since importing will mean having products at higher prices.” Cruz said CBD is now selling in Ecuador for about \$30 for a 20 ml bottle.

Investment picture unclear

He is recommending that the national health authority be responsible for enforcement of industry controls to ensure products are safe.

Depending on how things shake out, the most recent changes to the law could spark a flood of investment as American and Canadian companies have long shown interest in sowing hemp in Ecuador, where the long daylight hours and post-volcanic soil provide optimal conditions, local stakeholders say.

While details on licensing of growers and processors remain to be worked out, “It is only a matter of time before Ecuador demonstrates its agricultural potential with hemp,” Cñamo Industrial Ecuador’s Herrera said.

Ecuador was joined by Bolivia, Cuba and South Africa in proposing a declaration that was adopted by the United Nations last year binding countries to “respect and protect rural needs,” aiming to “incentivize rural policies that include cannabis in their development strategies.”

Brazil: Medical cannabis market is on cusp of surge

Hemp in Brazil is advancing primarily around market changes afoot affecting CBD, which can now be legally imported.

Estimates have been floated that Brazil’s high-potential overall medical cannabis market would start to hit \$1.4 billion annually if CBD products are more widely approved. Several importers have already established beachheads in the national market, projected to reach turnover of \$4.7 billion in the next three years. Observers say the market potential for medical cannabis is on the cusp of surging in Brazil, which has several million epileptics and patients with other ailments like autism and chronic pain who could benefit from CBD. Estimates are that 6,000 patients are registered and receiving government-approved CBD oil for medical purposes, but the black market could make that figure much bigger.

Brazil allows the use of CBD and THC to treat epilepsy under strict regulation. Some suppliers in Brazil reportedly offer products with THC levels exceeding the generally observed international standard of



0.3%. Under medicine subsidies in Brazil, the government offers generous support to patients. At least one CBD seller estimated it gets as much as half its revenue from such subsidies.

Brazil, the largest country in South America with over 200 million inhabitants, is the fourth largest pharmaceutical market in the world.

Under current draft proposals for development of domestic cultivation of medical cannabis in Brazil, producers would be able to sell their harvested crops only to research institutions or to manufacturers of registered cannabis-based medicines. Sales to individuals, wholesalers or pharmacies would remain prohibited. Also, a framework would be set

up to allow the registration of marijuana-based medicines without completed clinical trials. But government negotiations over the proposed laws have been contentious.

If laws changed to allow cultivation and production in Brazil, the price of CBD and other extracts would be much lower, as export costs from the U.S. and fluctuating exchange rates currently contribute to high prices, estimates hold.

Beyond medical applications, there’s seemingly little activity with regard to other hemp sectors in Brazil. That’s despite the country’s legacy with cannabis and hemp. From the beginning of Brazil’s colonization until the early 20th century, Brazilians have legally cultivated hemp in various regions of the country, as did the government, primarily harvesting for fibers to be used in textiles. Historical documents also show that up until 1932 extracts and other remedies derived from hemp were considered legitimate and recommended by doctors for various ailments. Brazil’s hemp industry led all agriculture sectors in the late 1800s.

Uruguay

Uruguayan officials see hemp's promise both domestically and for export. Stakeholders active in the industry include local entrepreneurs who are both self-financing and bringing in foreign partners. Uruguay has led the world in setting a rational legal environment for cannabis, and set the global benchmark of 1.0% THC allowable in hemp production. The country offers excellent conditions for foreign investors, and benefits from high education levels, legal certainty and macroeconomic stability. Cannabis including hemp has been legal since 2013. In Uruguay, hemp has so far been explored primarily for medical purposes, with the industrial side awaiting greater exploitation.

Colombia

In 2017, President Juan Manuel Santos signed a decree permitting individuals and businesses to engage in the cannabis industry. While the sector is considered still in its infancy, hemp is fully legal to grow in Colombia under a license governing "cultivation of non-psychoactive cannabis plants." That's one of 4 licenses for cannabis production in Colombia administered through the Ministry of Justice. Other licenses cover growing psychoactive cannabis plants; use of cannabis sowing seeds; and manufacture of cannabis derivatives. CBD producers must also obtain a license for the "manufacture of cannabis derivatives." Obtaining a license for the cultivation of psychoactive cannabis is more regulated and more expensive.

Peru

Peru's climate is an ideal fit for agricultural business, and the country has extensive experience in agricultural products such as Super Foods – a key sector for hemp. In early 2019 the Peruvian government approved a law that regulates the medicinal and therapeutic use of the cannabis plant and its derivatives – a measure lauded by stakeholders, and one expected to generate significant increases in imports along with foreign investment. That followed legalization of cannabis oil for medical purposes in 2017. While cannabis is illegal for recreational use in Peru, possession is decriminalized. Estimates are that cannabis crops could grow to 3,000 hectares within five years, mainly in coastal areas.

Argentina

Argentina has no formal plan for development of the industrial hemp sector. While the country legalized medical marijuana in 2017, the government only recently set legislation allowing domestic cultivation of "therapeutic cannabis," via a process that proved controversial. While hemp growing was common in Argentina before the War on Drugs, proponents say greater political will is required to begin the process of building up the farming, processing and production capacity for a full-fledged hemp industry today. Argentinian hemp advocates see potential for development in the food, textile, cosmetics, medicinal, construction, composite materials and biofuels sectors.



Mexico

Mexico is the second largest Latin American market for industrial hemp products, with an estimated 15% share. Mexican laws allow the cultivation, production, and use of medical cannabis products with less than 1% THC. Recent legislation that would amend Mexico's federal drug laws includes provisions concerning medical cannabis and the use of hemp in textiles. While talk of legalization has been ongoing in Mexico, efforts to create and pass reform legislation have increased since the country's Supreme Court ruled in 2018 that a ban on personal use and cultivation of cannabis is unconstitutional. President Andrés Manuel López Obrador's administration also backs legalization.

Paraguay

Paraguay approved its medical cannabis legal framework in 2017, opening the market for CBD and other forms of therapeutic cannabis. The country is the second-largest cannabis producer in Latin America after Mexico. Paraguay is the main source of cannabis for Brazil, Argentina, Uruguay, and Chile.

Chile

Chile and hemp share a long history that dates to the 1500's. Hemp played a major role in the survival of the Spanish empire, when Chile was one of the world's biggest hemp producers. Today, Chile's national hemp food market is steadily growing, indicating a good time for investors who want to get in on the ground floor in that sector. Getting a hemp business set up, organizing import or export as well as commercialization of hemp products in Chile is an uphill battle, observers have noted. Stakeholders working on the ground in Chile now say they are in outreach to other companies and investors to boost local hemp farming, create a national hemp association, increase international trade and reposition Chile as a major hemp producer. Achieving those goals will require more support from investors and governmental institutions, as well as enlightened hemp development policies. Sales of hemp plants, buds, CBD and other extracts or oils are illegal in Chile.

Ecuador

Ecuador has just recently approved a bill that allows hemp to be commercialized, although a full regulatory regime is still being developed. While industrial hemp's application across all sectors is in its early stages, cannabis oils, creams and other solutions are being produced and sold within the country for "medical purposes," with doctors helping patients access medicinal cannabis by way of anonymous prescriptions. Lawmakers in Ecuador originally proposed legislation formalizing the medical cannabis industry in 2016. However, debates within the government related to health concerns have delayed its passing. Many of Ecuador's regional climates offer advantageous conditions for cannabis production, bringing consistent, reliable harvests of the crop year-round, and reducing infrastructure investment at the start-up stage. Like other Latin American countries, costs of labor in Ecuador are highly competitive compared to other parts of the world.

Puerto Rico

Under U.S. jurisdiction, Puerto Rico operates according to the 2018 U.S. Farm Bill, which allows hemp to be fully cultivated and manufactured. The PR government is now in the process of creating a regulatory board to manage the local permitting process under federal guidelines. Puerto Rico has over 2,800 hours of sun yearly, allowing up to 3 crops per year. Local incentives for registered farmers growing hemp are in place, and government owned land and manufacturing facilities are available for rent. Puerto Rico offers highly skilled farm workers, and proponents stress the advantages of a location that can serve as an industry bridge to mainland USA, Latin America and Europe. Investments in Puerto Rico are protected by the laws of the United States.

Haiti

As Haiti rebuilds its rural areas, observers say value-added agriculture based on hemp can play a central role. Combining industrial hemp and medical marijuana can provide much higher value per acre, helping to build the rural economy. Those hoping to help Haiti need to start working with Haitian farmers to implement a widespread hemp growing and processing program. A pilot program in growing and building with industrial hemp has been undertaken by the International Hemp Building Association, and other initiatives are underway.

Jamaica

The Government has said it has no intention to develop a hemp industry over fears that industrial hemp could threaten the survival of the island's various unique species of the cannabis genus.

Pioneering hemp in Chile: 'It wasn't easy'

INTERVIEW: *Barbara Galletti is co-founder and CEO of Pronatura Ltda., and co-creator of Nutranabis, the first Chilean brand exclusively dedicated to the re-introduction and commercialization of organic hemp products in Chile. Galletti's work has been crucial in opening Chile's hemp market by regularizing the process for import and sales of hemp products.*

Hemp Today: How has the hemp industry developed in Chile to this point?

Barbara Galletti: It has not been easy. There was no hemp market in the country. Our company also had to deal with a lot of misinformed authorities who did not understand the purpose of our business. It took our company more than two years and the work of a legal team to successfully open the way for the import and commercialization of hemp products to Chile. Since then the national hemp food market is steadily increasing. The time is just right for investment opportunities that boost the market to the next level.

Chile was one of the major hemp producers worldwide before the global ban on cannabis. We are thrilled to have created the first Chilean brand exclusively oriented to nutritional hemp products in the country. Hemp is back in Chile and it is here to stay and to grow.

HT: In terms of reaching the consumer market, what are your goals?

BG: Our company wants to offer the public all the nutritional and health



benefits of this incredible superfood. Nutranabis sells hulled hemp nuts, protein powder and flour in different formats. We supply restaurants, caterers and other food companies as well as an increasing number of health stores.

We are also developing a line of manufactured food products and we are seeking to expand our market to include full spectrum CBD and cosmetics. We look forward to working in partnership with other companies and investors to boost local hemp farming, create a national hemp association, increase international trade and reposition Chile as a major hemp producer.

HT: What can hemp do to help overcome poverty in Latin America?

