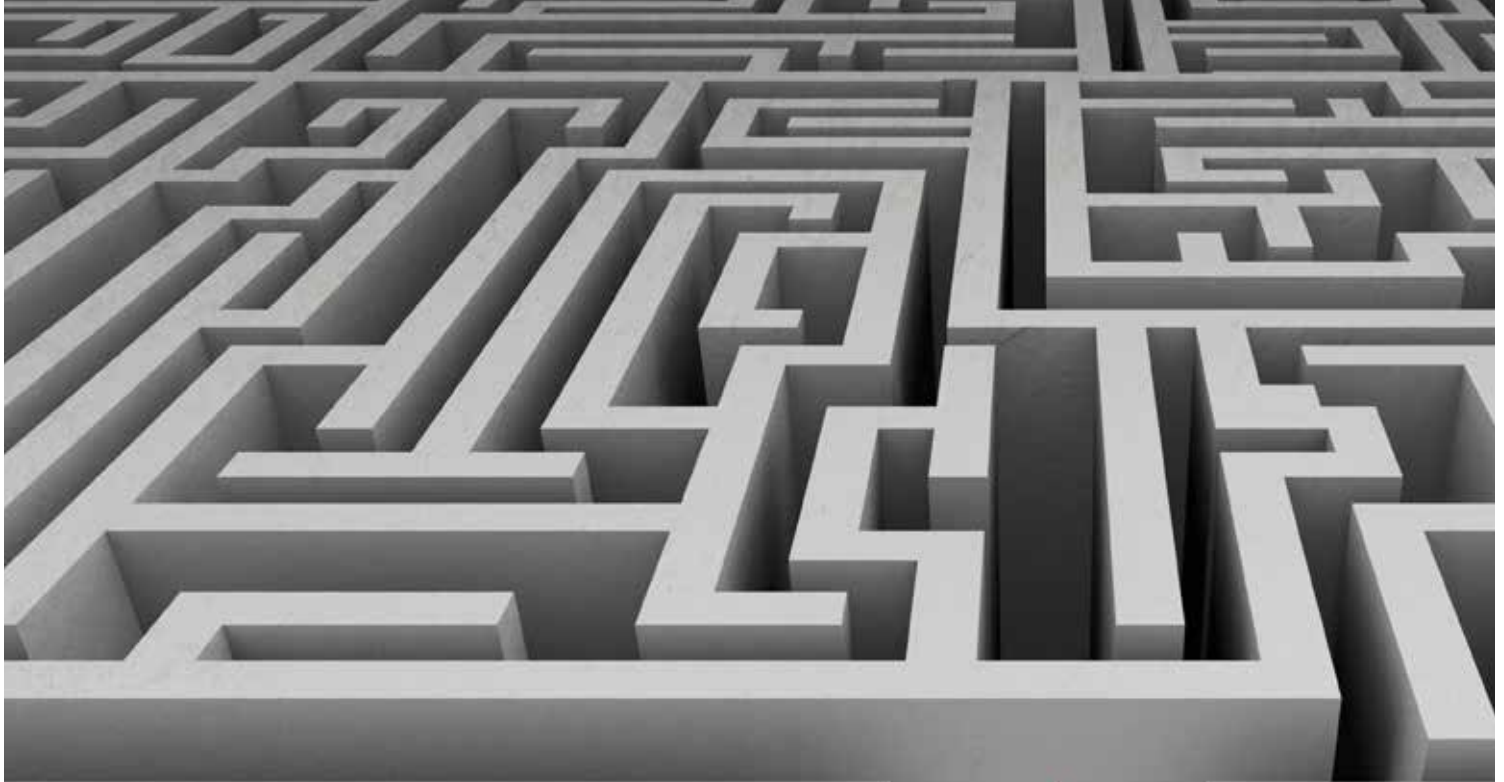




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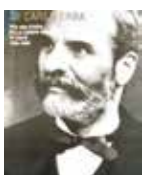
What now?



Passage of the U.S. Farm Bill opens the market, but many twists and turns are ahead for the industry

Montana breaks out

Vote Hemp's 2018 hemp crop report



FOOD FIGHT

Nothing novel about hemp food in Europe



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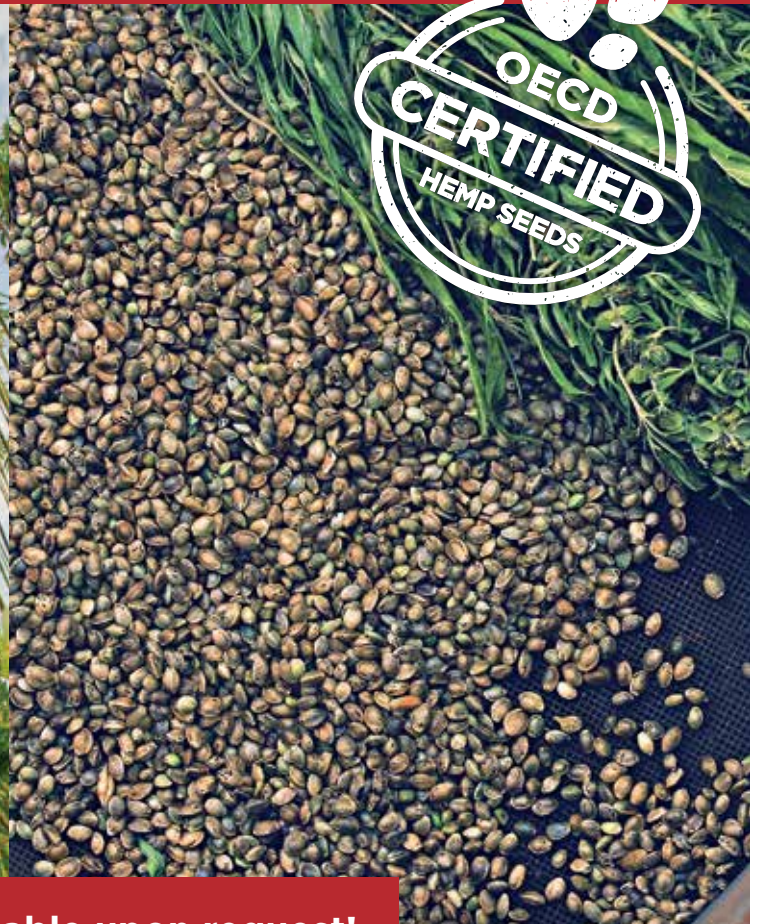
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What now?

The Farm Bill passed and hemp fields are growing, but a myriad of challenges still face U.S. hemp

By Karen Haywood Queen

As the euphoria brought on by passage of the U.S. Farm Bill begins to fade, American hemp stakeholders face the challenges of crafting and living with federal and state standards for cultivation and finished products. Some in the industry are eager to work with the U.S. Food & Drug Administration (FDA) to develop standards for hemp-based consumer products. Others threaten lawsuits.

Meanwhile, exponential growth, driven primarily by soaring demand for CBD, means many twists and turns ahead for hemp in the USA.

"In four years, we went from zero acres to almost 80,000 acres in hemp cultivation, said Robert Hoban, managing partner of Colorado-based Hoban Law Group. "That's pretty impressive for agriculture. The CBD industry is growing dramatically. I don't expect to see it slow down. I don't see the government putting the brakes on the industry at the federal level. But there are many challenges ahead...many."

The 2018 Farm Bill essentially legalized hemp by removing it from the Controlled Substances Act and out of the purview of the U.S. Drug Enforcement Agency (DEA), expanding the definition of industrial hemp, and categorizing hemp as an agricultural product. Moving forward, the USDA plans to have federal cultivation standards for hemp in time for the 2020 growing season.

Meantime, states can develop their own standards that meet USDA minimums and

submit those standards to the FDA, which must respond within 60 days, said Eric Steenstra, president of Vote Hemp, a lobbying group.

The 2018 farm bill also turns the clock back 30 years, in a good way, to when hemp was first being promoted as a super food, Hoban said.

"The door is cracked open for cannabinoid-enriched foods," Hoban said. "We're going to see more large-scale farms and more government policies and regulations. This is something that can and should exist."

As the industry works to shape the regulatory framework for hemp, here are the critical considerations:

Who is the regulator?

Hoban's firm believes the FDA is the logical regulator. He also cites the importance of a seat at the FDA's table.

"We don't have a choice," Hoban said. "People complain that no one gave the regulatory authority to the FDA. The FDA already has authority over all products that go into human beings on a mass scale. Regulation is something that needs to be embraced by a new industry—not revolted against. If you embrace regulation, it becomes mainstream. We want these products to be available for people's well-being."

Instead of fighting the FDA, "We talk to the FDA every week," Hoban said. "We're intimately involved in crafting what the FDA is doing."

The FDA does have the experience and the power to establish and enforce regulations, said hemp food veteran Richard Rose,

a product developer and consultant. "They already are regulating it; it's in their wheelhouse and they have fines and jail backing them up," he said.

