

Hemp TODAY

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REBUILDING AFTER THE QUAKE

With ongoing hemp building projects in Nepal and Haiti, IHBA's Steve Allin keeps up the globetrippin'

DAN HERER



Jack would be 'amazed, and horrified'

Regional Reports:

- Europe:** A hunger for health
- Asia:** China's Challenges
- N. America:** War winds down
- Hot Spots:** India, Australia, Romania, Poland, Colorado, Kentucky

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HELP US REBUILD NEPAL!

The Quake

The earthquake that hit Nepal in 2014 destroyed as many as 600,000 homes. Shah Hemp Inno-Ventures is making use of naturally occurring wild hemp for hempcrete to help restore the homes, the economy and the lives of quake victims in a private initiative with no NGO or governmental assistance.



We Seek

- Trained volunteers who'd like to enjoy Nepal and contribute to its recovery and development.
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The European Industrial Hemp Association (EIHA)

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- EIHA is involved in all areas of the Hemp Industry, including:
- Hemp Fibres
 - Hemp Shives
 - Hemp Food/Animal Feed
 - Hemp Pharmaceuticals

The European Industrial Hemp Association (EIHA)

EIHA was originally founded as an association of the members of the European hemp industry. Regular members include primary hemp processors in the EU. Associate members may be associations, research organisations and companies as well as individuals working in the area of hemp and other natural fibres. Founded in 2005, EIHA today has 13 regular and more than 120 associated members from 36 countries.

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 those legal entities or companies, which perform the processing of hemp straw to produce fibres and hards/shives or hemp raw material such as fibres, hards/shives, seeds or flowers. Each regular member has 10 votes plus 1 additional vote for every 1,000 ha of area under hemp cultivation contracted by its processing plant(s) in the current year. Regular members must provide, to the Executive Director of EIHA, data on their cultivation and processing of hemp and on the use of their material by product line by, at the latest, 1 April of the following year. Regular members are also member of several special interest groups (CBD, Fibres, Food, Shives, THC). The annual membership fee for regular members is 165 € per vote.

Associated membership: Any person or institution 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 annual membership fee for associate members is 330 € (or a larger voluntary contribution). Please check with statute and minutes of EIHA.

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Commitment.



Our new €5 million processing facility in Romania is only the first step in our efforts to help revive Romania's glorious hemp past.

With an ultimate capacity to process hemp from 5,000 hectares of fields, we're working to improve the lives of local farm families while at the same time providing natural, renewable materials to replace synthetic, fossil-based resources. HempFlax encourages an environmentally responsible approach by Romanian entrepreneurs and consumers, while discouraging unnecessary deforestation and environmental change.

A worldwide leader in hemp processing, HempFlax aims to bolster the agricultural sector of Romania, returning it to its former status as a prolific exporter of hemp.

That's commitment.

HempFlax commitment for your country?

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Nature wins!

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Hungry for Health

Europeans' appetite for organic, healthy living is the bellwether for a hemp food boom on the continent

With sales of organic, healthy foods continuing a steady climb across Europe, hemp-based edibles may be coming into their own at just the right time. As EIHA has reported, hemp food products are becoming more and more established in the mainstream in products like hulled hemp seeds, protein powder and high-nutrition oils. Organic food fairs across Europe, where the market for such healthier, more natural foodstuffs has climbed toward €25 billion (more than doubling since 2004), are more and more populated by vendors of niche hemp products. And hemp-seed-based food is now a common item in the mass market through supermarket networks in many countries.

Still, question remain

With legacy hemp firms busier and busier at the trading level, more and more creative, smaller companies are developing niche hemp food products, and doing the marketing. Still, imports of hemp seed to the EU from third-party countries remain higher than domestic production, indicating clear room for growth among EU hemp food players.

Yet there are fundamental questions to be answered if hemp foods are to have a clear playing field. First, hemp has to work its way into compliance under the EU's Novel Food Directive, which governs such things as product safety and labeling on newly developed foods. Also, questions over allowable THC levels in hemp foods particularly challenge the products.

CBD pauses to catch its breath

Hemp foods could move front and center with the industry especially as the European CBD export market pauses to catch its breath after taking a hit when U.S. authorities cracked down on some re-sellers last year, dampening imports. The United States Food and Drug Administration (FDA) in early 2015 issued warnings to some U.S. retailers that "CBD" labeled products they were selling are not officially "recognized" and that they may be in violation of U.S. interstate

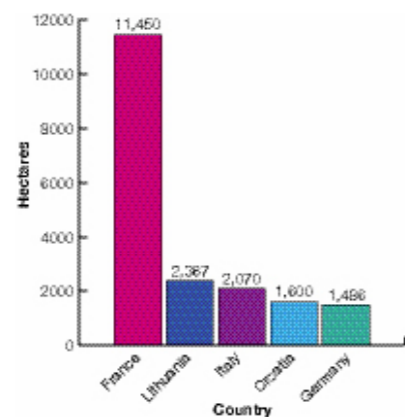


Holland-based HempFlax invested €5 million in a processing plant in Romania, where it farms hemp on 500 hectares.

Photo: sensiseeds.com

Europe's Top Growers

European hemp fields 2015 (est.)
Source: EIHA



commerce laws, casting a chill over the market.

And other challenges are ahead for CBD. Europe's CBD value chain requires infrastructure investment if the industry is to attract farmers to the crop, while more processors need to gain experience making CBD formulas, and sales channels need to be smoothed out.

Search for standards

For now, CBD and other medical can-

nabis players are ramping up efforts to set quality standards critical to the sector's future. Groups like the International Cannabis and Cannabinoid Institute, a U.S. led international organization based in Prague, are forging ahead with clinical research and working to help shape a slowly evolving European regulatory landscape that will sync with global regimes.