BG: It seems difficult to reduce the level of poverty in our region with one business alone. However, the hemp industry has the potential to play a major part to overcome this situation. The organic hemp industry is in line with sustainable business principles, providing economic,

social and environmental benefits. Companies around the world should focus on making positive changes to alleviate social and environmental challenges by including sustainability, circular economy, organic, fair trade and other concepts to their business.

These principles are essential not only to reduce poverty levels but also to promote social justice and a healthier planet. The hemp industry fits perfectly in this new business model. Moreover, the versatility of hemp and technological developments will make significant contributions to boost economies. The hemp industry needs more support from investors and governmental institutions, as well as hemp development policies to achieve these goals.

HT: How did you end up working in the hemp business?

BG: After studying the market, looking for a business opportunity that would have a meaning beyond economic profits, hemp became the perfect alternative. It is a business that is not only profitable but has incredible growth potential.

It is also sustainability oriented and can greatly contribute to solving current social and environmental challenges. It is a growing and sustainable industry almost nonexistent in Chile just a few years ago. So in 2014, my partner and I founded Pronatura with the aim to re-open the hemp market in Chile, starting with hemp food products.

Hemp as change agent in former Colombian war zone

INTERVIEW: *Avelino Martinez Sandoval, CEO at ApagroCOL S.A.S., works with the Colombian national government's Territorial Renewal Agency (ART), which advances rural reform in the areas most affected by Colombia's armed conflict. Sandoval works on economic development initiatives that uplift rural communities and indigenous peoples, within the framework of peace agreements between the Colombian government and the Revolutionary Armed Forces of Colombia (FARC).*



HT: You've taken important work on your shoulders, a very important burden for the industry. Being at the epicenter of so many interests, seeking to do good, what's your biggest challenge?

AV: The biggest challenge is to make Colombian industry understand the ad-

vantages that industrial hemp offers and how it can help us in developing a circular economy. That the national hemp industry has the capacity to develop products of all kinds and help reverse climate change. It's important that the country's new regulations go in that direction.

HT: With Colombia offering so many opportunities in industrial hemp, which sector or products are most inviting for international investment?

AV: One of the areas that draws the attention of the Colombian industry is production of hemp paper. And fiber production for other applications, as well as food and oils. These areas are not at all addressed on an industrial scale; that's where investors should concentrate their efforts.

HT: What comparative advantages does Colombia offer for the hemp industry?

AV: Most importantly, the clarity of regulation of industrial hemp in Colombia. It's legal to plant, process and transform hemp into products. The other advantage is large tracts of unused land. The climate is very suitable for hemp. A local industry with large demands for raw materials can create and supply a new circular economy.

HT: How is progress with your initiative?

AV: Our group has obtained the licenses to plant and transform hemp in Colombia. We're now bringing in different varieties of hemp seeds to start small pilots with research centers, universities and other interested stakeholders. We're looking for varieties that best adapt to our soils and climate, and can produce plants with less than 1.0% THC. This will let us make strategic decisions regarding our direction in the various hemp sectors going forward.

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‘A rare kind of game changer’

Luke Dandrea is the CEO of Clone Connect, a top 3 search destination for CBD hemp cultivation and manufacturing at wholesale. He has interviewed more than 70 elite cultivators and sold to many publicly traded companies. Clone Connect has acquired 200 million seeds with licensing to sell into 26 countries for 2020. Luke is also CEO and creative director for DRIHP Hemp Clothing and Hemp to Save the World, and owner of Hydrocanna CBD infused hydration.

HempToday: What’s your outlook on the Latin American & Caribbean markets, and how they will develop? How important is that part of the world to your business?

Luke Dandrea: It’s very important to us. You can feel the enthusiasm across Latin America. There’s an extremely high demand for quality genetics and that’s a major focus for us. In terms of the Caribbean, the potential is through the roof. The climate, the land mass available ... we feel hemp can be a major difference-maker for farmers in that region, especially with a changing climate.

HT: What’s the key to building trust among the various constituencies in the value chain?

LD: We want that farmer to know there’s an honest company ready to help him sell his hard-earned biomass to real buyers. We want that broker to know that if he plays fair, there’s a spot for him at the table. We want that beginner – and the many thousands more like him joining our movement – to know that there’s a reputable place to find great genetics for their climate, whether they’re in Bakersfield or Bolivia.

HT: Tell us about the startup of Clone Connect.

LD: Our story started in clones. But what we soon realized was that the entire marijuana and hemp industry (clones, seeds, biomass, flower, isolate, distillate, etc.) needed a change for the better. Like many great companies before ours, Clone Connect was born from pain. In the early days of the legal cannabis industry, things were exciting, fast, promising – and dangerous. We learned that the hard way the first time we were ripped off on a clone sale. As the bad actors and snakes flooded this new industry, it became clear to us that our pain wasn’t unique. It seemed everyone had a similar story: a farmer duped into a bad futures contract; a broker cut out of a deal; a hemp beginner’s dreams dashed before a single plant sprouted when they realized their “feminized” seeds were, in fact, mixed.



“Anytime an industry is ‘exciting’ or experiencing rapid growth, it’s also inherently volatile.”

Luke Dandrea
Clone Connect

HT: What really drives you and your company? What’s the mission?

LD: This isn’t a money grab. We aren’t 49ers. We work in hemp for one simple reason: we think it can save the world. As our industry rides the CBD wave of investment and entrepreneurship into the future, we believe industrial hemp will change everything – the fork you eat with, the shirt you wear, even the car you drive or the home you live in. That’s after we change the lives of countless farmers by offering them a cash crop that they can count on. Everyone is in the hemp game for something green; exactly what kind of green they’re after tells the real story. Us? We’re environmentalists. We’re dreamers. We’re fixers.

HT: How do you see hemp fitting into the larger picture — business, society, environment?

LD: Every so often there’s an opportunity for humanity to make a real leap forward, and it doesn’t always have to be a spaceship to Mars or a fancy artificially intelligent robot. We truly believe hemp is a game-changer, the rare kind that we all can benefit from – and, if we’re honest, the kind we sorely need.

HT: What are the keys to managing a company with investments in so many

countries. How do you manage your time?

LD: I have a great team around me. Nobody can do it alone; surrounding yourself with capable people is probably the most important task a CEO has. I’m a hands-on guy, so learning to delegate was a process for me, one that has paid dividends quickly.

HT: Aside from the trust issues we’ve already discussed, what are the other challenges to the industry from Clone Connect’s perspective?

LD: Any time an industry is “exciting” or experiencing rapid growth, it’s also inherently volatile. There are people going broke in hemp. Part of our goal is to help mitigate those disasters – by supplying quality genetics and consulting, we can help farmers avoid worst-case scenarios, and that’s a win for everybody.

HT: Where do you see your company 5 years from now?

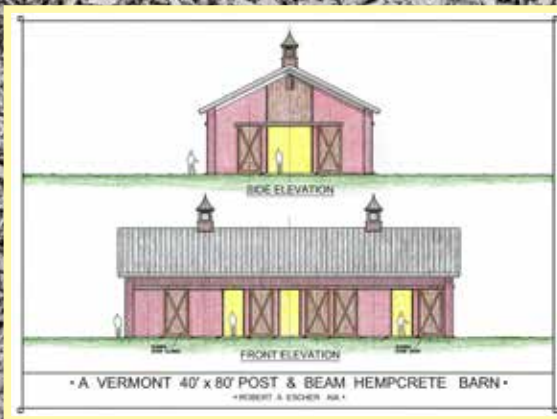
LD: It’s hard to say, because as I mentioned before, we’re big dreamers, and five years is a long time. I will say we believe industrial hemp is the long-term difference maker, and we aim to be very active in that arena, especially here in the Americas. Hopefully we’ll build a company we can be proud of that did its part to help move hemp forward.



SPECIAL REPORT

Laying the Foundation

First U.S. Hemp Building Summit | Ketchum, Idaho | Oct. 24-25, 2019



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ABOUT OUR LOGO: Instead of the popular leaf symbol, the logo is a cross-cut slice of the stalk, which exposes the basic properties of the fiber and cellulose, showing the superior structure of the plant.

USHBA.org: Our website will host information on events, supporting industry companies, resources and progress reports, and will archive the association's newsletters, as well as sell USHBA branded merchandise.

Spring planting brought autumn flowers for USHBA

By Dion Markgraaff



In spring 2019, the seeds of an organization for advancing hemp in construction were planted, joining earlier initiatives aimed at forming a national group patterned after the International Hemp Building Association. This fall those seeds flowered with more people joining us in the U.S. Hemp Building Association (USHBA). Here we are gathered for the first of what will be many professional gatherings supported by the Association.

In forming USHBA, we dedicate our efforts to advance hemp construction by engaging with stakeholders throughout the value chain, down to the consumer; and with learning and research institutions.

Taking on the challenges

There are many challenges to take up. One of the biggest is the certification of hemp-derived building materials. At this point, no certification exists for "hempcrete" in the USA, making the consumer responsible for the task of local building approval that takes a lot of time and money, which discourages most people, holding the industry back.

Hempcrete's certification along with the approval of new era hemp building materials such as hemp "wood" and functional plastic biocomposites will help set an environment to scale up production and consumption.

There are other challenges. "Hemp construction today suffers first from a lack of processing facilities and a lack of plants in the ground," said Eric McKee, USHBA's Director of Membership and CEO of WNDR in Colorado. "That keeps the costs slightly higher than traditional building methods. Once we start to see improvement there, hemp construction will be not only more sustainable but more cost effective as well."

Opportunity & hope

But despite the challenges, the opportunity and the hope hemp offers are just too good to pass up. For business, for jobs, and for the planet. The physical properties of the hemp plant make for the perfect, environmentally friendly raw material for construction.

And there's more. Consider:

- The U.S. construction industry is valued at more than \$1 trillion per year
- The 2018 Size & Impact Report shows that in 2017 the U.S. plastics industry accounted for 989,000 jobs, and total size to \$432.3 billion
- Housing crisis – California needs 3.5 million dwellings to meet current needs
- Eco/sustainability crisis – Hemp materials are carbon negative
- Fire/flooding/earthquake crisis – Hemp buildings are resistant and resilient
- Waste crisis – Hemp construction is Zero waste

Mission

The USHBA has formed various committees through which members can get involved to work on specific industry issues. The USHBA's education committee is working on publishing details on the group's website of the key issues and challenges we face, and the solutions needed for certification.

"USA hemp construction needs the industry to come together to work on overcoming issues and obstacles that we all face," said education committee chairman Sergiy Kovalenkov of Ukraine-based Hempire.

That's USHBA's mission statement in a nutshell. We invite you to join us.