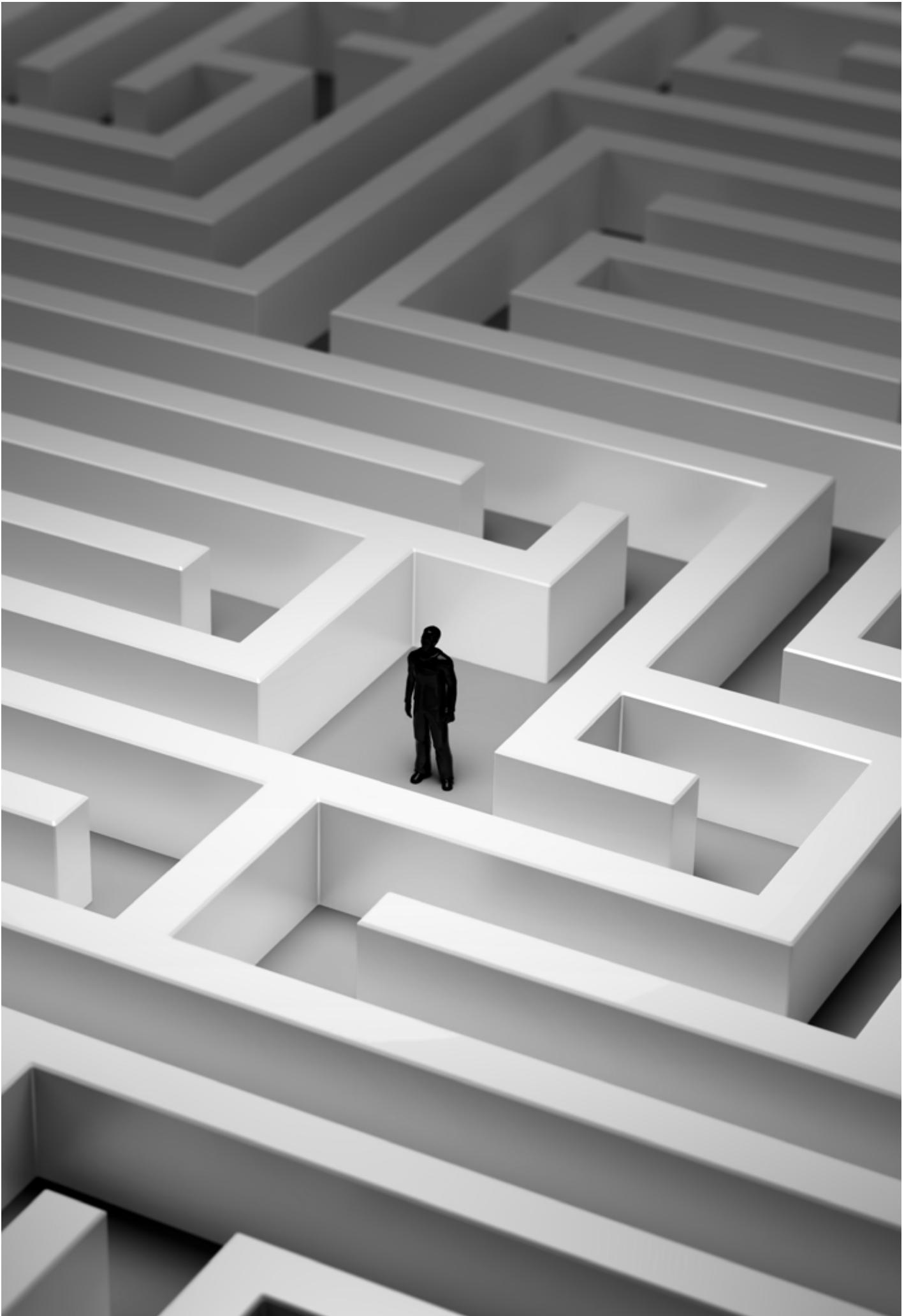
But the agency is not well-suited to set standards for CBD and hemp because of its "long demonization of cannabis and the fact that for medicinal products, they prefer a one- or two-molecule approach, which is directly contrary to the cannabis industry's molecule approach," Rose said. "The way the FDA views appropriate products and the way the industry views appropriate products are diametrically opposed. It's two trains heading at each other and I don't think the FDA will win this one. Science is not on their side."

The FDA is qualified only to regulate the accuracy of labeling—whether a product contains the amount of CBD claimed on the label, said Rick Trojan, founder of Hemp Road Trip, vice president of the Hemp Industries Association (HIA) and director of Colorado HIA. Beyond that, the FDA is not the correct entity to develop and enforce standards, Trojan said.

"The FDA has no understanding of cannabis, is blind to the situation and can't create regulations," Trojan said. "Any FDA standards are going to be insufficient and inaccurate. While the FDA is the regulating authority for pharmaceuticals, it shouldn't be the regulatory authority for cannabis."

Slow pace of the FDA

Beyond the recent approval of Epidiolex as a treatment for children with epilepsy, it could take years before the



COVER STORY: USA

FDA has regulations and classifications for other CBD products claiming therapeutic benefits.

“The FDA is very slow,” Steenstra said. “They’re going to look at this in a slow, methodical, scientific process. It’s going to be a long time before they finish.”

Some standards that have been put forward are inadequate. “U.S. Hemp Roundtable’s proposed standards are quite weak, basically just AHPA’s (American Herbal Products Association) but rushed to the market without sufficient vetting or industry input,” Rose said. “Everybody seems to have a set of standards. At the end of the day, it will be a marketing problem more than a technological one: who will the people believe?”

Legality of CBD

“There is no absence of standards,” Rose said. “The FDA already regulates (CBD) as a food or dietary supplement. The biggest problem is the perception there is a lack of regulations as well as the perception that CBD is not fully legal.”

“We’re facing a lot of challenges because the FDA has taken a position at the federal level that you can’t sell CBD as a dietary supplement,” Steenstra said.

New standards unnecessary

Consumable hemp should be regulated like other foods and supplements—no new standards are needed anyway.

“We’ve convinced the FDA they need to regulate these products like any other food or supplement,” Hoban said. “You don’t need to create new standards for industrial hemp.”

“The FDA has been regulating dietary supplements for some time,” Steenstra said. “Hemp fits in like any other herbal. Companies should be meeting FDA standards. We just want hemp to be treated like any other supplement. We don’t need to reinvent the wheel here.”

Lawsuit against FDA inevitable

“The reality is: we’re going to have to sue the FDA,” Trojan said. “HIA sued the DEA three times and won two times out of three. One of our members will take the lead and we’ll support it on the back end.”

States should seize initiative,

Some states are moving ahead, Steenstra said, but many states are waiting for federal regulations. “The USDA told us a few weeks ago that they had already received three state

plans and at least one tribal plan to regulate hemp,” he said. “Someone from another state (that he declined to name) told me that they weren’t waiting on the USDA 60-day approval process, he said.

“It’s an exciting time and an exciting opportunity. But states can’t sit back and wait for the federal government to solve their problems,” Hoban said. “States don’t understand that they can use their agencies that are the equivalent of the USDA to make sure products are standardized. The states need to take the lead. Colorado stepped up and did it.”

Ironically, many conservative states that normally don’t want federal government oversight are, in this case, waiting for federal-level answers, Hoban said.

Standardized seed testing

Agricultural testing of hemp needs to be standardized. “From a farming perspective, there are problems with testing the plant material,” Hoban said. “Do you homogenize the content over the entire plant or do you simply test the flowers?”

Moving forward, “There’s a lot of pent up excitement about hemp and people want to move forward,” Steenstra said. “You’re going to see lots of hemp grown this year.”

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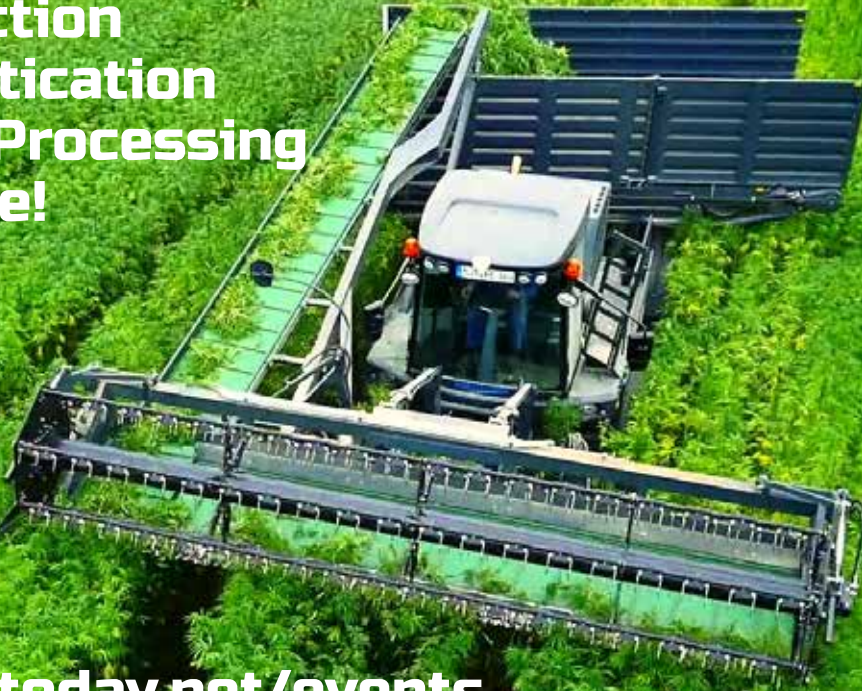
  

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USA jumps to No. 3 globally

The USA has jumped into the top ranks of global hemp growing nations, recording a tripling of land under hemp to reach a total 78,176 acres (about 31,000 hectares) in 2018, according to the American hemp advocacy group Vote Hemp. Vote Hemp had recorded about 25,000 acres of hemp fields across the USA in 2017. Twenty-three states grew hemp in 2018, Vote Hemp said.