Composites, construction

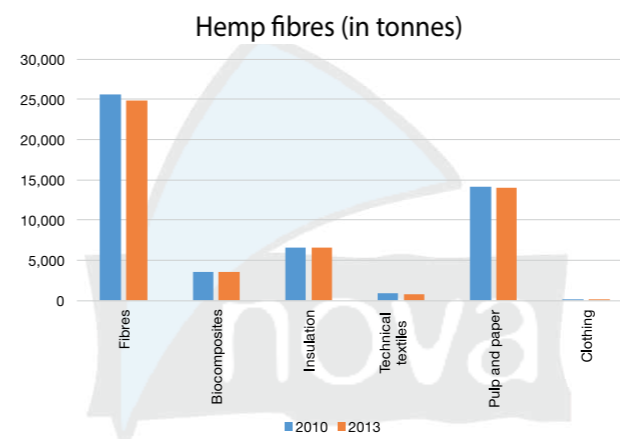
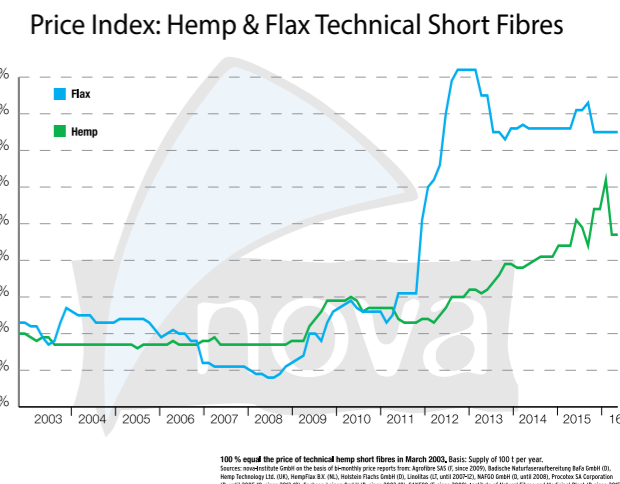
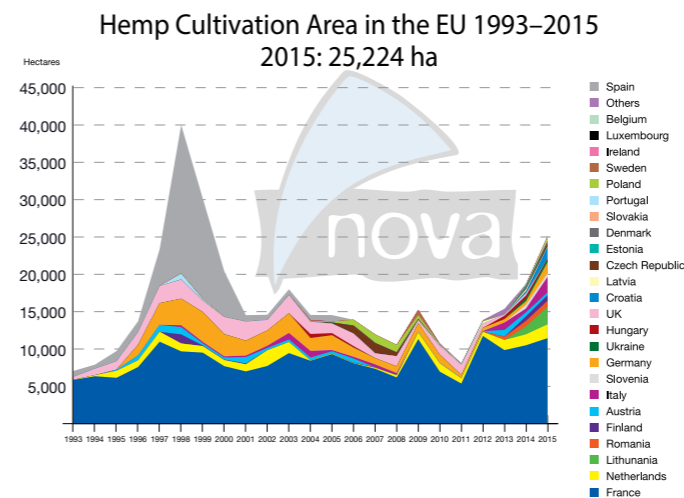
Beyond food and CBD, EIHA sees a well-established market in hemp for natural fiber composites, which are used for the reinforcement of automotive interior trim parts, for example. Steady growth in demand for those fibers globally means a chance for Euro producers, especially due to supply limitations in Asia, the EIHA has noted.

And while the hemp construction sector continues steady growth, with notable projects already completed in the residential, retail, warehousing and commercial sectors, the material needs broader acceptance among mainstream and so-called "green" builders if it is to pick up significant pace. It could be boosted by various EU funding programs aimed at reducing CO2 emissions in light goals adopted at the COP21 climate change conference in Paris last December.

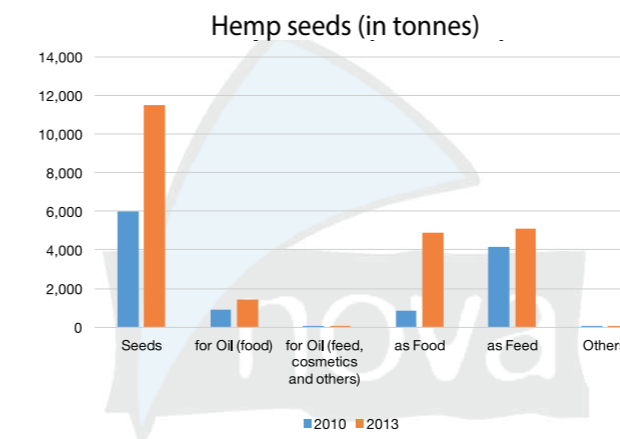
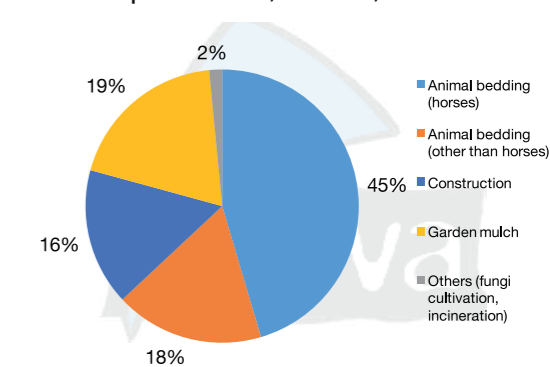
Europe by the Numbers



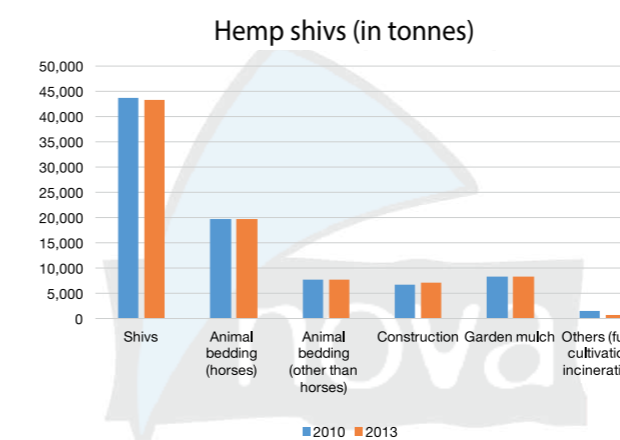
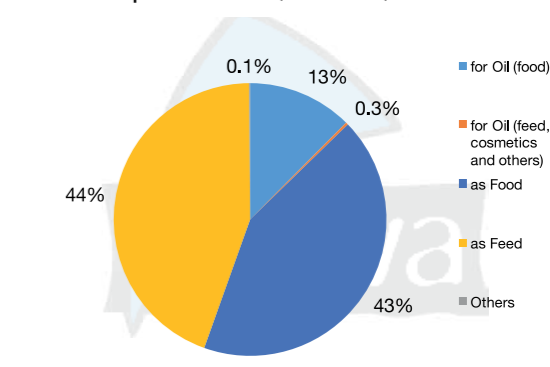
Key indicators on the European hemp markets based on EIHA research.



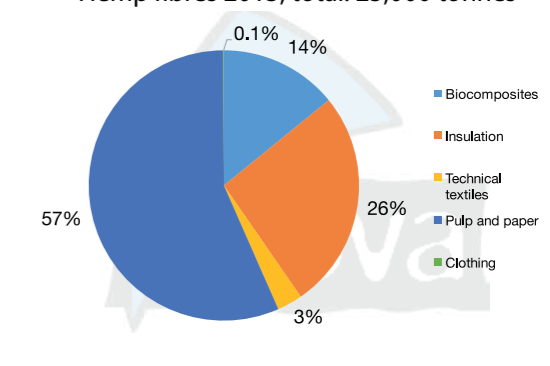
Hemp shivs 2013, total: 43,000 tonnes



Hemp seeds 2013, total: 11,500 tonnes



Hemp fibres 2013, total: 25,000 tonnes



POLAND

Expanding fields and products



Historically a hemp-farming nation, Poland made a major leap in 2015, with about 1,400 hectares planted after less than 500 the year before. And indications this planting season are that the growth will continue with at least 35% additional expansion.