Dion Markgraaff, Hemp Tech Global, is Vice President of USHBA

interview:

Bob Escher

USHBA President

“Once all the legal, social and building code issues are worked out, the U.S. will catch up very quickly.”

Bob Escher

A practicing architect in Dorset, Vermont for over 30 years, USHBA President Bob Escher founded Escher Design in 1988, with the goal to create a company whose primary objective was to deliver the unique vision of each client without compromising artistic excellence, innovation and attention to detail. After being introduced to hempcrete by his son Alex, the father-son team embarked on a mission to create the aesthetic of hempcrete by developing and producing a proprietary hemp wall system. In 2017, Escher Design completed the first permitted hempcrete structure in Denver, Colorado. Bob was elected the first President of the USHBA earlier this year.

HT: Talk about hemp and architects. How aware are “green” architects about hemp’s potential?

Bob Escher: I’ve seen an increased awareness among my colleagues ever since the Farm Bill was passed last year. One of the main goals of the USHBA is to create an education program targeting everyone in the construction industry. This will create the “infrastructure of professionals” to design and build high quality hempcrete structures that will conform to all U.S. building codes and life safety issues.

HT: What’s the key to getting hemp construction into the broader “green building” movement?

BE: Education, infrastructure and U.S. certifications.

HT: What are the challenges with respect to building permits, etc., in the USA?

BE: There is no easy answer to that question since hempcrete and other hemp based products are not yet fully certified in the US. I expect basic certifications will be awarded within the next five years, so until then, I recommend to anyone who is in the construction industry to use that time to educate themselves on how to integrate hemp based products into their construction methods. When you think about it, the hemp in a

“hempcrete house” is probably about 30% of the actual material used to build the house.

There is still concrete, wood framing, interior millwork, tile, cabinetry, mechanical systems, masonry, roofing...the list goes on. We need experienced general contractors who know how coordinate all these subs and run a construction project from start to finish. We need people in all the trades to understand the properties of hemp and how it interacts with other materials that may expand or contract at different rates. We need to make sure that the hemp based products we use are of the highest quality in order to guarantee life safety, a healthy environment and comfort.

HT: How does the hurd supply/demand situation look in the USA at present?

BE: In the next few weeks the farmer’s across the country will be harvesting the first legal crop of U.S. hemp in more than half century. Unfortunately, there are two issues that will affect the supply of hurd. First, the processing infrastructure to get the harvested hemp ready for market is extremely limited. This has left many farmers scrambling to find a buyer for their crop.

Second, a huge percentage of this year’s crop is being grown for CBD, not fiber. The best hurd to use for hempcrete

is from the fiber plant, which grows higher, straighter and thicker than the smaller CBD plants. The bottom line is the fact that the CBD plant is much more profitable to grow, so we in the construction industry need to build with hemp to prove it is ready to be in the mainstream. This will create the demand and economic incentive for the farmers to switch over and grow for fiber instead of CBD.

HT: What about the technology to produce hurd? What are the latest developments in the USA?

BE: The rest of the world has been growing and producing hemp based products for decades, so the technology and equipment are there. The U.S. is way behind at this point, but once all the legal, social and building code issues are worked out, the U.S. will catch up very quickly.

HT: Who’s contacting you these days?

BE: My hemp related calls and meetings have involved an incredibly diverse group of people. The most fascinating “aha” moments come from people my age, who when reminded that they are “children of the 60s,” totally open up and realize that they have some unfinished business to take care of. After all, they were the first generation who wanted to “Save the World.”

HT: Who are your heroes in hemp building?

BE: Without question it is the small group of hemp activists and builders across the globe who decades ago created the cottage industry of hempcrete building that exists today.

Pamela Bosch



Wise words from an unlikely pioneer

We're at a time in history when the cannabis plant is being released from the lies and manipulations of people whose self-dealings have threatened our collective survival.

We are gathering for this conference around the potential of the cannabis plant. Cognizant of the contradiction that a plant with so many beneficial properties has been illegal for decades, we are eager to assist the unleashing of its potential.

The most recognizable attributes of cannabis come from the flower and seed – consciousness raising, pharmacological benefits, nutrition – these inspire us with opportunities to nurture our body, mind, and spirit. (Why has this been denied?) But the plant gives more: Fast growing, it produces abundant, high quality fiber and cellulose for cloth, paper and building materials that could allow us to leave fossil fuels and trees in the ground.

Unlikely builder

I am an unlikely building pioneer; I don't have a construction company or an architectural firm or a manufacturing company. I don't even have a revenue stream from what I do. Nevertheless, here I am, a woman of retirement age going all out to change the way we build. I do this because I am stuck in a world in which humans have not worked together to build what is best for ourselves and our progeny, but a world that has justified the illegality of a plant that offers us so many gifts. I do this because once in it,

I discovered that there was a space for me. In disrupting the status quo, there is value in being a renegade, a generalist, an artist, a grandmother, a human being.

Stumble upon

I stumbled upon hemp and lime (“hemcrete”) as a building material when I was looking for non-toxic insulation to upgrade my energy inefficient home. The more I researched, the more I saw the conundrum: Here is a solution to so many problems, yet scores of building experts are inclined to dismiss it.

The properties of a good building are not so esoteric that they can't be grasped by a layperson. A building should be comfortable to live in, safe, easy to heat and cool; it should be aesthetically pleasing and last a long time requiring minimum maintenance. It should *not* dump carbon into the atmosphere or toxins into our bodies. Using the waste of an annually renewable, adaptable plant with so many other uses just makes sense.

With the help and commitment of some like-minded pioneers in Europe and North America, I have managed to build a beautiful house in Northwest Washington State. Steve Allin, Alex Sparrow, Wolf Jordan are among the builders whose shoulders I've stood upon, giving me the knowledge and courage to go ahead. The house can no longer be called a pipedream or an abstraction or a cannabis induced hallucination. It is an efficient, non-toxic, beautiful structure that exudes its own merit.

Be outside the system

As a result of this experience, I have not only built a house, but I have become immersed in the challenges of advocating in uncharted territory. I've come to see that it is an advantage to not be part of a system that has become impossibly bound to rules evolved under unnatural constraints. More than the laws of physics or the consequences of downstream toxins, changes to the way we build are subject to the economics and politics of business as usual. Who will finance, permit, insure, design buildings from this “alternative” material? Who will take risks for the health and sustainability of our species without the guarantee of immediate gain? The rules of the game that made it possible for the likes of Richard Nixon and Harry Jay Anslinger to demonize an inestimably valuable companion to meeting human needs have an ironic credibility in the operation of our structures of power.

I like to frame it this way: the cannabis plant is emblematic of how we humans have lost our way. While offering a path to health and abundance, it has instead been prohibited. What if, instead, our business with each other emphasized the advantages of shared abundance, mutual benefit, self-empowerment, of bringing forward what is collectively beneficial to the total well-being of our planet and our progeny?

Pamela Bosch is an educator, artist and hemp activist. She is the founder of Highland Hemp House, a living hemp construction project and education center.

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Think seriously, and panic



Steve
Allin

It's not just "the times that are a changing." This is not a time of normal change as in the seasons or fashions or the date on the calendar.

This is the time of the biggest changes humanity will ever have to make. A grandiose statement for sure, but one I am constantly in recent times attempting to make with as much impact as I can, as I realize that many people still really don't understand what is at stake.

So let's take one of the common statements being made at the moment that make a slight reference to our condition emanating from the media or the world of politics: Business as usual is not an option! This is a phrase that might easily be used in our hemp building sector. But is anyone really listening to the underlying meaning of this collection of words? In situations such as this I have learnt that it benefits my understanding if I can get a bit of perspective on an issue to both grasp it and see a possible solution.

Living in a meme world

Our busy, modern, technological lives have trained us to accept a collection of realities without question in a similar way to memes flashing up on our Facebook page. Though recently there has been a move to question what we are being told, this has descended into the quagmire of "fake news," especially any bit of information that might mean having to change one's lifestyle. For instance it's all a bankers conspiracy! Or climate change is completely normal. It's nothing to do with us humans.

Well, the banking world has certainly created a system tilted towards the profits pouring into their own pockets, but it is the short term thinking of those who use the banks, and it means that we punters, as a mass of stupidity, keep borrowing from a future already bankrupted by debt.

Who change? Me?

The cry of climate change deniers that it's not our fault the planet's climatic control is malfunctioning, is just another way of saying "I don't see why I have to change the way I live, drive my car, heat my home, eat my meat or dream my dreams of more, more, more."

What we have to understand is that if we do make moves in a direction to save ourselves, the vested interests desperately attempting to reassure us that we still need to keep buying and borrowing, will go into overdrive as they tie themselves in knots trying to keep the adverts positive about the potential for keeping the consumerist show on the road (but with a little greenwash to keep it fashionable). In a worse but likely situation, the anger being felt by those who are the first to lose out, might end up in violence on the streets.

These visions of a future are becoming what is termed the "new normal," and are in fact happening, with weather events that 20 or 30 years ago would have seemed outrageous, but are now reported as if we would expect that kind of extreme anytime.

Things such as forest fires that burn sporadically for years or the deluges of rain that turn burnt mountainsides into a moving mass of murderous mud are now reported with such regularity that it is no longer surprising, as can be seen by the reaction to both Puerto Rico and the Bahamas being completely destroyed, or the dramatic spread of fire in every large forest on the planet. Oh, that's normal. That happened last year didn't it?

Choices we make

So what has this got to do with using hemp to build houses? To start with, it is also about change. Changing the way we choose materials, changing the way we think about using the building, how we design it, the systems we use during construction and the utilities installed within. It's also about how we think of comfort in a broader sense.

In a book published last year, Paul Hawken editor at Drawdown, a nonprofit that advances solutions to global warming, proposed 80 actions humanity could take to address the carbon issue. No. 1 on the list was tackling the use of air conditioning and refrigeration as the usually incorrect disposal of the chemicals still used in these systems is an extreme addition to other greenhouse gases, and the energy needed to operate them is colossal. Millions of extra units are expected to be sold in the next few years, particularly in the Asian market.

Build a better refrigerator

How do we address this? We don't just build hemp houses!

The design of the building is in many ways more important. As a child I hated the annoying song (often coming from our home radio) about "Little Boxes all made out of Ticky Tacky," and as I have grown older it is more a reminder of my revulsion of bad systems of building our infrastructure. Walls that buffer heat or cold, tall rooms to take the heat up and away and simple technologies such as wind towers, or just shading externally can all replace the machines we now use to turn our homes or offices into refrigerators. Building a house suitable for Sweden in Texas is, to put it bluntly, stupid. Especially if it is about external appearance.