Globally, that puts the USA third, behind world leader China (400,000 acres/162,000 ha.) and northern neighbor Canada (100,000 acres/40,000 ha.), and is nearly double the land sown for hemp in France (42,000 acres/17,000 ha.), Europe's leading hemp grower. Only about 110,000 acres (44,000 ha.) of hemp were grown across all of Europe in 2017, the year for which the most recent figures are available.

Montana expands fast

The rapid expansion of hemp fields in the USA last year was driven primarily by anticipated passage of the U.S. Farm Bill, which removed hemp from the U.S. narcotics list. The Bill became law in late December. Strong demand for CBD was a major contributing factor in the growth of U.S. fields.

Internally in the U.S., Montana recorded the most fields under hemp last year with 22,000 acres (about 9,000 ha.), a drastic increase over the 542 acres (219 ha.) sown in 2017. Montana eclipsed perennial hemp leader Colorado, which was the second biggest grower in the USA last year with 21,578 acres (8,700 ha.), Vote Hemp reported.

State licenses to cultivate hemp were issued to 3,544 farmers and researchers; and 40 universities conducted research on the crop, more than double the number of licenses issued in 2017.

The new 2018 Farm Bill, signed into law last December includes a section on "Hemp Production" that removed hemp from the Controlled Substances Act, placing full federal regulatory authority of hemp with the U.S. Department of Agriculture, and allowing individual state agriculture departments to submit hemp program plans for approval. The states regulate hemp production.

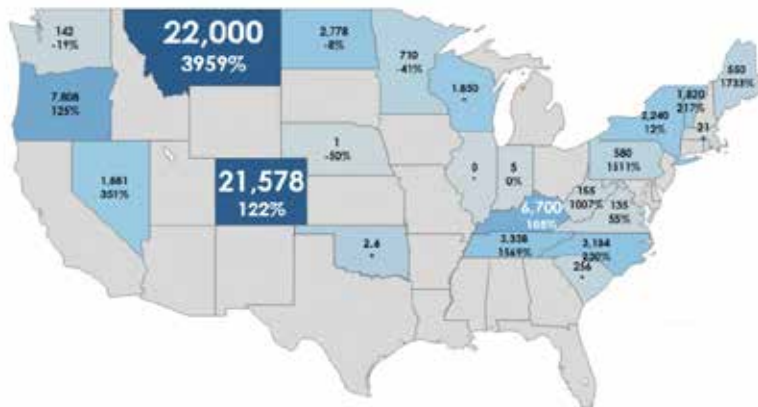
'Whole plant' definition

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 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.

Biggest hemp growers

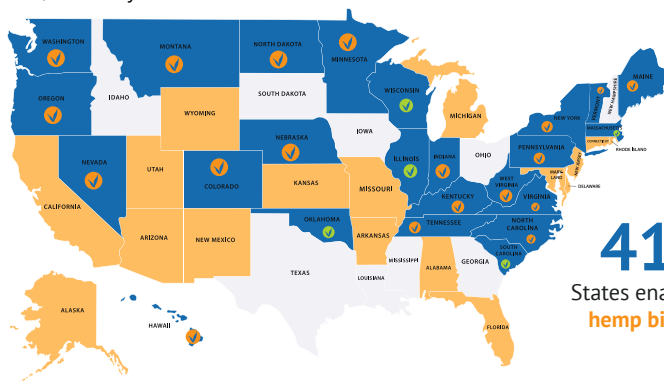
Montana surpassed Colorado last year as the biggest hemp growing state in the USA. They are followed by No. 3 Kentucky. Acres and year-on-year growth in %.



41 STATES ARE ACTIVE: have defined industrial hemp as distinct and removed barriers to its production: Alabama, Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Hawaii, Illinois, Indiana, Kansas, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Montana, Nebraska, Nevada, New Jersey, New Mexico, New York, North Carolina, North Dakota, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, and Wyoming.

Crop report

Hemp fields, state by state in the USA



41
States enacted
hemp bills

- New states which started in 2018 (5 states)
- States which grew hemp in 2017 (19 states)
- States with enacted hemp legislation (41 states)

78,176
Acres of hemp grown in 23 states

40
Universities conducted research

3,546
State licenses issued

State	2017 Acres	2018 Acres
Colorado	9,700	21,578
Hawaii	1	2
Illinois	N/A	0.1
Indiana	5	5
Kentucky	3,271	6,700
Maine	30	550
Massachusetts	N/A	21
Minnesota	1,205	710
Montana	542	22,000
Nebraska	1	0.5
Nevada	417	1,881
New York	2,000	2,240
North Carolina	965	3,184
North Dakota	3,020	2,778
Oklahoma	N/A	445
Oregon	3,469	7,808
Pennsylvania	36	580
South Carolina	N/A	256
Tennessee	200	3,338
Vermont	575	1,820
Virginia	87	135
Washington	175	142
West Virginia	14	155
Wisconsin	N/A	1,850
Total	25,713	78,176*

*Includes 10,090,188 square feet of greenhouse or indoor cultivation

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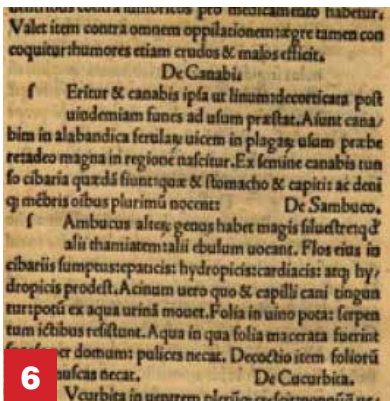
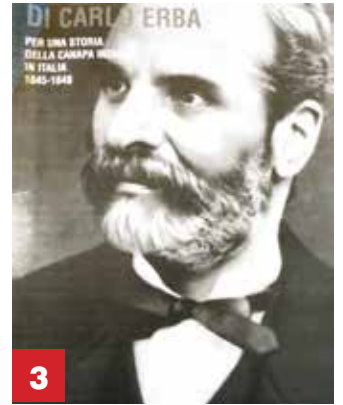
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History of Hemp Food in Europe: Among the historical references to hemp food the EIHA provided the European Commission: **1.** Inscription on the Tower of Escape, Bologna, Italy: “Cannabis is Protection,” anno 1220. **2.** Italian recipe from 1884 cookbook: Tortelli with hemp flowers. **3.** Di Carlo Erba, whose studies on hemp extract were published between 1945-1948. **4.** It is documented that medieval monks used hemp in dishes, including a hemp soup. **5.** Hemp is also found in Polish kitchens throughout history, and has continually been served as a holiday dish. **6.** Citations from one of the oldest Italian cookbooks De Honesta Voluptate Et Valetudine, published in 1475. **7.** Swedish advertising for hemp extract. (undated). **8.** Catalog of the World Exhibition in Antwerp, Belgium 1894 in which hemp is mentioned as a food industry.

Food fight at the EU

Artifacts show hemp foods run deep in European history

As European hemp food stakeholders have taken up the battle to reverse recent changes to EU rules on hemp extracts, the whole furor begs a question: How did regulations that producers earlier described as “workable,” transform into an added headache that the industry doesn’t need?

In a nutshell, the updated rules now require EU producers of hemp extracts used in food – including, importantly, CBD – to undergo stringent and costly registration requirements; the rules guide the EU’s Novel Food Catalogue, a listing of foods that were not commonly eaten in the member states before 1997. The Catalogue is essentially a food safety mechanism, created to control new, genetically or synthetically designed food products before market entry – not to hinder products that have been consumed for ages..

Novel food can be newly developed, innovative food, food produced using new technologies and production processes, and food traditionally eaten outside the EU.

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.

‘Cycle of compliance’

That started 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 are wrong, and could disrupt the entire European hemp food business, hurting 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.

The European Industrial Hemp Association (EIHA) has led pushback against the new language, with Association representatives coming away hopeful after a recent presentation to the EC’s Standing Committee Working Group on Plants, Animals, Food and Feed (PAFF).

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 CBDs it even if they are illegal.
- Lead to “loss of market control” and the

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EUROPE

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 we're back to asking: 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.

Who profits off the sick?