Polish farmland designated for hemp by the agriculture ministry is set at 4,800 ha in light of projected demand, a number that will have to be expanded if Polish growers keep up their current pace. At the 4,800 ha level, Poland would move up significantly in Europe's hemp growing ranks.

Pushing the growth are various EU subsidies for hemp specifically, and those aimed at supporting

rural economic development and environmental cleanup.

Small Polish companies have been vending hemp products either imported or made from imported material for several years, but as the fields expand and domestic supply becomes available, it will help to unify the domestic industry's hemp value chain.

Wisely, several Polish architectural and eco-building firms have moved quickly into the hemp building space and are beginning to promote the material. Meanwhile Poland is also an R&D center in both agro and medical science, with researchers from Poznan's University of Life Sciences recently embarking on a €2.75 million project to develop a low-cost CBD-based pain killer.

ROMANIA

Rich past, promising future



With its vast, fertile fields and rich hemp history, Romania has the chance to return as a leading global player. Up to 1989, Romania grew about 70% of all hemp in Europe on 45,000 ha, making it the fourth biggest grower in the world – with most of the crop going for high-quality textiles.

The most concrete example that hemp has a bright future in Romania is a bold investment over the past couple years by Holland's HempFlax, one of Europe's leading hemp players, which recently opened a brand new €5 million processing facility and quickly rushed in to become the biggest player on the Romanian market. HempFlax farms about 500 ha of hemp in Romania, more than half of the country's total in 2015.

But its factory, which is turning out a range of hemp materials primarily for export, is designed to eventually serve a total of 5,000 ha.

Not just from Poland. From Podlaskie.

In the far reaches of Poland's pristine Podlaskie region, we're reviving hemp for a wide range of applications, as one of the pioneering Polish companies stirring the renewal of a crop that has deep roots in our nation's farming history and in the history of our family.

We farm, process and sell high quality hemp seeds, hurds and raw fibre, providing healthy products to the market while creating jobs and economic development in our community. With our own 800 hectares of land, we are increasing our area of hemp cultivation every year. We also push the broader hemp agenda in Poland through workshops and seminars to raise awareness of this versatile, abundant natural resource.

Through our relations with academic institutions and scientific professionals we're probing the barriers of hemp's potential to give us health, and to clean up the planet through a superior crop -- all with a goal of making "Podlaskie Hemp" synonymous with the highest quality.

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– Sean Murphy, Founder Hemp Business Journal & Miracle Ventures

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– Ari Sherman, President Evo Hemp



Field of Dreams

Michael Carus would like to see 100,000 hectares of hemp across Europe

Michael Carus is managing director of the European Industrial Hemp Association (EIHA) and founder and managing director of the nova-Institute, researchers and consultants on the bio-based and CO2-based economy. A physicist, Michael is the main author of a wide range of basic reports and policy papers on the bio-based economy in the EU.

HempToday: How would you describe the current shape of Europe's hemp markets?

MC: We've seen the market continue steady growth. Just look back to 2011 when we had 8,000 hectares in European hemp fields. That figure was 25,000 in 2015, so you can see the dynamics. This won't stop any time soon. Of course, I would like to see 100,000 hectares in Europe. But overall, the industry is on a good path. I expect double-digit growth per year in the near future – mainly from seed demand, and CBD, depending on regulation.

HT: What else is driving the growth of hemp planting?

MC: A big part of it is the coming online of new players. The Baltic countries, Croatia, Czech Republic, Slovakia, Poland and others. It means almost all EU countries are now into hemp cultivation, most of it seed for food.

HT: Who are the players working the hemp food value chain?

MC: Hemp-seed-based food begins showing up in the mass market through supermarket networks, like Aldi in Germany and Albert Heijn Holland. In Germany now, we even have marketing spots on the radio advertising hemp foods. The legacy hemp companies are working at the trading level, and between them and the retailers are a lot of creative, smaller companies developing more and more products for the market, and doing the marketing.

HT: So the food sector is the most dynamic now?

MC: Sure, and it makes a lot of sense. First, the processing of seeds into food is fairly simple compared to hemp fibre and shiv processing. Plus the demand is there as people adopt healthier lifestyles and as they learn about the benefits of hemp.

HT: What about health products? And CBD?

MC: Also very dynamic. If we talk about hemp flowers for pharmaceuticals and health supplements, it's around 500 tons now while a few years ago was only 10 tons harvested flowers. On CBD, it's important that a regulatory framework

“A lot of people complain about Brussels, but I can tell you there's a lot of expertise there.”

be established. For now, it's been a grey market, and there were a couple of years when that was very good for certain farmers. They made big profits. But that's over now, we see overproduction on the market and the CBD prices are decreasing. Anyway, EIHA is working on some proposals regarding regulation of CBD.

HT: Regulation at the EU level?

MC: Of course. Without it the market will be limited. The pure medical market is one thing. More complex could be the marketing of CBD extracts as food supplement and to avoid to become a “novel food”. It needs a regulatory framework to get the market developed to its potential.

HT: Is there support at the EU level for

hemp as a crop, and the whole range of potential products?

MC: You'd be surprised about the EU. A lot of people complain about Brussels, but I can tell you there's a lot of expertise there, and when we talked with them recently they already knew about hemp's possibilities, and everything we talked with them about they were in good agreement. We had a very open discussion.

HT: EIHA's reports show natural-fibre-based plastics are more and more prevalent in cars? Why did carmakers turn to these materials?

MC: Mostly because they are price competitive with traditional plastics along with obvious environmental benefits. Companies like Audi, BMW, Mercedes and some of the French carmakers are using biocomposites in the interiors of their mid-range and luxury size vehicles. Some have as much as 25 kilos of hemp fibres in them. So the demand is steady. This is a stable and established market for hemp. End of the year, hemp fibre will be the first and only natural fibre with a sustainability certification in the world (ISCC+ standard). This could lead to increasing demand for hemp fibres in the automotive industry.

HT: What about the market for shivs, especially the construction market?

MC: The main market for shivs is still mostly horse bedding and other kinds of animal bedding. Hemp construction is a very important sector. It's still small, but with the right marketing – again keeping in mind people's wishes for a healthier lifestyle – it could really grow. There was some interest in hemp shiv particle board a few years ago, but that market seems to be dormant right now. That's mainly about marketing to overcome a significant price difference between wood chips and hemp shivs, and getting the message across of a light board and that living in a hemp environment is truly healthy.