So we in the hemp world need to work with architects to get the right ideas to start with. That's once the architects have understood the material, so it's a two way requirement.

We really have to think seriously about the way we live. As the wonderful Gretha Thundburg said, "I want you to panic!"

Steve Allin pioneered the International Hemp Building Association (IHBA), which he serves as director. An author, teacher and consultant on ecological building, he has been building with hemp and promoting hemp's use in construction all over the world for the last 20 years.

Help us create the truly green living space of the future.

We're looking for like-minded people and socially responsible companies who understand the need to restore the balance between man and nature, to change the way we build and consume energy, and in doing so help clean up the planet. We seek innovators interested in helping us prove the idea that hemp building materials and the latest energy systems can lead us to a more sustainable world, and who provide:

- **Regenerative energy based in solar collection**
- **Leading edge technology appliances**
- **'Smart' house management for systems efficiency**
- **Site design with permaculture principles**
- **Non-toxic and regenerative material furnishings**
- **Hemp based building materials**
- **Interactive space for community involvement and education**

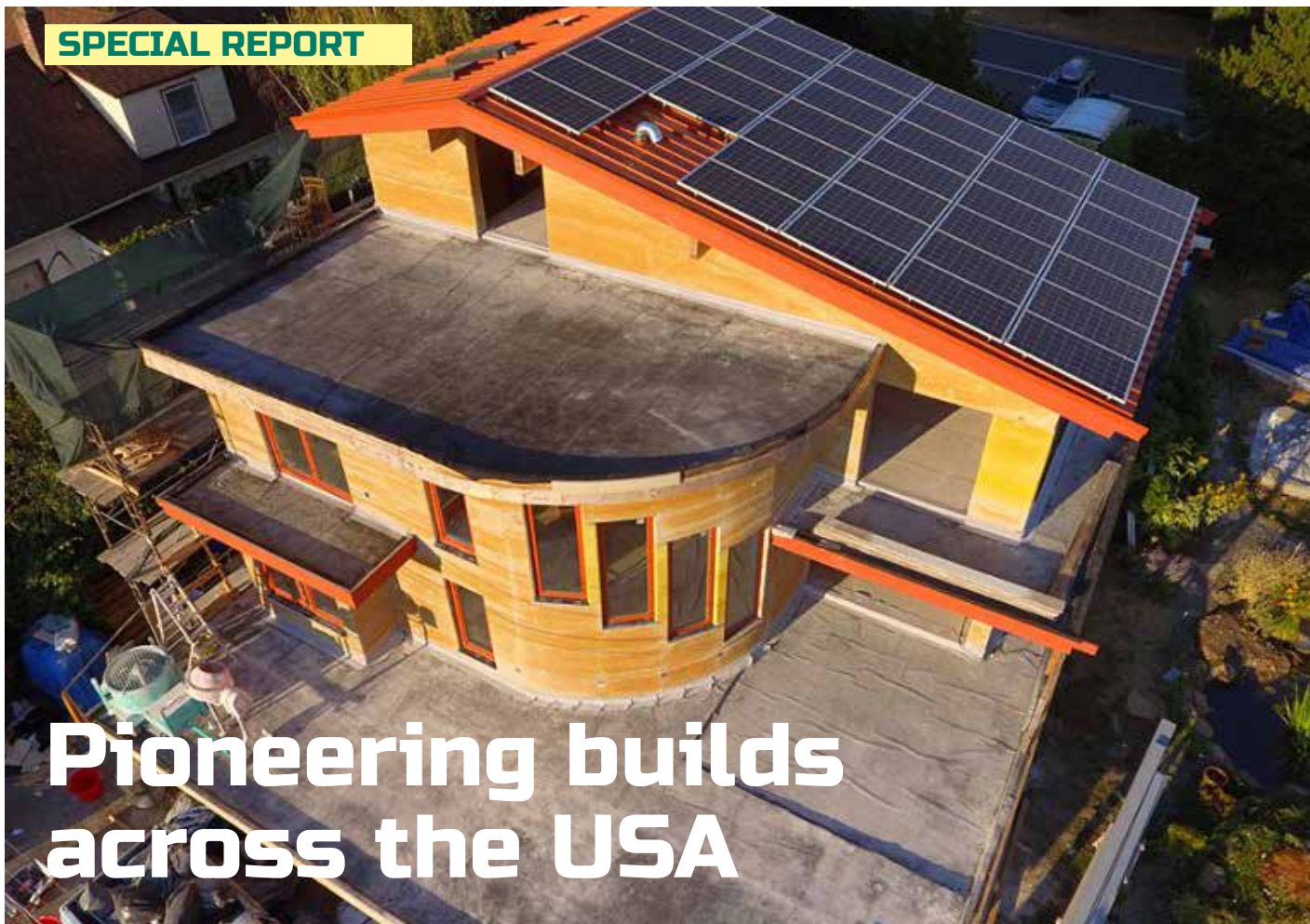
We also look for 'learning labor,' – enthusiastic people who want to learn about construction with hempcrete by participating in one of the world's most ambitious projects – to set standards for construction and retrofit of typical wood-frame homes with hempcrete.



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Pioneering builds across the USA

Highland Hemp House | Bellingham, Washington

Highland Hemp House, which completed a first phase this year, is a private build with a very public mission. The project encompasses both newly built walls as well as planned retrofitting of existing walls by stripping them down to the frames. Working with Hempitecture, HHH founder

Pamela Bosch self-financed this showcase project in Bellingham, Washington. She worked with local authorities to convince them about hemp's viability, successfully maneuvering through local building codes. During the first phase, Hempitecture, supported by local contractors, completed

about half of the landmark project remodeling the 1970s-era stick frame home, which also serves as a learning center for hempcrete construction. The project required import permits from the U.S. Drug Enforcement Administration for a shipment of hurd from supplier Dun Agro,

Holland. Wolf Jordan & Co, Belgium, supplied binder additive for the hempcrete. Challenging features of the build were a 2-story high south facade and a 3-story north wall 25 feet (7.62m) tall and 12 inches thick. Hempitecture used 2-foot forms to make a total of 12 layers.



First U.S. build | Asheville, N.C.

The first hempcrete house the U.S. with was built in Asheville, North Carolina in 2009, for Russ Martin, the city's ex-mayor. The 3,400 sq. ft. home's outer hemp infilled walls took 2 1/2 weeks to install. The house's total cost is \$133 per foot. The home was built by Hemp Technologies (now Hemp Tech Global).



WNDER Workshop | Denver, Colorado

Eric McKee's WNDER workshop was the first permitted hempcrete structure built in Denver. It was designed by architect Bob Escher, AIA and built by Left Hand Hemp with framing by Mark Cover.



Clayton Home | Tarpon Springs, Florida

Built in 2014 by long-time cannabis veteran Bob Clayton, the 3-bedroom, two-bath house has 1,532 sq. ft. of living space, with a porch and garage that bring the total floor plan to 2,290 sq. ft. Clayton imported about \$65,000 worth of hemp shiv and binder from England.



CFV Tiny Hemp Home | Austin, TX

Spearheaded by Henry Valles and designed by Cody Gatlin, this hempcrete home was built within Community First! Village, which is a 51-acre master planned community that provides affordable, permanent housing and a support for men and women coming out of chronic homelessness. Hemp Shield was also used to seal all the cedar.



Borah Basin Building | Mackay, Idaho

Designed by Mattie Mead of Hempitecture, this project was completed in 2014. The building is of 75 percent recycled material and sits on 13 acres of land along the the Big Lost River. Idaho Base Camp, a nonprofit organization, raised \$750,000 for the retreat facility.



Family Home | Sebastopol, CA

The floors, walls and roof are all insulated with hemp and lime in this family dwelling by Hemp Tech Global. HTG consulted, supplied materials and ran onsite hemp building workshops for this eco-friendly hemp build in Northern California.



Pine Ridge Reservation | South Dakota

The first Hempcrete project began on the Pine Ridge Reservation April 29th, 2000. Three types of hempcrete blocks imported from Europe were used to create the exterior of a home being built for Ernest Afraid of the Bear, a spiritual leader and Sioux elder.



The Abby | Berthoud, Colorado

Built by John Patterson, Tiny Hemp Houses, The Abby's interior is under 120 square feet and thus no building permit was needed. The building features passive solar design, 6" thick monolithic exterior walls; natural lime plasters and paints without any additives; re-purposed materials; reclaimed windows and doors, and an extra-insulated foundation with hempcrete.