"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.

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. (saying "all should have" is different from saying "nobody has now")

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 of mankind," Kruse said. "There's absolutely nothing 'novel' about it."

During the March 12 session, however, EIHA rebutted that argument, for starters citing a Nova Institute survey (1997) ordered by the EU Commission in which 23 companies from across Europe reported a total of more than 255 tons of hemp-based foods as having been produced before 1997. Those products obviously contained CBD, the EIHA contends.

Kruse, who also addressed the PAFF session, said the committee was "very open, very positive."

"They were impressed by the evidence we brought to them. It's clear they understand that the Member States will have to reconsider this matter," said Kruse, CEO at Hempro Int. GmbH & Co. KG, and HempConsult GmbH, both of Dusseldorf.

Hemp soup for the Pope

EIHA presented specific examples from historical sources in Germany, Italy, Poland, Slovakia and Sweden showing that CBD-laden hemp has been consumed on the continent for centuries – even citing a recipe for a hemp dish from the Vatican chef during the Papacy of Pope Martin V in the early 15th century.



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ASIA

CHINA

With government backing, big industrial firms are moving quickly into every aspect of hemp

The development of the Chinese hemp market will no doubt be significant for the industry globally. While little is known about the world's biggest hemp producer, glimpses of what's being done are tantalizing.

By far the world's leading hemp nation, China has the biggest hemp growing fields of any contiguous market in the world. Chinese authorities earlier this decade rolled out a great plan to plant hemp on 1,333,333 ha. to produce 2,000,000 tons of fibres – and that's only to feed the country's textile mills, which primarily turn out exports. But other sectors – food, medical, cosmetics – are also in rapid buildup while research expands as big industrial players enter the industry.

Giant Chinese concerns are expanding into industrial hemp, with activities ranging from farming, processing and extraction of CBD, and everything else hemp — from low tech to high. All have aggressive R&D programs that are probing the outer limits of what can be done with the plant.

Clear push for hemp

Several Chinese hemp companies are operated by the biggest investment companies in China, and while worldwide awareness of those companies remains low, the country's move toward hemp is clear.

Some 300 companies participated in an International Conference on the hemp industry in Harbin this past autumn, with significant interest focused on the CBD market. Currently, non-psychoactive cannabinoids in China are legalized, and CBD crystals and water-soluble CBDs are on sale.

China continues to expand its current CBD legal framework to tap into a market expected to grow into a 100-billion-yuan (\$14 billion) industry for China in five years' time.

Meanwhile, the number of Chinese companies extracting CBD from leaves and blossom grows continuously. In some states of China, CBD is produced officially, in others it is illegal.

Aside from its land mass, huge and inexpensive work force and a massive domestic market, China is geographically positioned to take advantage of the nearby export markets of Japan, Korea, India and Australia, where demand grows for hemp food, cosmetics and health products.

As Heilongjiang Province, China's hemp epicenter, vastly ramped up its hemp farming in recent years, researchers are intensely looking into applications for pharmaceuticals and foods along with the traditional focus on textiles.

China holds over 600 patents on cannabis applications — for the plant itself, processing, textiles, food, oil, paper manufacturing and medicine, among others. That's well over half all patents for hemp registered worldwide – a clear indicator that forward-thinking firms see hemp's potential in China and around the world. China's rate of evolution will outpace such developments in the West.

While imports to China are technically legal, doing business of any kind in China is never easy; first movers will be the ones to cash in on CBD opportunities.

The Chinese also see hemp as a rational replacement for the country's cotton growing and processing industry as it addresses the environmental impact of cotton — water shortages, soil salinization and pollution from pesticides. As Chinese cotton grows less and less competitive worldwide, the Chinese see hemp as a logical, environmentally friendly substitute.

To advance the transition, new processing technology and methods are being developed to gain fine hemp fibers. Chinese experts have worked out a process using enzymes in the development of those fibers that makes them suitable for processing by the country's vast cotton processing infrastructure to produce pure hemp fabric and blends – all the while going easy on the environment.

Food, oils, bio-plastics

Beyond medical and textile applications, Chinese hemp stakeholders are also looking at expanded use of the plant by

moving into such sectors as food, hemp oils and bio-plastics.

The Chinese also see a fast-growing market in hemp oil-based cosmetics. Valuable skin caring substances in hemp oil make it an ideal, natural ingredient in a wide variety of excellent cosmetic products – cremes, body lotions, bubble baths, shower gels and massage oils.

And they've noticed the small but growing potential in hemp-fibre-based composites such as plastic and fiberglass, applications which are being explored in the auto and construction industries. The Chinese are already using a rougher variant of the hemp fibre to produce lightweight pre-formed doors and shelves.

Technology advances

With labor costs rising, the Chinese realize they need to develop more efficient machines to replace hand sowing and harvesting and to speed up the decortication processes, which now are slow and wasteful. To address those needs Universities from Heilongjiang Province, Ukraine and Canada are conducting comprehensive research to develop new hemp varieties, more versatile and efficient harvesters and new technologies to generate fine hemp fibers, seeds and flowers.

Adding to those challenges is the need to develop cultivars and cultivation practices that maximize yields across the vast country's various climatic and soil regions. More high-quality, high-efficiency hemp strains need to be developed and introduced into the market in an improved and expanded lineup of seed varieties.

Strong investor interest

All this has attracted the attention of investors who are welcomed by Chinese stakeholders. At the conference in Harbin last autumn, delegates from China, Australia, Europe and Canada presented success stories from all over the world and discussed future production and marketing strategies for even more and better hemp products.

Heilongjiang Province particularly is on an aggressive track as it continually searches for partners in Europe and North America – with wide potential for various forms of cooperation. The province has the resources to start an up-to-date hemp industry and offers subsidies as well as an outstanding infrastructure.

For the investor, it's important to note that Chinese regulations differentiate marijuana and industrial hemp directly in the field by the scientific distinguishing criterion of 0.3% THC. That's important because as China begins to meet the demand for hemp products it can push the establishment of the 0.3% or higher THC levels in Europe and other markets around the world.

ASIA

INDIA

Investors see an entrepreneurial class rapidly developing



When Tata, the Indian industrial giant, provided seed capital of \$1 million to Mumbai-based Bombay Hemp Company, (BOHECO) in late 2017, it sent an important signal.

While the investment was relatively small, the move made it clear that Indian investors had caught wind of the new hemp revolution that's quickly spreading around the world.

Fast-forward two years, and it's clear Indian stakeholders are determined to recover their country's rich hemp rich history, and capitalize on the plant's potential for economic development.

The most recent signal of that came in late 2018 when the Indian Industrial Hemp Association announced a Rs 1,100 crores (about \$150 million) investment aimed at expanding hemp cultivation, research, and other initiatives in the northern state of Uttarakhand.

Waking up to the revolution

Like everywhere else in the hemp universe, Indian enterprises expect the first major development will be in the CBD sector, with a movement toward the legalization of cannabinoids and other compounds derived from the hemp plant. underway

Reports show native Indian cannabis varieties exist that contain more than 15% CBD. But India's future in healing applications may not only be about CBD; it may be CBG, or CBC. As data and research emerge about how individual cannabinoids affect the endocannabinoid system, the purer compounds, and crops that contain peak amounts of the compounds will become more valuable, allowing Indian producers to create dedicated formulas for a range of applications.

Beyond such health products, Indian hemp stakeholders have said development is likely to follow quickly in food and cosmetics, followed by clothes, bio-composites and construction – applications that all are being researched in India.

In a broader sense, studies also are underway on everything from seeds to product

development to hemp's potential to revive of local economies through co-operatives and entrepreneurial enterprises.

So far, it's Uttarakhand that is most associated with industrial hemp in India. The state, which in 2016 legalized the cultivation of hemp for fiber and seeds, has developed a scheme that allows individuals and companies to obtain four types of licenses: for hemp farming; for storage of raw material; for sales; and for transport.

More states look at hemp

Other states have taken notice. In Uttar Pradesh (UP) the government recently announced it will issue permits to allow hemp farming. According to the decision, farmers will be allowed grow the crop under the supervision of the Excise Department. The UP government has committed to doubling the income of farmers by 2022 and hemp is part of the plan to achieve this. Uttar Pradesh also recently announced an interest to grant cannabis-related R&D licenses.

Meanwhile, the states of Himachal Pradesh and Arunachal Pradesh also are reported to be eyeing options to legalize hemp as a crop.

While hemp grows wild in India, farming it is still prohibited in many states. The federal government does not impose hemp policy on the states, which can individually approve hemp cultivation and processing for fibre-based materials and medicinal products.

That states' rights approach indicates the potential for a diverse, thriving industry but underscores a need to communicate hemp's economic development potential among politicians and government officials as well as across India's many administrative units and other constituencies.

Hemp's potential multi-crop yield could hold great promise for Indian farming by bringing relatively high per-hectare revenue to the typical Indian farm, which averages under two hectares in size.

It's about the farm that key fundamental decisions remain regarding how Indian hemp will move forward, especially about seed.