Globetrippler

Hemp builder Steve Allin talks about farm & family, rock 'n' roll, the industry's future and his latest projects: Rebuilding with hemp after earthquakes in Haiti and Nepal.

Steve Allin pioneered the International Hemp Building Association (IHBA), which he serves as director. An author, teacher and consultant on ecological building, Steve has been building with hemp and promoting hemp's use in construction all over the world for the last 20 years. He is currently involved in projects to rebuild with hemp in the post-earthquake areas of Haiti and Nepal, while maintaining a busy workshop and speaking schedule. Steve lives in Kenmare, County Kerry, Ireland.

HempToday: What's life like on the farm this time of year?

Steve Allin: My farm is mainly wild land. At the moment it's just doing its thing without my intervention, but this year has so far been really cold and lately really dry – but it's Ireland so you can never predict the weather.

HT: How did you get involved in the Haiti project?

SA: I met Ritva Laurila as a participant on the first Hemp Building Course I taught in Finland in 2013. She spent many years living in Haiti in the 80's and 90's after she qualified as an architect and has a daughter who is half Haitian. She asked me whether I would consider travelling to Haiti to help establish the system there to alleviate the situation resulting from the earthquake in 2010. It just so happened that I had previously written a piece in an IHBA newsletter about the earthquake in Haiti and how hempcrete would have been a safer option and could be so, in the future.

HT: What did you find when you got there?

SA: I knew nothing about Haiti then and so was largely unprepared for what I would experience. When Ritva invited me it was as part of the research for a project she was proposing to the Finnish govern-

ment aid fund working with the Haitian Resource Development Association, which is directed by her friend Jacques Bartoli. My first visit was really to see what was possible and how we would go about putting Ritvas' plan into action. I had no emotional connection to the place initially, having virtually no knowledge of the country's history. Apart from the fact it was part of Hispaniola, the island "discovered" by the slave trader Christopher Columbus and where he perpetrated genocide on the native population. It was by reading the novel by Isabel Allende "The Island under the Sea" that I eventually understood the national history and culture. Another book, "Fault Lines" by Beverly Bell brought me up to date on the situation in the country since the earthquake – the shock to the populace, the damaging results of U.S. intervention and the "invasion" by the forces of the U.N. Haiti is one of the poorest countries in the western hemisphere and though I have experienced poverty on a large scale in India, that's nothing compared to the situation in Haiti today.

HT: What are the goals of the project?

SA: Our project is based on the concept of establishing a mobile school centered around the growing and processing of hemp – initially to build with, and then to develop other materials such as fibre and food once

we have a supply from the agricultural side. We are training a core group in the basic skills involved with designing and building small houses for people in a variety of regions in the country. So far, we've identified our core group, begun the construction training and planted the first crops.

HT: And the project in Nepal?

SA: In Nepal the situation was quite different. Dhiraj Shah (Shah Hemp Inno-Ventures – SHIV) came to me via the internet as part of his research into repairing Nepal after the more recent earthquake (2014). Having returned from Portugal with his wife Nivedita as a reaction to the earthquake, Dhiraj wanted to bring an ecological and sustainable solution to the process of rebuilding the hundreds of thousands of homes destroyed in the quake. Having discovered the idea of building with hemp and that it might be an earthquake proof system, and then finding me, Dhiraj quite quickly identified how the wild hemp growing throughout the Himalayas might be processed and used to make hempcrete.

HT: Where does the project stand now?

SA: Dhiraj got me out to Nepal in February and we started work on a couple of his projects. The first one is to use the material locally to repair the homes of villagers in the remote mountainous regions where people are still living in fear of more quakes, and as a result are sleeping in tents and building makeshift shacks from rescued materials from their former homes to cook and shelter in during the day.

HT: What are the logistical challenges in this situation?

SA: This idea will have to be well thought out as the terrain in the north of

“Eventually we need to house more affordably the more needy in our communities.”

– STEVE ALLIN



Steve Allin with his dog Eddie, near his homestead in County Kerry, Ireland.

The HempToday Interview: Steve Allin

the country where the earthquake hit the hardest makes it very difficult to transport materials around – across and up and down! But the need is great across a large region there.

HT: Tell us about the other project with SHIV.

SA: This has implications for the new build sector in Nepal. It's based around the family home base of Janakpur in the south of the country. Here, Dhiraj's father, Dr. Ram K. Shah, has his trauma surgery practice, and is in the process of building a new hospital on the outskirts of the city. The main structure is already completed but we are incorporating hempcrete into the building of the waiting area and 4 accommodation rooms for staff. In conjunction with plans for solar panels on the roof to reduce energy costs, we will also incorporate other "green" materials for shading to further reduce energy needs – especially for cooling.

HT: If we look at development of materials for hemp-lime building, how do you see the market shaping up?

SA: Naturally all of us involved in the this industry would like to see growth in the use and uptake of hempcrete, but of course this cannot happen fast for several reasons – the primary one being that there is still no hemp supply in many countries. Where there is a supply the production of hurds is largely as a result of fibre production for bio-composites, with hurds being the by-product.

HT: How to get past that situation where hemp building is in the back seat?

SA: Hemp construction is the type of sector that could expand quickly if several large projects were to happen simultaneously; however we would still be limited by the present production of any particular year's yield. More widespread use of hempcrete or hemp fibre insulation will need action on both fronts, that of supply and projects. We need both the chicken and the egg at the same time.

HT: What are the other challenges to expansion of the hemp building sector?

SA: Transportation. Within Europe there is a dense population living in a large area which provides a well connected market. This makes it economical, so far, to transport lightweight materials such as hemp hurds several hundred miles. But in regions such as the American or Australasian continents it is another matter. The massive distances between farmers and markets makes it hard to offer an affordable system. In many cases we have to start out with more expensive iconic projects that are financed by those lucky

enough to pay for the notoriety of being first – to be able to produce the right promotion

HT: And more broadly, looking forward, how do you see hemp building's potential?

SA: Eventually we need to house more affordably the more needy in our communities, or just the "Joe Soaps." For that we need to make the system cheaper with simplification and the use of locally supplied materials.

“Hemp construction is the type of sector that could expand quickly if several large projects were to happen simultaneously.”

HT: But isn't it all ultimately destined to be just another big business?

SA: I think the best model is the one of Community Supported Agriculture (CSA) where a local builder plans his projects a year or so ahead and makes deals with local farmers to supply the hemp on an annual basis. This method has so many advantages and can be built around an inexpensive collection of tools and machinery. This is what we envisage in both Haiti and Nepal.