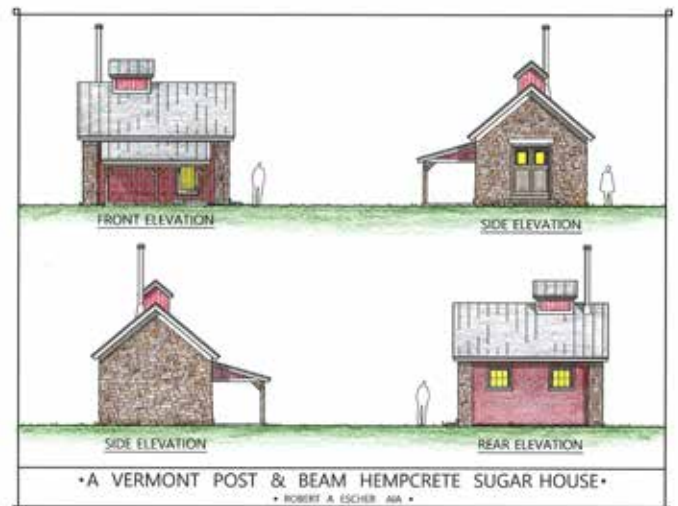
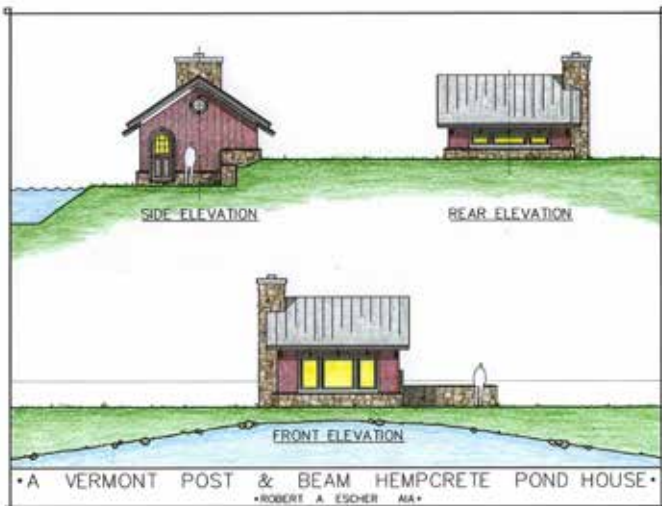
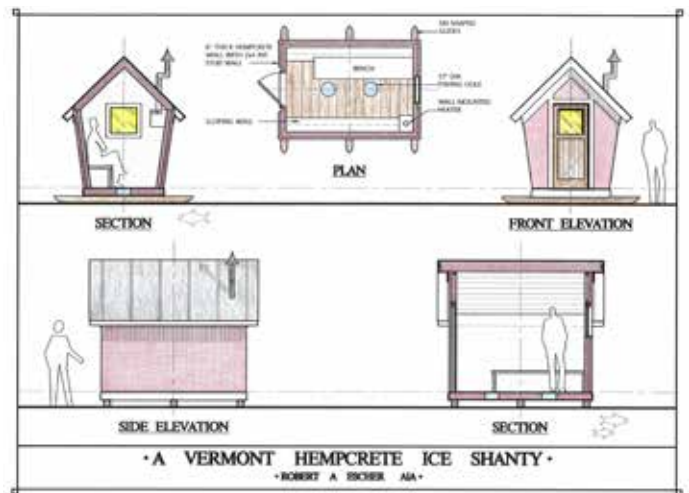
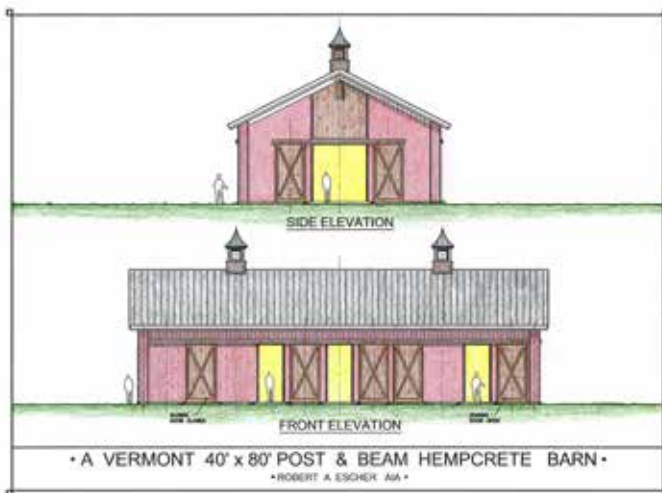
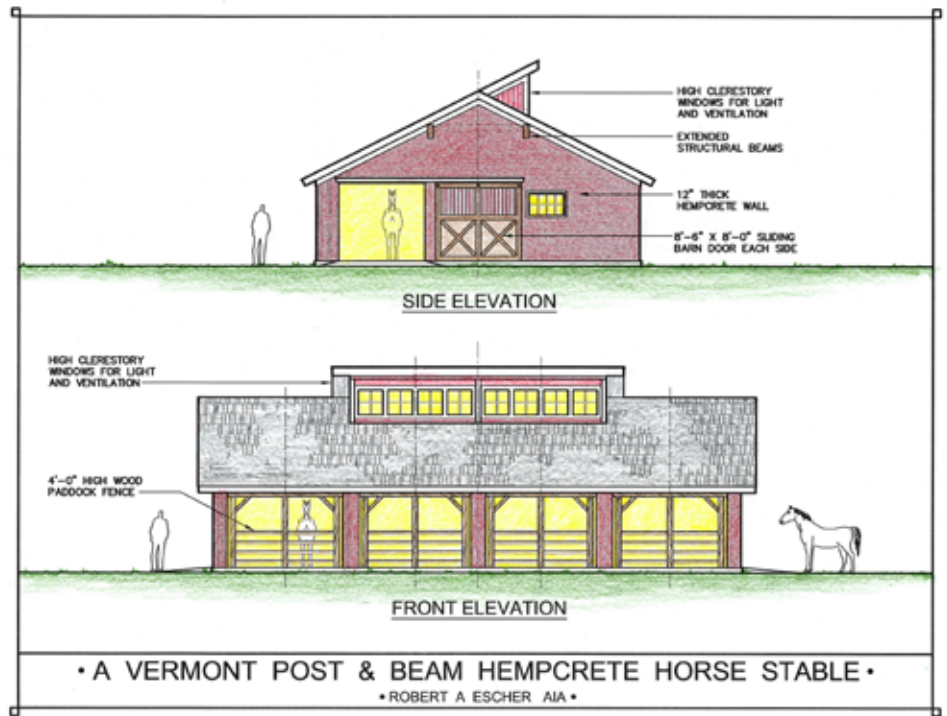
Solar Living Institute | Hopland, California



Spiral in shape, this project was fully financed by Hempire USA. It was one of Ukraine-based Hempire's first projects in the USA, and incorporated American hemp combined with Hempire's all-natural binder "Fifth Element," which was also produced locally.

Small, functional & truly green

Vermont architect Bob Escher, AIA, has created a design portfolio of small functional hempcrete buildings in order to prove to politicians, zoning administrators and the construction industry that hemp should no longer be defined as an "alternative material." Building these small structures will not only create demand for farmers to grow hemp, but it will also spur the investment to build the processing infrastructure needed to get the harvested plant to market. These designs have been used for presentations to the Vermont Governor and members of the state legislature. Escher's message to them was clear. We are building an industry based on the fact that any construction product that is made from petroleum, cellulose or cotton, can and will be made from hemp. That is why hemp is going to change the construction industry. That is why hemp is the material the green industry has been waiting for.





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Rolling: A hemp house on wheels

This grand hemp experiment of building the world's first hemp house on wheels, took less than two weeks planning by a world gathering of top hemp construction builders: Sergiy Kovalenkov of Hempire from Ukraine, Steven Clarke of Heaven-grown from Mexico, and Joy Beckerman of HempAce International from New York.

Built in 3 days, the structure was moved across the city of San Diego three hours after the last pour and tamping of the hempcrete mixture.

This community effort was funded by a hemp fanatic (me!) for the Cannabis Village at EarthDay in San Diego's Balboa Park in April 2017.

At the 2018 event, we unsuccessfully tried to burn down the house with fire from a torch. Two years after being constructed, this hemp house classroom was moved an hour on the freeway at over 55 mph, with no pieces falling off. That's grand testimony to the fire and earthquake resistance of hempcrete, the two greatest physical threats to life in California and many places.

— Dion Markgraaff





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Course Leaders



Sergiy Kovalenkov
Hempire, Kiev, Ukraine



Bob Escher
Escher Design, Vermont, USA
U.S. Hemp Building Association

Rich content: Early mornings are spent in seminar sessions leading directly to hands-on participation in an exclusive, unique, on-site hemp construction project. We wrap things up with a session during which we explore specific matchmaking opportunities among the 25 participants.

Unique hands-on project: This session's hands-on project is the construction of interior walls to create guest rooms in the attic of the Palace at Naklo, an 18th century estate that serves as the home of HempToday Center and a functioning Hemp Bed & Breakfast. This unique initiative is based on an architectural plan to add six rooms and an apartment in open space that, through nearly 250 years, was never inhabited.

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Grant Avon (right), Avon & Co. Building Consultants Ltd, built the cottage in Wales



A solid, traditional Welsh bungalow

The Hemp Bungalow in the small Welsh town of Aberdare is a 1950s-style cottage which has the feeling of a home that has been in place for many years. Sitting solidly on its Welsh pennant sandstone plinth, my first impression of the modest home having a very established and peaceful feel was reinforced upon entry, even as the property was having the final finishing touches added by master builder Grant Avon, 41, of Avon & Co. Building Consultants Ltd.

Avon was briefed to design and build the three-bedroom, two-bathroom 87m² / 936 ft² house on a greenfield site by David Naydorf and Naydorf's son Leon. With a client seeking a quality build who was open to using environmentally friendly materials, and having had success with an experiment using hempcrete in his own home, Avon saw an opportunity to undertake what he describes as the first commercially available building in Wales constructed using hempcrete.

Meeting codes

The materials choice did not require Avon to give special consideration to the plumbing or electrical work, and the building has been constructed to meet the tough Welsh planning codes. According to the Architecture 2030 Project, hempcrete "...transmits humidity, is fireproof, deters insects and rodents, resists mold [and] has excellent acoustic performance", all of which are highly appealing qualities for any builder or homeowner. While preferring not to use any concrete, Avon was able to slightly offset the impact of the poured floor by using 160mm of Glapor recycled foamed glass gravel in the foundations, and fin-



Andi Lucas

ished with a combination of engineered bamboo, carpet and tile.

The level of care that has been taken with both the building method and materials choice is apparent. All timber joinery was custom made by Avon's father Nick in a factory workshop set-up in nearby Fernel-dale. The beautifully made wooden window frames with traditional brass fixtures and the galvanized gutters give The Hemp Bungalow a solid and traditional look. In keeping with the local aesthetic, the roof is recycled rubber 'eco-slate', and the lime-washed and rendered exterior along with the absence of synthetic materials adds to the feeling that this brand new home had been in situ for a long time.

Avon purchased the hemp-lime plaster from Ty-Mawr Lime Ltd (a supplier based in nearby Brecon) buying premixed 25kg bags of lime putty which was "...knocked up" with a bit of water before being mixed with the woody inner part of the hemp stalk, known as hurd. The hurd was sourced directly from a private farm in East Yorkshire owned by grower Nick Voase, with a retail cost sitting at around GBP£11 / USD\$13.50 for a 180-litre bag, and a French lime-based binder was used in the mix.

The client wanted a specific color scheme so a clay-based paint made by Earthborn was applied. Avon estimates this environmentally friendly, breathable paint

cost about 40% more than the least expensive products on the market. Following conventional wisdom that hempcrete cures best when the temperature range is between 5°C and sub-30°C or 40°F to sub-85°F, Avon noted that he believes other builders are also having success in cooler temperatures.

The hemp is insulation

It took nearly eight weeks before the walls were ready for plaster, and another three months for the plaster itself to fully dry. For tradespeople comfortable with plastering, Avon sees no reason why hempcrete can't become a much more commonly used material in both new builds and restoration work, especially in stone-built structures. While one challenge lay in finding appropriate indemnity insurance for the necessary 10-year warranty, this requirement was satisfied by describing the structure as a timber frame house with hempcrete insulation, which met the insurers' criteria and meant a policy could be secured.