Indian farmers remember well the Green

Revolution of the 1960s, when foreign enterprises such as Monsanto tampered with the local ecosystem by introducing Genetically Modified Organisms (GMOs).

That's the first association that any Indian farmer or agribusiness makes when asked about importing certified cannabis seeds into India.

GMOs were touted as having the potential to stop world hunger, when in fact they only worsened the fragile, community-based agricultural industry of the Indian subcontinent. Although there is a significant difference between the concept of GMOs and certified seeds, which are naturally selected through controlled breeding programs, Indian farmers are understandably wary of "outside" solutions.

Value of native varieties

While importing foreign seeds and registering them, or breeding local germplasm with foreign seeds to make new cultivars may be tantalizing options, the best way forward for India — and for Indian agriculture — is to utilize landraces that are readily available to every farmer. It fills the gap between a local farmer and a private R&D company, but it also taps into the natural capability of these landraces to adapt to their environment.

According to the Protection of Plant Varieties and Farmers' Rights (PPV&FR) Act of 2001, farmers, plant breeders and researchers may be granted intellectual property (IP) rights over a registered plant variety. Farmers are thus entitled to "save, use, sow, re-sow, exchange or sell their farm produce including seed of a registered variety in an unbranded manner."

However, the PPV&FR Act in itself does not ensure that farmers' varieties are capable of competing with national and foreign companies developing new varieties with greater resources at hand.

Domestic market for hemp

Meanwhile, the domestic market for consumer products grows along with increasing health consciousness among a rising number of India's billion consumers, sure to lead to gradually expanding domestic demand for locally-produced hemp-based and other natural products.

As the Indian market gets rolling over the next few years, those in the industry hope to capitalize on a traditional knowledge of hemp seeds and fibres that have long provided local subsistence in India through production of such diverse products as rope, foods and fuel.

And they look beyond to even more lucrative business in biotechnology, medicine and nanotechnology – including for export.

Given the size of the country, its history with the plant and its emerging economy, India looks well on its way to becoming a true global hemp powerhouse.

Patient Directed

Veteran pharma exec **Scott Reese**, CEO at US-based C-Beyond Health, says patient-doctor dialog is critical to successful treatment with CBD

HempToday: You describe C-Beyond Health as being in the “patient directed” cannabinoid market. What does that really mean?

Scott Reese: First off, CBD is certainly the most prevalent and recognizable of the hemp derived cannabinoids. However the future lies in exacting combinations of the right cannabinoids in the right ratios to achieve health outcomes for particular conditions. “Patient directed,” to us, means bringing forth advanced botanical and medicinal chemistry solutions using the right cannabinoids to treat particular conditions. We start with patient needs assessments as the first phase of our product development cycle.

These patient-need assessments are conducted by leading physicians in that particular condition category. For instance, in menopause, we work with a leading women’s health medical director to understand the specific symptomatology, pathology and psychographic profiles of the patient. We then transfer that knowledge and data to leading formulators to design the cannabinoid profiles and delivery methods for these products.

HT: What is it about the current landscape that fuels your vision for the company and for the cannabis-based medicine sector in general?

SR: We believe that patient care is at the beginning of a major transitional pivot. The use of cannabis-based medicine is on a dramatic rise, not because it is novel, not because it is fashionable, and not because it comes from an iconic plant. It’s because it works if taken properly.

Moreover the use of plant-based medicine is on the rise because patients are taking back control. The pivot is about who controls the medical drug market and for the first time ever, and with a loud voice, it’s the patients.

The regulatory bodies that have controlled patient access to medication, the FDA, CDC, AMA and DEA, have a burgeoning social movement to contend with, not just approvals of a molecule to treat a particular condition. Patient mistrust of these organizations is high,

physician mistrust is growing.

HT: What’s your view on the whole regulatory situation regarding CBD in the USA? That’s a situation that’s still in flux, right?

SR: It is absolutely in flux and will continue to be so while the current regulatory and clinical constructs remain in place. Having been in the pharmaceutical industry for 20-plus years, one thing is apparent: Clinical data, and its inability to replicate real-world dynamics, rarely produces sustainable findings. Just look at opiates. There have been so many FDA approvals for these drugs that have been deemed safe and effective.

What has happened in the real world is very different. Again, I believe, and I’m not alone in this, that we are experiencing a true pendulum shift in thinking that will result in new policies and new treatment paradigms.

HT: Tell us about the patient and physician education platforms you are developing and how that fits into the company’s overall strategy.

SR: This is critical. Meaningful dialogue between physicians and patients about the use of cannabis-derived medication is critical not only to establishing a comfort level on both sides but also to the ultimate success of a treatment regimen.

Patients don’t know how to bring it up, in many cases they are scared to. Doctors don’t have the knowledge and these medications are not yet a part of the protocols that they are trained to follow so closely. That said, this is easier here than in other countries. For instance, we are the first registered distribution company in Thailand beginning Jan. 1, 2020. Our colleagues in Thailand, in the hospital systems, are trying right now to figure out physician education.

Unlike here, Thailand has had zero access to hemp-derived medications. They have no idea how to speak to patients. We are infusing patient and physician education and dialogue discussion guidelines across all of our disease state and branded communication platforms.

We are also building a wide reaching educational platform so that patients and physicians both can access real data about real products and find the right solutions.

HT: What is happening in marketing innovation in the CBD space?

SR: The big, sweeping innovations in marketing are going to happen inside of content and distribution partnerships with mega-brands. This is where the farm-stand players will fall out of the picture.

HT: How do you describe the company’s mission? And how important is mission to C-Beyond Health in the long term?

SR: We are dedicated to advancing the science and availability of cannabinoid products. The more we learn about the science of cannabinoids, the more we learn about nanoparticle suspension and other delivery technologies; and the more we learn about patient experience through real world data analysis, the better our products will be. We don’t see this as a short-term game. We are in this for the haul. That’s what leaders do.

HT: You have an eclectic collection in your C-suite. What’s are the common characteristics among these executives that you feel is critical to the business? What brought you all together?

SR: Yeah. Great group. I am so privileged to work with so many people at the top of their game. I have some of the nation’s leading cultivation and extraction experts, one of the world’s most brilliant and recognized pharmaceutical brand strategists just joined us as well as a super savvy operations, legal and technology team.

In addition to my team, I consult on a near daily basis with my advisory board all of whom are Chief Execs from household name healthcare companies. We are right now building our Thailand team and I am excited to announce some of those players soon. The reason we are all doing this together is simple, we love it.



“

The regulatory bodies that have controlled patient access to medication . . . have a burgeoning social movement to contend with.

”

SCOTT REESE is CEO at Golden, Colorado, USA-based C-Beyond Health. He is an entrepreneur, inventor and pharmaceutical marketing executive who has launched and managed brands for AstraZeneca, BMS, Pfizer, Genentech and many other pharmaceutical companies. Scott has presented to the U.S. Congress and the U.S. Food and Drug Administration’s committee on social media and health informatics. He has appeared in numerous industry publications including Pharmaceutical Executive, MM&M and PM360. Scott served on the Global Envisioning Board for an international marketing communications conglomerate and on the Marketing Innovations Board for a global pharmaceutical company.



“We expect to grow in every market we target.”

Jacek Kramarz
Sales Manager
HemPoland

Going for the GOLD

Fast-growing HemPoland looks beyond its Euro roots

Producers of fast-rising CBD brand CannabiGold say they're focused this year on global expansion of their bulk and private label offer while developing the brand in the home base of Europe, with a goal to build it into the continent's leader, said Jacek Kramarz, Sales Manager at brand parent HemPoland.

Key to that will be expansion into new markets based on diligent mapping of regulatory frameworks and aggressive product development, according to Kramarz.

"The real challenge is to identify markets with the most welcoming regulatory framework and offer products that fit this framework. To be successful on a global scale we have to look past Europe and connect with the right partners through our brand or private label offer," Kramarz said.

Differences: USA & Europe

Kramarz points to distinct differences between Europe and the U.S. market illustrating the challenges of global expansion. "The U.S. is bigger market for CBD, but it's also highly penetrated," Kramarz said. Meanwhile, in Europe, CBD makers face as many dizzying regulatory challenges as their U.S. counterparts, but also must deal with 15 languages.

"It's more difficult to grow the business in the European Union," says Kramarz. Even such pedestrian things as packaging and labeling must be carefully prepared to adhere to national rules, which often differ across borders, Kramarz noted. The fact that many of these markets are small means investments can be risky, he added.

Shifting consumer attitudes also need to be carefully tracked, according to Kramarz, who notes a significant change in the last few years. "Initially people were



CannabiGold brand products are distributed in Poland, Austria, Germany and several other EU countries.

looking for relief for difficult medical conditions. Most of them could not find a good remedy to treat their symptoms in standard medicine.