HT: Since you're everybody else's guru now, who were yours?

SA: I would like to think I was everyone's guru but that's not really the case. The people who I learnt most from by seeing their work were Laurent Goudet who invented the concept of spraying hempcrete, and Charles Colgnard, a skilled hemp plasterer, both of whom live and work in Brittany, France.

I had the pleasure of meeting Yves Khun shortly before he died when he came to give a presentation at the 3rd International Hemp Building Symposium in Yverdon les Bain, Switzerland in 2012. As one of the originators, it was he who really showed the world how beautiful a building could be made with hempcrete. He was also very aware of the holistic effects of using such a material and living around it.

HT: Which do you enjoy more: building or teaching?

SA: I still love building with hemp but the feedback I get from teaching is very rewarding. The physical demands of working and building leave me aching at the end of the day as I get older.

HT: Aside from building, what are your other interests?

SA: Two things: My family and friends, and music. The more I travel teaching, the more I value where I live and my beautiful family.

HT: What do you read?

SA: I love getting lost in a book whether a novel or a more serious subject which intrigues me but recently I have been focusing on rock 'n roll biographies such as those of John Lydon, Robert Plant and Chrissie Hynde. I am currently reading a book by a guy named Roger Rea who was a Swiss hippy bus driver on the Road East from Europe to Goa and back.

HT: Speaking of musicians, of all those who died in early 2016, who's the biggest loss and why?

SA: David Bowie even though I was a fan of Lemmy from when I saw him in Hawkwind back in 1973 and as a D.J. in Goa in the 80's. Prince was a godsend. Just with the opening few bars of one of his songs, the dance floor would fill up with all the young and older ladies. The residents of the squat I first lived in when I left home were all huge Bowie fans from the days when there were only a few hundred of them crammed into a small upstairs room in a pub in London somewhere. Throughout his career he pushed the boundaries and it was always music from the edge that attracted me about rock 'n roll in the first place. I was never lucky enough to see him perform but I felt a huge loss when I learnt about his passing – in the same way I did when John Lennon and John Peel (famous British radio D.J.) died. The fact that Bowie was also a great guy increases the feeling.

HT: How did you first get into hemp?

SA: Before I returned to live in Ireland, the publication of Jack Herer's book, "The Emperor Wears No Clothes" was creating quite a stir. The inclusion of the information about IsoChanvre in a later edition coincided with me building my own house, and so I imported some to use as a plaster. And thereby hangs a tale.

HT: Did you ever do anything illegal regarding cannabis?

SA: Inhaled!???

HT: What makes you angry?

SA: Greed and cruelty.

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Setting the Pace

Legacy player Hempro Int. feels the beat on two continents

Daniel Kruse doesn't see the global demand for healthier foods slowing down any time soon. That has his legacy German hemp firm running on all cylinders as it works virtually across the entire hemp value chain and in several subsectors.

The Founder and Managing Director of Hempro International GmbH & Co. KG, Dusseldorf, Kruse has been feeling the pace of the hemp industry since 1995, when he hatched his idea to "combine ecology and economy" and started "HanfHaus." In 2002 Kruse then launched Hempro Int. which has matured into a leading European producer and wholesaler across the entire range of hemp food (mainly bulk raw materials), textiles, accessories and cosmetics.

Europe & China

Hempro Int. makes its food products in Europe, while its textiles are woven in China. In both cases, the company works closely with local farmers, guarding quality where it begins – in the field.

"Thanks to its health benefits and as health consciousness is growing, products such as hemp seeds, hemp oil and hemp protein powder are currently high in demand," Kruse said of today's market tempo. That has Hempro Int. racing to keep pace with customers who buy not only its food raw materials but also its HANF FARM-branded line of consumer foods, and from The Hemp Line, Hempro's own collections of men's and women's clothing and accessories kept fresh with new designs every six months. The line is of 100% hemp and hemp-cotton blends, with cotton from controlled organic fields, and are produced under the Global Organic Textile Standard (GOTS) certification regime. A top-shelf cosmetics line is also produced under The Hemp Line brand.

Hempro Int. also helps private-label firms with product development and then makes the products for them under contract, and goes as deep as the direct-to-consumer market via hanfhaus.de, its online shop that offers a wide assortment of reasonably priced hemp products.

Industry leadership

Despite the current strong hemp market, Kruse notes that Europe still has work to do



Daniel Kruse saw hemp's future in 2002, when he started Hempro Int.

Despite a strong market, challenges still face the hemp food industry, Kruse says

Hempro International GmbH & Co. KG

Managing Director: Daniel Kruse
Founded: 2002
Headquarters: Dusseldorf
Profile: Producer / wholesaler of hemp for foods, textiles, cosmetics. Online retailer.
Brands: The Hemp Line (clothing, accessories); HANF FARM (consumer foods).
Edge: Strong foothold in China and Europe; organic production. Strategic partnership with HempConsult GmbH.; established international player.

on legislation, regulations and restrictions related to hemp – particularly foods – if the market is to grow into its real potential. That's why his firm takes an active role in EIHA as the Association in turn interfaces with national and EU governments to push for a clear playing field for the industry.

And he's in full support of the industry's efforts to keep CBD out of the Novel Food Directive (NFD), the European regime that governs such things as product safety and labeling on newly developed foods. Getting foods with CBD to pass requirements under the NFD regime can cost as much as several hundred thousand Euros up to €1 million, Kruse said, a cost current CBD players cannot bear alone. To avoid that cost, some in the industry are pushing to exclude CBD as a "new" food under the argument that it's been in some foods for years. Failing that possibility, CBD firms could get together to finance the registration, sharing costs, Kruse noted.



A Hemp Road Map

Guidance needed for startups as boom builds momentum

Despite challenges facing CBD, startups and investors shouldn't be discouraged from the hemp medical market, according to Rebecca Kruse, CEO of Dusseldorf-based HempConsult GmbH.

While studies have repeatedly demonstrated the efficacy of CBD, current laws and regulations are still barriers to the medical sector of the hemp industry, she noted. "But for us, this is no reason for discouragement but for further studies and commitment in governmental and public discussions," Rebecca said, noting CBD's potential to help those who suffer from diseases such as epilepsy, dystonia and schizophrenia.

Market 'booming'

Along with the current interest in CBD, Rebecca describes the overall hemp market as "booming" with the numbers of farmers, producers, distributors and retailers coming on line in a steep rise. While those sectors also face legislative and regulatory challenges, she doesn't see insurmountable hurdles anywhere in the industry.