As I seriously consider using hempcrete on my upcoming commercial property development projects, it is essential that I learn about the hempcrete-specific factors that should be considered when using this method rather than relying on more readily available and commonly used modern materials. I am fortunate to be able to meet builders like Avon and other passionate and skilled hempcrete advocates around the world who are so willing to share their knowledge of the process, as it means I am much more confident about making this ecologically sound choice going forward.

Andi Lucas is a freelance writer based in Australia

A decorticator for small growers & builders

The HurdMaster Micro Decorticator, a small-scale fiber processing unit designed by Industrial Hemp Latvia (IHL) founder and entrepreneur Kristaps Eglitis, is now in production and may be ordered.

The machine is designed for small-scale flower and seed growers who want to monetize leftover stems from their harvests, Eglitis said. It is intended for farms of 2-5 hectares (about 6-10 acres).

“We’re getting excellent hurds for hempcrete,” Eglitis told attendees at the Summit before demonstrating the sleek, boxy, stainless-steel unit, which is small enough to fit in a car. “We processed some fiber for hempcrete to insulate my own house which we’re now working on, and the hurds’ performance in the mix was excellent,” Eglitis said.

IHL said it will sell the first three machines from its initial production run to customers who purchase and donate a second machine to a worthy humanitarian project.

“We’ve identified some remarkable initiatives around the world where the HurdMaster can be of infinite value in providing shelter and jobs through hempcrete construction,” said Kristaps Eglitis, founder at IHL.

Inspiration: The HurdMaster was inspired in part by Eglitis’ research of a decorticator project started by Australian-Latvian Voldemars Cirulis, who built a much bigger machine while living in Australia in the early 2000s.

Eglitis designed the HurdMaster with help from a student at Latvian Technical University after intense research on decortiation technology.

He eventually bought the machine from Cirulis and studied its components and how it functions – research he said was critical in the design process.



The machine is small enough to fit in an SUV or pickup truck.



Specifications

Supply-220V / 1500W
Capacity: ~50kg/hr
Dimensions: 80cm X 80cm X 60cm
(~31" X 31" X 23")
Weight: 150kg/330 lbs

Key features

Compact, simple design
Easy to operate
Chain driven
Durable parts; stainless steel rollers
Adjustable to handle all sizes stalk
Minimal maintenance

Contact

info@hemptoday.net
+48 602 336 685

Engineering collaboration: Eglitis, who designs and builds metal interior features such as staircases, has worked in metal construction for more than 20 years.

He is collaborating with Peruza, a leading manufacturer of machinery for fish processing, developing engineering enhancements that will reduce the HurdMaster’s weight while boosting efficiency. While Eglitis is satisfied with hurd quality turned out by the machine, planned adjustments to improve the quality of technical fiber output are still being worked out, he said. Plans are in the works to build a bigger model decorticator as well, Eglitis said.

Just last month, Eglitis secured an EU grant he’ll use to build an engineering building, he said.

While Eglitis has now lost contact with Cirulis, 96, who is blind and infirm, he knows the old inventor would be proud. “Voldemars would be happy to see that his work has inspired me to move forward,” Eglitis said.

UK farming union urges growing hemp for construction

The UK’s National Farming Union (NFU) encourages British farmers to plant hemp for building materials in a new report that sets out a plan to make the agricultural sector carbon neutral by 2040.

The report, “Achieving Net Zero: Farming’s 2040 Goal,” urges farmers to grow hemp for the production of hurd (shivs) for hempcrete construction. Hemp absorbs CO2 as it grows in the field, and continues the absorption process even after its straw is chopped up and installed in walls made of a hemp, lime and water mixture for hempcrete.

Coordination required: “Bio-based materials in construction and industry could

deliver GHG savings of 0.5 MtCO2e/year,” NFU notes in the report. “This will also require the implementation of the Government’s Bioeconomy Strategy, as well as support from the Home Office and Ministry of Housing, Communities and Local Government for novel building and insulation materials.”

The report also recommends using farming bi-products such as methane to produce electricity, and planting more trees and hedgerows to increase carbon storage.

Speeding up progress: UK agricultural emissions have fallen by 16% overall since 1990, but there has been only “mod-

est progress” since 2011, the report says. British farms are responsible for around 10% of UK greenhouse gas emissions, but only 10% of that total is carbon dioxide, while 40% is nitrous oxide from things such as fertilizers, and 50% is methane from cows and sheep.

NFU said improving farm efficiency and land management, changing land use to capture more carbon, and boosting renewable energy are all keys to meeting the 2040 goal.

Land management and the slow pace at which UK hemp farming is developing were cited as sector disadvantages in a recent report from UK’s Centre for Medicinal Cannabis.

U.S. hemp fields quadruple

Passage of the Farm Bill opens market, but the sector still faces many challenges

An estimated 115,000-138,000 acres (46,000-56,000 ha) of hemp will be harvested in the USA this year, after farmers were licensed to grow 511,442 acres (207,000 ha) of the crop, according to a report from industry group Vote Hemp.

While that total area of licensed fields is four times the analog data for 2018, some farmers who are granted licenses choose not to plant, the group noted.

Vote Hemp's figures are based on an annual survey of state agriculture departments.

Citing trends in previous years, Vote Hemp estimated that 230,000 acres (93,000 ha) of hemp were planted, and predicted that only 50-60% of that will be harvested due to crop failure, non-compliant crops and other factors.

The massive increase in 2019 hemp fields comes following passage of the 2018 Farm Bill last December which essentially legalized hemp across the USA.

Other growth indicators

Also indicating the massive growth of the hemp industry in the United States, Vote Hemp reported:

State licenses to cultivate hemp were issued to 16,877 farmers and researchers, a 476% increase over 2018.

Thirteen U.S. states set up new hemp programs this year.

The total number of hemp states now stands at 46 as only Idaho, Mississippi, New Hampshire and South Dakota have yet to establish legal frameworks to establish hemp industry value chains.

By defining industrial hemp as distinct and removing barriers to its production, states are able to take advantage of federal hemp research and pilot programs outlined in the Farm Bill.

'Time to build infrastructure'

Under the provisions of the previous Farm Bill (2014), farmers had been able



to grow crops for limited hemp research programs only.

"Now that we have lifted federal prohibition on hemp farming, it's time to build the infrastructure and expand hemp cultivation and the market for hemp products across the country," said Eric Steenstra, President of Vote Hemp.

Noting "hemp processors are critical to the growth of the industry," the report also documents dramatic investments and growth in hemp processing facilities.

State licenses to grow hemp were issued to 16,877 farmers and researchers, a 476% increase over 2018.

States which license processors reported 2,880 processing licenses, an increase of 483% over 2018. But several key states including Colorado do not require licensing of processors so processing capacity is actually significantly higher, Vote Hemp noted.

Extraction processing grows

The growth of processing is largely for extraction, which "positions the hemp industry well to meet market demand for extracts," Vote Hemp said, "but more investment is needed for fiber and grain processing."

The new 2018 Farm Bill, signed into law Dec. 20, 2018, includes Section 10113 titled "Hemp Production," which removed hemp from the Controlled Substances Act, placing full federal regulatory authority of hemp with U.S. Department of Agriculture (USDA),

and allowing state departments of agriculture to submit hemp program plans for federal approval; such approval allows them to regulate hemp cultivation according to their individual state guidelines.

Removing roadblocks

The USDA is expected to release new federal regulations for hemp cultivation this fall as required by Section 10114 of the Farm Bill; states with approved plans can begin regulating hemp cultivation on their own starting in 2020.

In addition to defining hemp as cannabis that contains no more than 0.3% THC by dry weight, the 2018 Farm Bill asserts a "whole plant" definition of hemp, including plant extracts. It also removes roadblocks to the rapidly growing hemp industry in the U.S., notably by authorizing and encouraging access to federal research funding for hemp, and removing restrictions on banking, water rights, and other regulatory roadblocks the hemp industry currently faces. The bill also explicitly authorizes crop insurance for hemp.

The 46 states that have set legal frameworks for hemp in the USA are: Alabama, Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Hawaii, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Montana, Nebraska, Nevada, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, and Wyoming.

The sky is not falling on CBD

The sky is not falling. There's no fox in the henhouse. There's no blood in the water (yet).

However, there is no shortage of speculation taking place in the hemp industry these days. Whether you're a seasoned veteran or a fresh face to the hemp and cannabis industry, we're all facing the same type of risk right now. With the harvest season in the U.S. for the 2019 crop still not sorted out, everyone is wondering how the market will go.

Let's get one thing straight: Nobody knows all the answers and numbers. We're all making educated (and sometimes not so educated) assumptions about acreage, failures, yields, and percentages.

Here's what we do know: More than 400,000 acres in the U.S. were registered to grow hemp this year. Best estimates show that fewer than 150,000 were planted, but I think it's closer to 100-120,000. If every farmer knocks it out of the park on this acreage and it all ends up as isolate, we could have more than 4 million kilograms of CBD isolate on the market in the U.S. That's a lot of isolate! Or is it?

What we hear

Here are some of the assumptions and anecdotes that our companies are seeing and hearing in the industry that have me believing we are not heading into a dramatic surplus scenario:

Tens of millions of seeds sold this year ended up being bad genetics (non-feminized, inaccurate cannabinoid production, poor germination, etc). This often led to failure early in the season or will pose problems for many at the end of the season. Some of these farmers replanted, many experienced a loss.

Of the acreage that did get planted, many are dealing with small canopies as a result of late planting, poor genetics, or plant spacing strategy. This will mean low yields on those acres.

A concerning number of farmers still don't seem to know how they are getting their crops out of the field and dried. Many are crossing their fingers for a solution to present itself at the last minute. Mother nature could still do serious damage.

Up to 21% of acreage registered in 2019 was for truly industrial production, not high cannabinoid production, according to industry expert, Tim



Mike Leago

Gordon, of Functional Remedies and Bija Hemp. In addition to this, a small but growing percentage of the acreage planted is growing for CBG or alternative cannabinoid production/R&D.

One of the largest farming and processing companies in Kentucky has hit a roadblock in their expansion project and the effect is rippling to farmers and operators across the state. Many didn't plan on equipment or crews to get their crops harvested, dried, and processed.

According to the Oregon Department of Agriculture, farmers in the state were only able to plant about 60% of the acreage they registered on a statewide level. If this is happening in a mature market with ideal conditions this past spring and early summer, think about how bad it may have been in states new to commercial hemp and cannabis.

Real deals out there

Now on to some more positive notes: There are seemingly real deals out there right now that could take 10-20% of extractable material out of the marketplace to one buyer. (And don't be so sure that it's going into extraction vessels.) The point is, more and more material is being spoken for by existing brands and supply chains.