"We see now CBD becomes more of a lifestyle thing because the benefits of using it go far beyond treating diseases – which is for medical professionals anyway," Kramarz said. That shift has helped fuel CannabiGold sales that are primarily through health stores and shops that sell biological products to people who follow healthy lifestyles

Investment to fuel growth

HemPoland's product development efforts are being fueled in part by a \$10 million investment from parent company The Green Organic Dutchman (TGOD), which bought Elblag, Poland-based HemPoland last summer in a \$15.5 million deal – one of the biggest acquisitions of a European CBD company to date.

CannabiGold has rapidly expanded in the last two years. The brand currently has distribution in Poland, Austria, Germany and several other EU countries.

HemPoland is also a leading wholesaler of high-quality CBD in Europe, managing more than 50 bulk and private label clients.

'Gateway to Europe'

The vertically integrated company manages local hemp fields via third parties, as well as commercial scale extraction units in a tightly controlled production system. CannabiGold-brand products are turned out via state-of-the-art CO2 extraction technologies, while an on-site laboratory monitors for standards and quality.

TGOD called its HemPoland acquisition a "key component" in the company's drive to expand its global distribution network. "Gaining market share with CBD products now, in the EU, with over 700 locations allows TGOD to establish immediate brand awareness across all verticals including infused beverages," TGOD's CEO Brian Athaide said at the time of the deal last autumn, noting it opens "a gateway to Europe's 750 million people."

HemPoland, which formed with 15 workers in 2016, now has 80 employees. The company processed over 32,000 kg of dried flowers and 310 kg of organic CBD in form of various extracts in 2017.

What's ahead

Expansion is also down to product development, Kramarz stresses. "Our farm fields; our range of products. We expect those to grow significantly," he said, noting potential in products such as chewing gums, soft drinks, topicals and even packaged foods. "The range of products we could offer is almost unlimited."

Kramarz shies away from projecting too far into the future. "It's really difficult to say where we would be in 5 years. Such a plan can be invalid in 3 months given the current market," Kramarz said. "We are just going to stay focused on healthy lifestyle products. And we expect to grow in every market we target."

Hemp's long term value is in the fiber



**Robert
Ziner**

Get the full analysis:
Why Fiber is the Critical Link in the Hemp Family (<https://goo.gl/gwgcMH>)

Meet Robert Ziner
at Hemp Machines & Technology, HempToday Center, Poland, May 24-25, 2019

Over the long run hemp fiber will become the most relevant part of the hemp plant, and the most valuable of its outputs.

Just as iron ore is a primary product, and steel is a secondary product, seed and CBD outputs are strictly primary – while in hemp only the fiber is secondary.

As primary commodities, hemp seed and CBD outputs react swiftly to the reality of the world's quick changing market dynamics, driven by inevitable and often unpredictable pricing fluctuations.

Gap in supply/demand

However fiber will respond to changing market needs as a secondary “feedstock” product for many years because of the huge gap between the existing supply and demand in the marketplace.

As the supply of quality-controlled, large volumes of hemp fiber increases, more commercial end-users will learn of hemp's benefits and choose to pursue hemp for their needs. These large potential users will learn that the potential benefits of choosing hemp fibers will include:

- Greater profitability across the value chain.
- Sustainability; environmental friendliness.
- Lower cost of finished products compared to other natural fibers.
- Lighter weight and greater strength.
- Increased durability.
- High quality to cost ratio

It's clear that the greater the supply of quality-controlled fiber for the marketplace, the more demand will increase, and in turn, cause supply to do the same. This is because current large-scale users do not specify hemp because the volumes needed for training, marketing and large-scale logistics required for a new product can't be cost justified today

Eventual savings

Using hemp fiber in many existing product applications can eventually mean considerable cost savings.

Once commercial end-users understand that there is an increasing supply, they will be encouraged to pursue the possibility of lower costs and better products — which can be based on hemp. One need only look to the \$21 trillion construction industry globally to see the potential in fiber for hempcrete. And that's just one example.

Growing demand will cause growing supply – not lower prices. Of course, this does not mean that fiber prices will never go down. It is just that a supply/demand equilibrium won't happen for at least the next 20 years.

Scale opportunities

The fiber market will grow substantially over that time – bringing scale opportunities and financial success to the innovators. Whether from the perspective of a farmer, a large-scale decorticator, or a major end user of fiber, the hemp plant's fiber will end up being the long-term, dependable and most profitable output of the hemp industry.

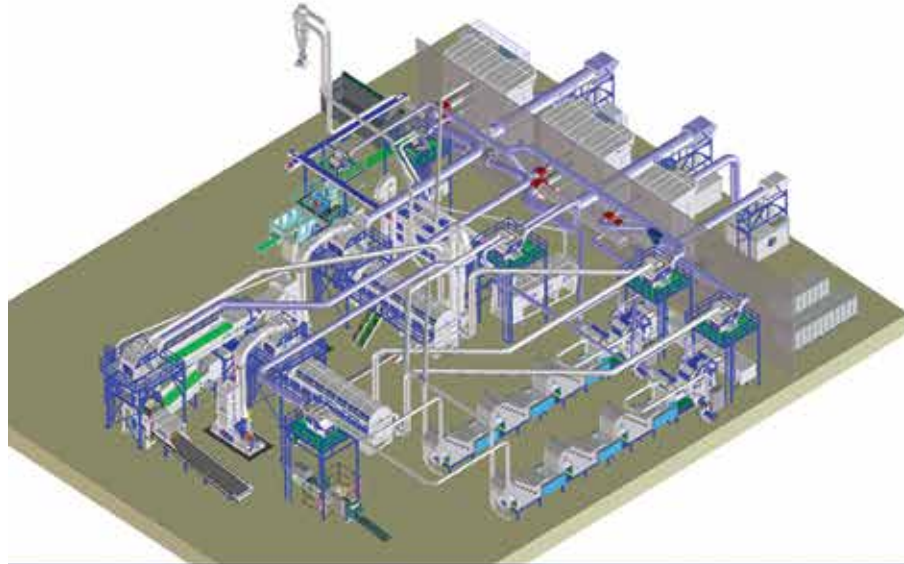
When the price of seed or CBD retreats, the fiber will always be there to stabilize the opportunity for the farmer. Even before the price of CBD falls in the future, farmers should look into the the unique opportunity of growing hemp for fiber.

Robert Ziner is Founder & CEO at Canadian Industrial Hemp Corp., Toronto

Hemp Fibre Processing

Cretes is a leading manufacturer of hemp stalk processing systems, with references in France, Holland, Romania, Lithuania, South Africa, Malaysia, Canada, etc.

Cretes has extensive experience with equipment for bast fibre processing.



Input of a processing line:

- ° Round bales, square bales, bulk material
- ° Up to 7 metric tons per hour

Output:

- ° Clean fibres (less than 1% of core) - baled
- ° Clean hurd (low dust and short fibre content) - baled in bags



Highland Hemp House

Once Pamela Bosch decided to rebuild her home with hemp, nothing was going to stop her

‘I was on the rooftop of a 12,000 sq. ft. home in Idaho in the middle of a snowstorm when she called,’ hemp builder Mattie Meade remembers. It was Pamela Bosch, farther north and west, in Bellingham, Washington state, USA. She’d made a decision. After three years of research that took her across two continents, after meticulous planning; an extensive search for the perfect materials, battles for permits and certifications, Bosch was ready to move forward with her dream project.

This summer, that dream took a big leap toward reality when Meade’s company, supported by local contractors, completed about half of the landmark Highland Hemp House (HHH) project in which hempcrete is being used to retrofit Bosch’s 1970s-era stick frame home. The pioneering effort traveled a long and bumpy path.

Hemp inspiration

‘It was about 4 years ago when I ran into Nancy at the Food Co-Op.’ Bosch said of her first hemp inspiration. Bosch, Nancy and several other women started getting together to discuss hemp and its various uses, specifically how it could impact their local community in Bellingham.

‘Initially I was interested in hemp for phytoremediation, but when I learned about hempcrete, it became something I had to do,’ Bosch said of the HHH project.

She started flying to Europe, meeting with international leaders of the modern hempcrete movement, drawing on the advice

of veteran hemp builder Steve Allin, founder of the International Hemp Building Association; long-time hemp farmer and product developer Albert Dun, Dun Agro, Holland; and Wolf Jordan, Wolf Jordan & Company, a Belgian builder who also makes natural building products.

‘No one in the U.S. has an understanding of these materials like the Europeans,’ said Bosch, who road tripped around the con-

tinents twice to see different hemp applications, study the history of hemp construction and look over technology.

When not on the road, Bosch was in Bellingham organizing and planning her dream home and working to obtain necessary permits and licenses.

It wasn’t easy. First Bosch said she found those working in the traditional and green building communities difficult to communicate with. Import permits from the U.S. Drug Enforcement Administration for a shipment of hurd had to be obtained. Bosch eventually had to indemnify herself of liability from the city, not to mention finding a non-traditional builder.