All the action has HempConsult, a broad-based industrial hemp adviser, very busy these days. HempConsult, which offers guidance on everything from farming and organic certification to legal and tax issues, has its genesis in the long-standing know-how of Hempro Int. GmbH & Co. KG, a vertically-integrated hemp company that has had operations in Europe and China since 2002. Gaining experience with that startup gave Rebecca and her business partner, Hempro Int. Managing Director and founder Daniel Kruse, a solid base of knowledge, contacts and experience.

Global reach

Growing interest in hemp products is fueling an increase in the number of farmers, producers, distributors and retailers, Rebecca said, and the hemp industry is a magnet for environmentally and health conscious entrepreneurs and investors.

HempConsult has a global client roster of established hemp players. But the company also works with startups. She encourages new initiatives, but has strong advice to those who want to get into the industry. "An experienced partner is highly valuable



Team HempConsult: Top left, clockwise: Rebecca Kruse, Sarah Jungkunz, Daniel Kruse, Wolfgang Hilgers.

"An experienced partner is highly valuable for the success of young entrepreneurs."

HempConsult GmbH

CEO: Rebecca Kruse

Founded: 2012

Headquarters: Dusseldorf

Profile: Complex services for all aspects of establishing hemp businesses.

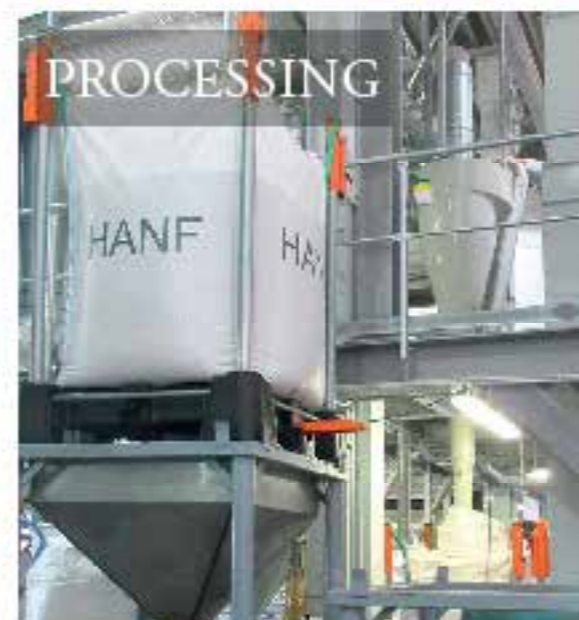
Edge: More than 20 years experience; strategic partnership with Hempro Int. GmbH & Co. KG, established international player.

for the success of young entrepreneurs, especially in the hemp business," she said. "The pioneers of hemp invested millions and millions of dollars to get to the status quo. With good consulting and market research newcomers can save themselves early-stage losses."

Family business

Despite HempConsult's global reach, the company itself is a tight-knit unit that has evolved down through the years into more and more of a family business, Rebecca said, with couples, siblings and close friends working in the company. "That makes work much easier, relaxed and more successful in many cases. We work hard to separate private and work-related issues – that's immensely important for work-life balance," she said.

HempConsult





Joscha Strauss,
General Manager
at Medical Hemp GmbH

Looking for logic

Enlightened national policies can free up the CBD market

European countries that have an enlightened approach to CBD are seeing demand rise proportionally – demonstrating how a proper market should function, said Joscha Krauss, General Manager at Berlin-based Medical Hemp GmbH. “The Czech Republic, Austria, Holland and Great Britain tend to be open and progressive in dealing with CBD-based products” Krauss said. “So the market volume of products from hemp in these countries is now accordingly large.”

A clear, rational regulatory landscape is the main thing needed to push crucial CBD sectors such as cosmetics, medicine and food supplements beyond the niche markets into the mainstream,” Krauss said, noting that while hemp products often arouse consumer curiosity, unclear rules still inhibit real sales, and can turn off potential business partners as well.

Especially critical is the the regulatory classification of CBD and rules governing its concentration and dosage, Krauss added.

Quest for quality

But also key to market growth is the establishment and implementation of quality standards using safe and environmentally-

“The Czech Republic, Austria, Holland and Great Britain tend to be . . . progressive.”

friendly methods, as well as development of proven large-scale manufacturing processes, Krauss said, work Medical Hemp has undertaken among a rapidly expanding network of high-caliber and experienced market players.

Once the legal uncertainty clears, Krauss sees MH Medical Hemp as well positioned to serve CBD markets in Europe and beyond. Founded in 2014 by Klaus Muchow, a graduate engineer in landscape architecture, the company has been busy since that time exploring the advantages and disadvantages of various CBD extraction processes under a corporate culture that stresses innovation and a “Made in Germany” quality. The company takes that focus into all of its professional collaboration with partners from the chemical processing industry as they reach together for the common objective of highest standards.

Seeds of a startup

It was Muchow, a botanist, who recognized two years ago that while the hemp markets for such products as food and building materials were getting a lot of attention, the plant’s potential for medicine was being under-exploited. Tapping personal contacts who were already in the business for knowledge and market intelligence, he launched Medical Hemp to begin exploring “holistic use of the hemp plant and its versatility,” with a focus on CBD.

It now offers the market hemp whole-plant extract CBD oil from CO2 extraction that features the full range of cannabinoids, terpenes, flavonoids and phenols from EU certified hemp, which is offered to consumers via the company’s online shop.

Krauss, who studied forestry and ecology, joined the Medical Hemp team last year and continues to develop his expertise about a plant that has fascinated him for years. He recently completed a master class with Dutch medicinal hemp producer Bedrocan, where he studied cannabis cultivation, cannabinoid extraction methods and the plant’s pharmacological effects.

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Rachele Invernizzi's hemp processing firm, SouthHemp, operates across a nine-region area in southern Italy that embraces 120 farms.



SouthHemp: Powering the Italian model

Italian processor SouthHemp is gradually filling up capacity at its new decortication plant in Crispiano-Taranto in southern Italy and in the process helping to incubate new hemp businesses.

"There are many young farmers involved and new food-processing plants for seeds are coming online," Rachele Invernizzi, SouthHemp's founder and president said of the 9-region area that's the focus of her company's operations at the moment. In total, SouthHemp's reach embraces some 120 farms.

While the factory, has an ultimate capacity to process 500 ha., current production is at about 300 ha. in the factory's second full year of operation, Rachele said.

Wide range of products

That production of various hemp-based supplies goes to such firms as Euro hemp builder Hemp Eco Systems, which has a branch office next to the processing plant, bio-plastics maker Kanesis of Sicily, and Canapa Cruda, a specialty paper supplier in central Italy's Fabriano Marche region. Animal litter, mulch and

"There's a great thrill in being in a market at the very beginning of an era."

five sizes of totally dedusted hemp shives also come out of the SouthHemp plant.