We're beginning to see new market segmentation occurring that is creating demand for premium hemp material. A growing segment of the industry seems to be planning on harvesting top flowers to sell into the smokable hemp market. When you consider that 5.5 trillion tobacco cigarettes were sold last year, it makes sense that this could be a large new category for the industry.

Stores like Whole Foods, Kroger, CVS, and Walgreens are expanding both their product offerings of CBD and the number of stores carrying them. You can't blame them when CBD has taken over as the best selling supplement in natural sales channel for 2018 and shows now sign of stopping according to the American Botanical Council.

According to the Brightfield Group,

CBD sales have grown seven-fold from 2018 to 2019, with more than half of this growth coming from big box retailers that have just started testing the waters on a small scale. We could be at just the beginning of this category boom, rather than the end as some others may believe.

Media matters

Facebook and Google have just started allowing the first CBD ads to begin running on their platforms. Topical products are the only ones currently allowed, but it's a start. Once these digital channels allow advertising, the online sales sector will go through the roof.

Just this past week, a historic bill was passed in the U.S. House of Representatives that will provide a safe harbor for banks and financial institutions in the U.S. working with hemp businesses if it passes in the Senate. Additionally, in Indiana, a federal court ruled that the ban on smokable hemp in the state was unconstitutional. Mitch McConnell recently pressed the FDA to, "issue a policy of enforcement discretion in regards to certain products containing CBD within 120 days. These victories for the industry and the plant continue to trend the same positive direction.

So yes, if half the U.S. population took 10mg daily of CBD, we would only need 600,000 kg of CBD to fill this need. And the U.S. could be on track to produce up to 4,000,000 kg of CBD if nothing goes wrong this season.

Stay on the flip side

But what if the increased supply influences the market to consume more CBD daily, and in more product forms and categories? Maybe consumers will be taking 100mg – 400mg daily. If that happens, we won't have nearly enough CBD to keep up with the demand.

But is it time to raise the alarm to everyone that we might be facing a shortage of CBD based on this speculation? Probably not.

Good luck farmers. Remain optimistic this harvest season. We're all in this together.

Mike Leago is the Founder and President of iHEMPx, and COO of High Grade Hemp Seed (HGH). iHEMPx was the first licensed and bonded hemp broker in the U.S. and has been connecting buyers and sellers since 2016.

A matter of history

Europeans develop a convincing case for extracts

It's 1420 at the Vatican, in the kitchen where meals are prepared for the current Pope, Martin V. The pontiff's chef pulls a hand-written recipe, ink on parchment, from a thick leather portfolio. It's a dish based on hemp flowers and leaves: "Boil, extract, add bread crumbs, cooked onion. Add slowly the (CBD-rich!) water, saffron and spices."

Jump forward to the 20th century, and there's a clear reference to extracts in food is expanded upon with the publication in 1475 of *De Honesta Voluptate Et Valetudine*, one of the world's oldest cookbooks in French, German and Italian translations. It includes a contemporary recipe for making CBD oil in which the decarboxylated flower extract was blended with nard oil, a traditional Indian essential oil.

Jump forward to the 20th century, and there's a clear reference to extracts in European food in the 1940s studies of Dr. Carlo Erba, who references extraction methods for, among other things, hemp flower extracts mixed with honey as a food substance.

What we know

Study European food history down to the details, and one thing becomes clear: There's nothing "novel" about hemp seeds, leaves, flowers and extracts in food. Cannabis in general, and hemp in particular have been consumed in Europe through the ages.

We don't know Pope Martin's eating habits or much about what people were eating in the 15th century, but one thing is clear: There's nothing novel about hemp in European food.

That's a fact the European Industrial Hemp Association (EIHA) is working hard to illustrate, hoping to reverse recent food rules changes that have the potential to hit the continent's hemp food players hard.

Language in rules affecting CBD and other hemp extracts, updated this past January in the European Commission's Novel Food Catalogue have sparked blowback by EIHA as the Association embarked on an intense research effort aimed at reversing the changes, later taking its documentation to the European Commission's Standing Committee Working Group on Plants, Animals, Food and Feed (PAFF) in March.

In a nutshell, the updated rules now require producers of hemp extracts used in food – including, importantly, CBD – to undergo stringent and costly registration requirements. The rules guide the Novel Food Catalogue, a listing of foods that were not



The Pope's Soup: Pope Martin V (1368–1431), whose Vatican chef thought hemp was so valuable as a food source that he wrote down a recipe using hemp flowers and leaves.

commonly eaten in the member states before 1997. The Catalogue is essentially a food safety mechanism, intended and invented to control new, genetically or synthetically designed food products before market entry – not to hinder products that have been consumed for ages.

Some stakeholders realized last year that changes in the Food Catalog (which officially took effect Jan. 20, 2019) were coming, and began filing registration paperwork.

That started what we might call a "cycle of compliance" in which producers who filed for Novel Food status were confirming their products should be thus categorized.

Other stakeholders have since argued the newly written rules could hurt Europe's chances in the exploding global hemp food marketplace where big players such as China, Canada, the United States and Switzerland are aggressively competing.

Warnings from EIHA

Calling for a reconsideration of the Catalogue update, EIHA warned the newly written rules will:

- Bring the "end of the internal (EU) market, creating a vacuum which will be filled by the grey market" as a Dutch study shows 54% of consumers are willing to buy CBD even if it should be deemed illegal.
- Lead to "loss of market control" and the risk that products that do not meet safety, labeling and other compliance standards.
- Mean the loss of jobs in hemp production, processing and sales.
- Cause loss of all the environmental benefits of cultivating hemp across the Union.

But how did the rules get changed in the first place? And who is responsible?

These are questions that can sometimes be difficult to answer given the confidential nature in which the Commission and Member States conduct the affairs of the Union. However, there's a hint of an answer in testimony delivered to the PAFF meeting in early March.

"Surely there is an industry out there that makes profits by having sick customers," EIHA Board Member Daniel Kruse, a 26-year veteran of the hemp business, told Commission and Member State representatives in prepared remarks. "There might be a conflict of interest," he noted dryly.

Kruse left it at that, reminding those assembled that "Our hemp industry, similar to the natural food and food supplements industry, makes profit by keeping customers healthy."

Certain Member States pushed for the changes. That much is clear. Which ones, for now, remains a mystery.

Time wasted

But the upshot is unnecessary short-term confusion, and precious time wasted by the switch from what was previously a "workable" framework for hemp foods to one that threatens the industry, according to Kruse.

"The situation before was not perfect," he said. "But the previous rules did not place CBD-bearing foods in the Novel Food Catalogue.

"In 1998, the commission ruled that food containing parts of the hemp plant was not novel food," according to Kruse. "Hemp leaves and flowers were not under Novel Foods Catalogue restrictions."

Those rules made CBD acceptable as a normal food ingredient under a logical guideline that products derived from hemp plants contain a level of CBD molecules no greater than those of the plant in the field.

"We were basically able to live with that," Kruse said.

To Kruse, one thing is apparent from the latest round of confusion over hemp foods in Europe: All EU member state delegates who serve on bodies responsible for food safety in Europe should have backgrounds in science, he suggested.

Nonetheless, they only need to understand one rather general fact: "Hemp flower has been farmed, processed and consumed in Europe for thousands of years. It is one of the oldest crops and vegetables of mankind," Kruse said.



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- Hemp Fibres
- Hemp Food Supplements
- Hemp Shivs
- Hemp Oil
- Hemp Seeds
- Hemp Cannabinoids

The European Industrial Hemp Association (EIHA)

EIHA was originally founded as an association of the members of the European hemp industry. Companies can only apply for Regular Membership. Only private persons (or NPO) can join as Associate Member. Founded in 2005, EIHA today has more than 150 members.

EIHA was founded to give industry a voice at the European Commission in Brussels. It has rapidly become a respected industry association that provides effective lobbying and serves as an information bank. The annual EIHA conference has become an attractive opportunity for members and visitors to meet, learn about developments and exchange views with their colleagues.

Join EIHA and support the Hemp Industry.

Regular membership is restricted to companies. Regular members are invited to join special workshops on CBD, THC and Fibres and they have exclusive access to important documents, e.g. statements from lawyers.

Each regular member has 10 votes or more depending on the turnover. Regular members are also member of several special interest groups (CBD, THC, Fibres, Shives). The membership fee is starting from 2,500 € for one year (turnover < 1 Mio. € in 2017) up to 10,000 € (turnover > 20 Mio € in 2017).

Associate membership: Any private person (or NPO) may become an associate member. Associate members may attend the annual EIHA meetings, having the right to speak, to make proposals and to vote. Each associate member has 1 vote. The membership fee for associate members is 350 € per year (or a larger voluntary contribution).

Apply now: www.eiha.org/membership-application

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Dominik Vogt
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“This highly efficient, clean-energy factory is our way of doubling down on our commitment to sustainability.”

Daniel Kruse, CEO, Hemp Factory.

Powered by the sun

Leading Euro consultant brings solar ‘Hemp Factory’ to life

Hemp Factory, a fully solar-powered food processing facility, has gone online in Borken, Germany near the German-Dutch border, Hemp Factory is the biggest hemp food manufacturer in Central Europe.

Development of the facility was guided by HempConsult GmbH, the Düsseldorf-based hemp industry advisory. HempConsult founder and CEO Daniel Kruse is also interim CEO at Hemp Factory.

Doubling down

“We all know hemp food can contribute to environmentally friendly and healthy nutrition for the growing world population,” said Kruse. “This highly efficient, clean-energy factory is our way of doubling down on our commitment to sustainability. It’s intended as an example to the hemp industry that we can be the leaders in shrinking our

carbon footprint.”

Hemp Factory produces hemp food-stuffs for the processing industry with a ratio of almost 100 % certified organic, and the remainder of conventional production.

Hemp Factory’s facilities include systems for cleaning and sterilization to produce sterilized whole hemp seeds; hulling technology for hulled or shelled hemp seeds; and in addition a milling and sieving operation for hemp protein and dietary fiber.

Careful quality control

Another production line turns out fodder, concentrated feed stuffs and fodder oil for the animal feed industry, and supplies livestock businesses with high-quality feed concentrates from by-products such as oil, oil cake and coarse meal.

With careful quality control, Hemp Factory offers comprehensive analysis;

continuous improvement of production standards; and certification under Organic, Kosher, Halal, HACCP and GMP+ standards. The plant’s quality management system is to be extended in the near future.