‘Leadership and courage’

‘She sacrificed a few things to get this building permitted. It took a lot of leadership and courage,’ Meade said of Bosch. Meade was among the open minded partners Bosch eventually assembled to help her realize her vision. ‘I knew from the first time we talked, Mattie was the right fit to help

me realize my dream.’ Bosch said. That fit between builder and the main contractor is critical to any large-scale build, according to Bosch. ‘Part of building a good team is not only the talent, but also the stamina to keep going’ she said.

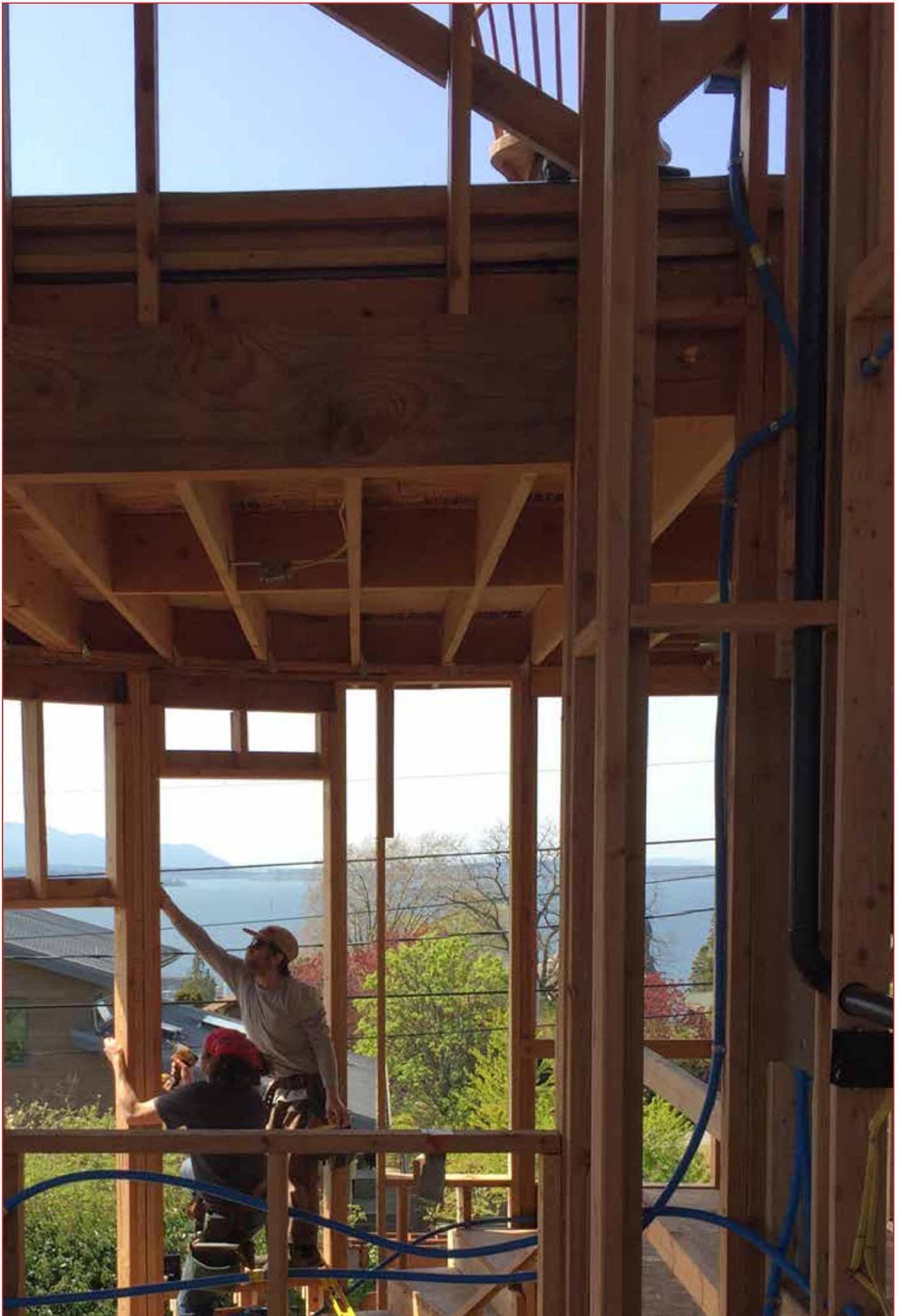
After flying to Bellingham to assist with the design and planning of the project, Meade and his team developed systems for the installation throughout the winter of 2017-18.

Meade was back in Bellingham early this



Groundbreakers

Pamela Bosch, Founder of Highland Hemp House, Bellingham, Washington, USA, teamed with Mattie Meade of Hempitecture as main contractor on the first phase of a project in which Bosch’s 1970s stick-frame home is being stripped of its toxic traditional wall materials to be replaced with hempcrete. **Right:** The 3,200 sq. ft. home has a panoramic view of the Pacific Coast’s Puget Sound.



HEMP BUILDING

past spring to work on the tear down of the toxic materials in the house's walls, and to adjust the framing for the hempcrete fill-in.

It was during the framing the team realized it faced significant challenges to complete the job in a timely fashion. "When the scale began to present itself, we began to ask ourselves how can we do this more effectively and efficiently," Meade said. A 2-story high south facade and the 3-story north wall -- 25 feet (7.62m) tall, were challenges. The builders used 2-foot forms to make a total of 12 layers.

Systems thinking

"We had to create a system to reduce labor intensiveness and speed up the timeline. We employed a systems thinking approach," he said. After surveying installation systems around the world the team developed an approach using readily available equipment that could easily be modified.

Hempcrete started going in the 12-inch (30.48cm) thick walls early summer of this year, a mixture of additive from Wolf Jordan, Dun Agro's hemp hurd, and locally sourced hydrated lime.

A beer cracking day

The last few buckets of hempcrete for Phase 1 of the project were poured and tamped mid-August of this year. "It was definitely a beer cracking day," Meade says. "It was a lot of planning coming to a close."

"I have a hempcrete house and it's beautiful! The neighbors intrigued and they love it!," Bosch said. "It smells like a Whole Earth Catalogue!"

The team celebrated by having some of Bosch's musician friends come over for an open house party. "The acoustics are amazing!" she exclaimed.

Looking ahead

Bosch and Meade will continue working together until the HHH is completed. Hempitecture, Meade's firm views the project as a showpiece for the industry globally. "It's so important that our industry continues to grow in a legitimate way" he says.

As for Bosch, she's looking forward to her evolving role as a leader and educator in this emerging hemp construction sector. "If we're going to get hempcrete adopted into mainstream building, there's a lot of infrastructure that needs to be built," she said.

HHH by the numbers

About 2,500 sq. ft. (232 sq m.) of exterior walls at Highland Hemp House are now of hempcrete. Quantities of basic materials used in the 12-inch thick walls:

9.1
tons lime
366 bags

5.5
tons hemp.hurd
300 bales

1.2
tons additive
51 bags



Seeking Distributors: North America



Natural Building Materials

Hempcrete

Hurds • Binders • Additives

Finishing

Fat lime putty • Stucco • Tadelakt

Paints

Calcatex natural paints • Pigments & raw materials

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The Family Farm



Team Obelisk: Andris, Debora, Fredis and Gabriela.

Photo: Arita Strode-Klavina

Building a model small hemp enterprise in Latvia

Small is beautiful at Obelisk Farm. That's the spot in eastern Latvia where Andris Visnevskis and Debora Paulino have escaped the urban life and are living out their hemp dream.

"We did it mainly because of the kids," Visnevskis said of the couple's transition from the bustle of London to the clean air and pastoral life of the farm in 2013.

Having read about the properties of hemp seed oil, Andris and Debora purchased the run-down 2.5 hectare property – which includes an old farm house and several stone and wooden out buildings – with visions of entering the hemp food market.

Business model

While their initial idea was to grow hemp for its nutrient-rich seed, the couple quickly realized that their farm's small size and lack of proper machinery called for an adjustment to the business model.

So in their second year at Obelisk, they added educational tours of the farm and launched a series of workshops in how to grow hemp, and how it can be used in food, paper, and for construction.

Andris is insulating the farmhouse with hempcrete, a project launched in 2017 when legendary hemp builder Steve Allin taught the first hemp construction workshop on the farm. This year's second edition drew attendees from around the Baltic States, Poland and Canada.

Packaged foods

Obelisk Farm also has an online shop that sells packaged hemp-seed food and tea from the flowers and leaves – products that are in growing demand in Latvia. In addition to individual consumer sales, the company has been successful among B2B customers who purchase Obelisk's products in bulk as corporate gifts.

Visnevskis said Obelisk's hemp agro-tourism activity and the shop drive most of the enterprise's income.

When tourism slows down during winter, the couple keep busy hand packing their tea and seed products in time for the important holiday sales season.

Dreaming of a farm

Andris and Debora, who's from Portugal, met at an Art Academy of Latvia carnival event in 2009. They later spent three years in London where Andris worked as a brick-layer while Debora tended bar.

"We were just working and saving money to buy a farm when we got into the idea of hemp. It all just came together," said Visnevskis. After considering Portugal and Latvia, the Latvian property proved to be a better buy.