Public Service

While helping to build up the local hemp economy, SouthHemp is also active in public service, most recently having organized a hemp field inside a nearby prison where a crop now in the ground will be used to train prisoners nearing their parole dates. They will gain skills in making hand-made paper, weaving with hemp fiber and baking bread from hemp seeds.

"The director loved the idea and gave us about 3,000 sq. m. where we've already sown for seeds and fiber," Rachele said.

SouthHemp, which also is a certified seed vendor, spends a lot of time with its farmers, whom Rachele sees as the heart of her business. After supporting them

during planting season, her firm helps organize a schedule of meetings, conventions and conferences that also attract agronomists, industry associations, land-owners and other potential end users to share knowledge, expertise and resources.

"We talk about agriculture, agricultural techniques and everything needed to get them to conduct agricultural tests with hemp. We also talk about current markets for end-use, and possible opportunities based on those markets," Rachele said.

Supporting Research

Meanwhile, SouthHemp is also actively involved in hemp research with ENEA, the Italian National Agency for New Technologies, Energy and Sustainable Economic Development, in Brindisi, and is studying fitoremediation with Crea Energy, also from Brindisi.

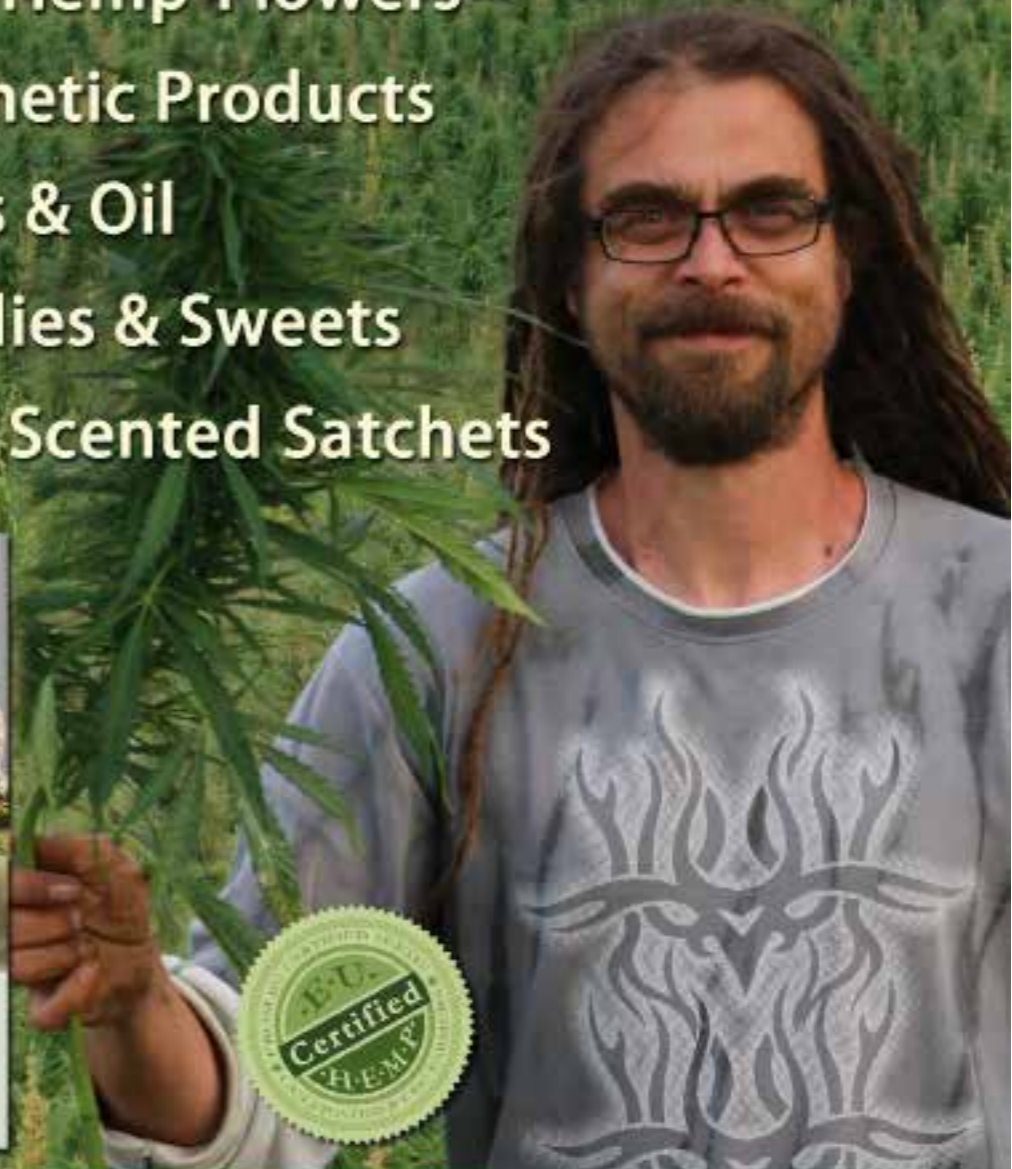
"There's a great thrill in being in a market at the very beginning of an era. Everything needs to be done, and that's just fantastic," Rachele said. "The potential of south Italy both for agricultural production and for innovation is there, so establishing hemp markets is a key first challenge."

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Putting the patient first

ICCI embarks on bold plan to set global medical standards

In the growing industry effort to normalize cannabis-based medicines and health aids, clinical research should be centered around a Patient Focused Certification (PFC) regime that assures compliance with a wide range of other standards for medical cannabis products, according to the Prague-based International Cannabis and Cannabinoid Institute (ICCI).

“PFC provides consumers a way to recognize products that have been produced according to highest safety standards, and a way for companies to demonstrate their commitment to those standards for consumers and governments,” said Pavel Kubů, CEO of ICCI, which launched last year.

A focus on hemp

Started in the United States under Americans for Safe Access Foundation (ASAF), which works to advance medical cannabis under a non-profit certification program, PFC aims to provide quality assurance by taking in needs of patients, caregivers and health-care providers first. At the same time, education and standards development activities under PFC address industry and government.

While in the USA, the PFC standard was created for medical marijuana, ICCI’s pilot program in Prague is also dedicating itself to the standardization of industrial hemp production for such products as medical CBD.

“With PFC, we can not only standardize hemp production, but also create better laws that will help the conditions for hemp that’s destined for human consumption,” Kubů said.

Securing the value chain

The goal is quality standards to control the whole production chain while at the same time giving assurance to the public and in medical circles, leading in turn to broader acceptance of cannabis medicines by the public and healthcare professionals, according to ICCI.

Adopting such a regime can advance European CBD, which along with



“With PFC, we cannot only standardise hemp production, but also create better laws that will help the conditions for hemp.”