Impressive customer base

Hemp Factory’s no-emissions, cost optimized complex features a solar roof that provides electrical power for all facilities, production and heating. The plant optimizes waste separation, and the enterprise is using electric forklifts and electric vehicles in its transportation fleet.

Hemp Factory’s customers include well-known food and baked goods producers as well as leading wholesalers. The factory turns out a variety of bulk hemp food products for sister company Hempro International GmbH & Co. KG, which has been selling hemp foods for 16 years.

HempConsult





The facility is the biggest hemp food processor in Central Europe.



Among products turned out at the new processing facility **Top**: Hemp seeds being cleaned and separated. **Middle**: Hulled hemp seeds. **Bottom**: Hemp protein powder.



Ground floor view of the Hemp Factory production line.



Solar panels that power the facility



Hemp Factory is located at Borken, Germany near the Dutch border



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5 Challenges to CBD in Europe



Joscha Krauss

Joscha Krauss is CEO at MH medical hemp GmbH, Germany, which offers bulk Cannabidiol rich hemp extracts, CBD oils and CBD isolate to formulators and manufacturers around the world. Active worldwide in the areas of medicinal cannabis and CBD, he holds a Msc in ecology, and is a master class graduate at Dutch medicinal hemp producer Bedrocan, where he studied cannabis cultivation and cannabinoid extraction.

As the leader of industrial hemp's latter day revival starting in the 1990s, Europe now faces major challenges as a result of the advancement of the industry its pioneers helped bring back to life. As CBD emerged as the leading derivative of hemp, European companies again led the establishment of that important market. But now, we in Europe face a number of major challenges. Here are five of them:

1. Foreign competition

With passage of the U.S. Farm Bill legalizing hemp in the all important American market, the USA has now gone from being the world's biggest importer of hemp to being the leading global exporter – drastically reducing imports from European producers. Meanwhile, the European market has limits, and is already self-sufficient through local production.

Even in Europe, non-EU member Switzerland has more room to produce CBD as it works under a THC limit of a full 1.0% while EU Member States follow the recommended level of 0.2%. That means Switzerland can produce hemp strains with higher concentrations of CBD, an unfair (ca. 5 fold) advantage that allows Swiss producers to turn out higher yields while stockpiling their products.

Finally, there's China. While hemp is still limited to Yunnan Province, single farms there can measure up to 1,000 square kilometers. While there are trust issues with Chinese products, producers there are advancing with quality. The Chinese, and Asian nations generally also have no reservations about producing and formulating products with synthetic CBD.

2. Lack of transparency and quality

The media are replete with stories of dubious CBD products in which CBD and THC levels, when tested, do not match those advertised on the products. For example, 30 popular UK CBD tested showed that 38% of them were within 10% of the advertised CBD content and 38% had less than 50% of the advertised CBD content.

Furthermore, production pipelines span multiple countries. Hemp is cultivated in one country, while extraction takes place in another, lab testing in a third, and sales take place in yet another country. This contributes to a lack of transparency with regard to a product's source, who is responsible for its final quality, and what standards were followed in its production.

3. Novel Food: Recent changes to the EU's Novel Food Catalogue addressing hemp extracts (including CBD) threatens to disrupt the entire – and fast-growing – hemp food business throughout EU Member State markets. The Catalogue, essentially a food safety mechanism, defines Novel food as newly developed, innovative food, food produced using new technologies and production processes, and food traditionally eaten outside the EU.

Under the changes to the catalogue, all food and food supplements products containing hemp leaves or hemp extracts need to obtain a pre-marketing authorization in order to be placed on the market, a process that can take two years and cost as much as €300,000 per product -- costs that means only large operators and corporations can afford. That would leave out the small and medium enterprises which mainly make up the EU market today, the European Industrial Hemp Association, which is pushing back against the rules changes, has argued.

If Europe will not allow food business operators to fully exploit the plant, as a direct consequence the EU hemp sector will collapse in favor of other markets, such as U.S., Canada, Switzerland and China.

4. CosIng: Guidance under CosIng in Europe gives individual EU member states a framework to set national rules for cosmetics, setting down a list of approved cosmetic substances and ingredients. But recent changes to CosIng guidelines have cast a shadow over the CBD market by setting a distinction between CBD “derived from extract or tincture or resin of cannabis” and that which is “synthetically produced.” So it is still not completely clear in what circumstances CBD will be considered “prepared as an extract or tincture or resin of cannabis” and therefore illegal.

While the new entry regarding hemp extracts has not changed the situation dramatically, it clearly acknowledges that there are circumstances in which CBD may not be allowed on the market.

5. Consumer expectations vs. reality: While CBD offers patients the promise of being in control of their own health, and no longer feeling at the mercy of their physicians, due to the character of the substance and the myth surrounding Cannabis, consumers often have unrealistic expectations. With edgy sellers sitting on top of oversupply, some feed the public misinformation in order to push product in any way, shape or form.

Also, as consumer expectations become unattainable, it pushes CBD more and more into the pharmaceutical area, resulting in resentment for the industry as a whole.

Facing the challenges

That's a daunting list of challenges that will take concerted efforts by European stakeholders to overcome. As we work to knock down those barriers, we would be well advised to keep the consumer, and consumer safety at the forefront.

Just as Europe led hemp out of the forest of cannabis prohibition more than two decades ago, we can keep the market moving through collective action such as EIHA is doing through lobbying efforts in Brussels, and through individual EU Member State hemp initiatives. There's far too much on the line to stop now.



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Genetic diversity, and energy

Asia is well positioned to embrace hemp in an innovative and unique way, with stakeholders only beginning to capitalize on the rich genetic diversity of the hemp plant across the continent.

And innovation is happening in both big and small enterprises – among new-era stakeholders ranging from giant industrial consortia in China to nascent startups in India and beyond.

Many valuable traits, such as improved yields, improved fiber quality, improved seed oil/protein content, disease resistance and attractive cannabinoid profiles are already being discovered in Asian hemp.

These varieties are being grown because they are high-quality, high-yielding crops with a long history of cultivation, despite their more “colorful” cannabinoid profile.

Though the modern hemp value chain necessitates creating improved varieties, Asia’s historic varieties can easily be used to kick-start hemp industries across the continent, with native landraces offering the enticing potential for producing varieties well-adapted to local conditions and domestic production.

Collecting these varieties and establishing well-managed gene banks will be critical to conserving cannabis biodiversity and valuable traits as Asian industrial hemp revives its history and culture around the plant going forward.



Asia’s hemp potential will again be explored this year at the second annual Asian Hemp Summit to be held in Kathmandu, Nepal. Stakeholders from all over the world will convene Jan. 31-Feb. 1, 2020 to survey opportunities in Asia’s potential powerhouse hemp nations.

Moving fast in China: Despite its severe drug laws, Chinese authorities are turning a blind eye to some production areas so that the People’s Republic can rapidly become the world leader in hemp.

Through international partnerships and government programs, the Chinese are creating new hemp varieties with modern breeding and their extensive genetic resources, creating high-yield varieties that perform under a diverse array of conditions.

At the same time, Chinese hemp concerns are intensively researching cultivation, harvesting methods and equipment, and applications ranging from food to bio-plastics, nano-technology to building materials.

But China is also somewhat of a mystery. The Chinese hemp industry is notoriously secretive. If China is to better integrate itself into the industry globally, more transparency is called for.

Also, there are concerns over the use of genetically modified hemp seeds in China as well as the lack of intellectual property protection in the country, a endemic problem.

Despite those drawbacks, the exceptional knowledge and research within China could be beneficial for the wider hemp industry if meaningful collaborations can be arranged.

Determination in India: Indian stakeholders are determined to recover their country’s rich hemp history, and capitalize on the plant’s potential for economic development. But India needs to operate differently than other parts of the world. The abundance of raw materials offers real potential to develop rural economies in India, however the current difficulty in accessing raw materials was highlighted by a number of attendees.

In the process of legalization, India is at a place right now where the U.S. and Europe were couple of years ago – giving the country an opportunity to learn from their experiences setting frameworks for the industry. There’s also a vast gap in knowledge of the processes involved in bringing products to market. Investors in Indian hemp can see returns from ventures in cultivation, research and other fundamental areas initially.

Thailand is newest target for CBD players

Leading CBD players say they’ll move aggressively into Thailand after the country recently removed cannabis and hemp extracts from its narcotics list.

Pure CBD and CBD-based products with THC content of less than 0.2%, were stricken from the Thailand’s Category 5 narcotics schedule, regulators said. Hemp seed and oil are now also exempt from Category 5, under the changes.

Clear path for extracts: “The intention is to allow extracts to be used in medicine, cosmetics and food and support hemp as a cash crop,” said Tares Krassanairawiwong, Secretary-General of the Thai Food and Drug Administration.

The 0.2% THC threshold is more restrictive than the generally observed 0.3% THC limit observed in most parts of the world. Europe is still under that limit, but stakeholders are working to push the EU to raise the allowable level of THC to 0.3%. Australia and Uruguay allow a full 1% THC in hemp.

Among players who say they’ll invest in the sector are the Ganja Group, Bangkok, which said it is working to develop a CBD extraction operation to supply medical cannabis products to Megalife Sciences Pcl. Both companies are owned by the billionaire Shah family.

U.S. firm making moves: Colorado, U.S.-based CBD maker C-Beyond Health Inc. said in March it had received an investment from Hong Kong-based multi-national Triple Ten Ltd, and is now moving into Thailand as the regulatory environment has cleared.

CEO Scott Reese told HempToday this week that C-beyond Health established a Thai based company earlier in the year in anticipation of laws changing, and has already established infrastructure on 400 acres for hemp cultivation in the Chang Mi region.

“We will reach more healthcare professionals in Asia, open the market for innovative cannabinoid-based product lines, and build new relationships with the highest

levels of government in these markets,” Reese told HempToday at the time the deal with Triple Ten was announced.

And venture capital firm Expara said it is aiming to raise \$30 million by the end of the year to invest in cannabis-related technology in Thailand.

Some restrictions: The companies’ moves are despite the fact that licenses are not yet available for businesses under Thailand’s rather restrictive cannabis program. Only hospitals and research institutions may apply for licenses to develop medical cannabis extracts, meaning anyone wanting to do business in Thailand must pair up with such entities.

Also, cannabis production, cultivation and sale is limited to Thai producers for five years to protect the domestic industry. Some 334 permits have been issued so far, mainly to hospitals and health agencies.

Thailand delivered its first batch of 10,000 bottles of cannabis oil extract to patients through medical facilities last month.



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