The rundown farm required three years of renovation and grooming, most of which the couple did themselves before planting their first hemp crop in 2015. They've recruited volunteers to bring in their harvest by hand each year, drawing

both Latvian and international workers.

Obelisk's Hemp School is in a stunning old stone building that serves as a multi-purpose lecture and dining hall, and the complex has separate buildings for a library guest room, a retail shop, a shed for building materials and mixing hempcrete; and facilities for drying and storage.

Promoting Latvian hemp

Visnevskis is a strong proponent hemp in Latvia, which grew about 1,000 hectares in 2017; fields have grown gradually since 400 hectares were reported to have been under hemp in 2010. Meanwhile, various processing facilities are located in all regions of Latvia, with stakeholders concentrating for now on seeds and, to some extent, fiber raw material for export. For now, there is no hemp growing for CBD in Latvia, Visnevskis said.

With a relatively simple licensing regime and €500-per-hectare EU subsidies still available, Visnevskis sees potential for continuing steady growth of hemp fields across Latvia, and a continuing need to promote the expansion of industrial hemp for all it has to offer.

That's the mission driving Obelisk Farm: Promoting, teaching, advancing expansion of industrial hemp up and down the value chain.

"The key thing is education," said Visnevskis. "We want to demonstrate how the plant can be used — all of its uses."

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On the menu in Dublin

Chef and builder Declan Darcy mixes passion into hemp

Declan Darcy has been working with hemp for years but only took his first entrepreneurial steps last year with the establishment of the Hemp Kitchen.

The kitchen is located below The Hemp Company (THC) on Capel Street in Ireland's capital city of Dublin. THC is a family-owned business established by industry veteran James (Jim) McDonald in 1999 and Darcy and McDonald are partners on this latest venture. Co-located with the Hemp Kitchen is the Dublin Hemp Museum, which McDonald opened over 5 years ago.

Interest in hemp building

Before opening the kitchen, Darcy worked as a carpenter for a number of years and his early experiences in the Irish hemp industry were working as a hemp builder.

"In 2013 Jim asked me to build an extension out of hempcrete for his house in Thurles Co. Tipperary," Darcy said. At the time, Darcy knew little about building with hemp but was keen to be part of the project. This led him to engage in widespread research on the topic during which he read the landmark book "Building with Hemp" by legendary natural builder Steve Allin of the International Hemp Building Association (IHBA).

Darcy also visited Richard Freeman

who at the time had built three hempcrete houses on his farm. This research helped Darcy complete his first hempcrete structure and since then he has assisted on two new builds and four retrofit projects across Ireland. While these days the Hemp Kitchen is his main priority, Darcy is still happy to occasionally get his hands dirty on hemp builds.

Answer to many problems

"In this day and age when it is crucial that we use more sustainable and energy efficient construction methods and materials," Darcy said. "I see hemp building materials being an answer to many of the problems we face. It's a necessity that we incorporate hemp more and more into the construction industry."

But these days Darcy's fascination has turned more sharply to hemp food. From a young age, Darcy was a keen cook who took an interest in whole foods and the healthier side of eating; this interest led him to train as a raw vegan chef in 2016 and 2017.

Passion for hemp food

"As much as I love the carpentry work. I always felt drawn to doing something in the nutrition business and wanted the chance to share the things I had learned,"

Darcy said. Thus when he got the opportunity to open the Hemp Kitchen with McDonald he jumped at the chance.

"Hemp should be, in some form or another in everybody's diet," said Darcy, who adds it's important to use local organic ingredients in the kitchen. The organic produce supplied by Kama Hemp is incorporated into a number of his recipes.

The latest addition to the menu is a vegan, CBD-infused chocolate bar which is made in Ireland. Darcy said hemp milk is his best seller, followed by a coffee blend.

Irish Hemp Cooperative

Alongside completing a number of food and business training courses Darcy has attended hemp events across Europe to learn more and to share his expertise.

In May of last year, he gave a presentation at HempToday's Food, Health and Beauty summit, and he recently joined the board of the Irish Hemp Cooperative, a relatively new group working to positively influence the industry.

As for the health of the Irish hemp industry, Darcy said there's a lot of focus on CBD in Ireland now. "But I believe the agronomy part of the hemp industry is what will benefit the economic, environmental and social issues in Ireland the most, especially for rural Ireland."

— Brian Houlihan



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“We need to figure out how to negotiate this enormous expansion in a way that will not let hemp be controlled by conglomerates.”

– Dan Herer

Legacy as brand equity

Deep-rooted Herer Hemp Inc. sees a wide, challenging horizon

Hemp entrepreneur Dan Herer and an executive group have established Herer Hemp Inc., a new entity that has positioned itself to develop products across all major industrial hemp sectors in the USA.

“We just took hemp off Schedule 1,” Herer said of recent changes at the federal level in the USA that saw hemp reclassified as a common agricultural crop. “We’re now gonna be able to get crop insurance, have bank accounts — and grow tens of thousands of acres of crops without the restrictive framework of being a schedule 1 Drug,” Herer said.

Strong roots

Herer, son of the late, legendary hemp visionary and rabble-rousing advocate Jack Herer, is also Director of the California-based Jack Herer Foun-

dation, which works to advance the industry by emphasizing how industrial hemp can impact lives through education, community and farming.

Herer spent several years carefully developing high-quality products with a team of scientists, studying hemp and biomass for a wide, wide array of applications. It’s that work that serves as the basis for a “well rounded, diverse hemp company” going forward in the new era, Herer said.

Building relationships

“Now we’re building foundational components for a company that can do business nationally while also building relationships around globe,” Herer said.

“We’ll be growing so much hemp (in the USA) that we have to have a way to reach out and work with one another to create standards that will allow for

international commerce that won’t be one directional,” Herer said.

Herer Hemp Inc. will be based in an as-yet-unnamed southern state in the USA, according to Herer, where the company has contracts with farmers, processors and producers.

Hemp explosion

Of the explosive hemp era upon us, Herer offers some caution: “If we don’t come together right now as hemp develops into a worldwide commodity, the market will be dictated by people who don’t necessarily love the product, but would look to control it,” he said.

“We need to figure out how to negotiate this enormous expansion in a way that will not let hemp be controlled by conglomerates who would put their boots on our necks and choke us out.”

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How to teach our children well



Caren Kershner

Hemp industry veteran Caren Kershner, Colorado Industrial Hemp Coalition, is a former science teacher and a consultant to hemp farmers and producers.

What is cannabis? What is hemp? What is marijuana? These are questions that come up repeatedly as references to cannabis are permeating the media, especially with regards to much-hyped CBD.

With the latest farm bill in the U.S. re-legalizing hemp, and the recommendation from the World Health Organization that marijuana be removed from the dangerous narcotic drug list, cannabis is clearly in the forefront.

But how can quality education about the potential of cannabis be effectively addressed? How can we turn more students into the farmers, processors and entrepreneurs the industry is likely to need in the future?

Some universities in U.S. states have already begun cannabis and hemp programs in their agriculture and business departments as a result of pilot hemp growing programs in their states. But education is also necessary for both younger people and the general population.

‘Cannachat’

With younger people, initial discussion of cannabis should begin with parents and a “cannachat” with their children based on their beliefs and values. Unfortunately, many adults still do not possess the knowledge or the comfort level necessary to address the topic, resulting in the need for another source of accurate information. Should schools take on this challenge?

Classroom teachers themselves are often overworked and often lack the time or energy to take on additional subjects. Their supervisors are sometimes more focused on the data gleaned from test results, since some sources of funding may depend on those numbers.

A variety of other factors may influence the choice not to address this topic in schools, although in my experience, students of all ages are both curious and engaged when the subject turns to cannabis. There are experts at every level who are willing to share their knowledge and experience who are just waiting to be invited to speak with students, which is a great alternative for integrating cannabis education in the classroom.

What students want to know

There definitely can be a difference between what students ‘want to know’ and useful/practical knowledge about the plant, although some overlap may occur and this is part of what makes the topic so engaging.

For example, is important for learners to recognize the various classifications of cannabis – hemp, medical, recreational, etc. – are based solely on the level of delta-9-tetrahydrocannabinol (THC) –the chemical compound responsible for the psychotropic effects – in the plant.

Opportunities for everyone

The potential end uses of low THC cannabis, or hemp, are especially exciting. The grain-or seed- has an almost perfect balance of Omega-3 to Omega-6 fatty acids, and can be sprouted, pressed into oil or de-hulled and eaten as a ‘superfood’. The flowers can be processed into medicines that have proven effective against several stubborn diseases. And other parts of the plant have innumerable industrial applications, from textiles to biocomposites to building materials.

In an emerging industry, there are opportunities for everyone. Because of restrictions on high THC cannabis, youth who are involved in activities such as science fair or 4H clubs or other agriculture-related groups might consider designing some of their required projects around hemp. The possibilities are almost endless, and new ideas are always welcome. Let them show the innovative spirit that plants can inspire, and watch the world become a better place.



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