Pavel Kubů, CEO, ICCI

ICCI’s international management team



Ben Bronfman

ICCI was started by American entrepreneur and environmentalist Benjamin Bronfman, who serves as Director of International Business Development. He has positions in several tech startups and serves as managing director of Global Thermostat, which is developing technology to capture and concentrate CO2. He was recently the recipient of the Global Green’s Impact Entrepreneur Award.

Pavel Kubů, MD
ICCI Chief Executive Officer
Expert in medical informatics and addicology

Steph Sherer
ICCI Director of Innovations
Founder and Executive Director of Americans for Safe Access

Tomáš Záborský, MD, PhD
ICCI Chief Scientist
Former Research Fellow, Johns Hopkins Bloomberg School of Public Health

clinical research is held back long-term by a slowly evolving regulatory landscape for medical cannabis, Kubů said.

While PFC is front and center with ICCI, the Institute is also currently working on Continuing Medical Education initiatives while it further maps priorities for an ambitious global

agenda it has set for itself, including active efforts to help shape hemp and cannabis legislation.

“Legislation is different in each country, but the final standard should be the same everywhere, which will distinctly help the world’s hemp business,” Kubů said.

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In southern China almost all hemp is sown and harvested by hand.



Chinese authorities earlier this decade rolled out a plan to plant hemp on 1,333,333 ha. of hemp mostly across the north of the country (area in green).

Source: The Research Center of ChinaHemp

China's Challenges

How the birthplace of hemp can stay on top

While China continues to lead the world in cultivating hemp, the nation's industry is challenged by the slow pace of technological development for farming and processing.

With labor costs rising, the need to develop more efficient machines will be critical to China's hemp industry in the coming years. In southern China, for example, almost all hemp is sown and harvested by hand, and the decortication processes are slow and wasteful.

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 with low-THC levels need to be developed and introduced into the market in an improved and expanded lineup of seed varieties.

No. 1 grower

China is generally considered to have the biggest hemp growing fields of any contiguous market in the world, but hard figures are difficult to come by – as they are in many other markets around the globe.

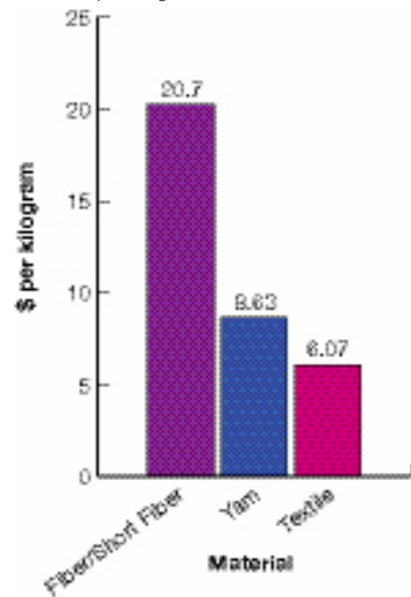
Textiles exports by far outpace the other two key categories reported by the government – fibers both long and short, and hemp yarn. China exported a total of 2,044,247 meters of hemp textiles last year, also putting it in the first ranks among hemp textile exporting markets.

But to maintain its world leading position, the Chinese hemp industry will need to look at greater use of the plant by expanding and moving into such sectors

Going Rates

Rough prices of Chinese hemp by material category, 2015.

Source: Crop Farming Information Internet/China



as bio-plastics, paper, food, medicine and hemp oils.

One million hectares

Looking well into the future, Chinese authorities earlier this decade rolled out a great plan to plant hemp on 1,333,333 ha. of hemp to produce 2,000,000 tons of fibres strictly for China's textile mills.

That strategy sees hemp in rotation with soybean and wheat crops already grown in regions mainly across the north of China. Authorities say this will not impact food farming in the region as the land identified is not food-

The World's Biggest Exporter

Chinese exports vastly outstrip imports. Volumes for 2015, with approximate value.

Exports

	Volume	\$ Value
Fiber/short fiber	50,755 kilo	\$1,029,464
Yarn	152,063 kilo	\$1,312,110
Textile	2,044,247m	\$12,407,284

Imports

	Volume	\$ Value
Fiber/short fiber	15,920 kilo	\$13,595
Yarn	521 kilo	\$15,815
Textile	31,614 meters	\$217,032

Source: Crop Farming Information Internet/China

producing. And they believe hemp will boost the fortunes of farmers based on its potential high cash yield relative to other crops.

Looking forward

Meanwhile, Chinese firms and individuals have secured some 500 patents related to hemp including those 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.

INDIA: Giant in the wings



While hemp grows wild in India, cultivating it is still generally prohibited. However, federal drug laws allow the government to license R&D

initiatives and limited farming – setting a clear path for a potential giant to one day step into the global hemp marketplace.

While legal barriers are being sorted out, a broad infrastructural framework to underpin the industry is being developed. Policy is being addressed and research is ongoing among institutes and governmental ministries. Studies are under way on everything from seeds to product development to rural economic development through co-operatives and entrepreneurial enterprises.

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

So research to support that promise

Indian indicators

2.4 billion rupees (\$37.6 million) potential for textiles based on hemp and nettle fibers, according to India's Ministry of Textiles.

60% of India's workforce on farms.

13% contribution of agriculture to GDP.

is looking at such things as THC/CBD levels of the naturally occurring "wild crop" plants, and ways to use those plants to develop industrial hemp breeds most suitable to Indian soil and climatic conditions.

Rising consumer market. On the domestic market, there is a rising health consciousness among growing numbers of India's billion consumers, leading to a gradually expanding local demand for hemp-based and other natural products.

Food to high-tech. 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.

Foods, medicines could spur growth Down Under



While Australia continues down an inevitable path toward broader cannabis legalization, some advocates for hemp-based foods and medicines say the industry's value could quadruple from \$13 million – based only on seeds and straw. New South Wales, Victoria,

Queensland and Tasmania are the biggest producers, with modest growing in Western Australia.

Yet despite Food Standards of Australia and New Zealand (FSANZ) having repeatedly OK'd an application to allow consumption of Australian grown hemp seed, Australian Health Ministers continue to block progress.

Australia produces bountiful hemp crops, with substantial seed contract business between producers and farmers already in place; wholesalers work the export markets while blocked from domestic sales. The country's biggest producer is Hemp Foods Australia who have contracted many hundreds of acres of organically certified hemp for their production facility in New South Wales. The industry infrastructure is bolstered by a wide range of agricultural and medical research initiatives that continue to advance cannabis science.

Notable this year, a state paper on the potential for medical cannabis in Queensland touted clinical research on hemp's health and medical benefits while noting Australia has proven experience growing for medicinal products. For example, Tasmania is licensed to grow poppies for pharmaceutical firms resulting in a \$290 million poppy industry, the state report noted.

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Co-Founder of BOHECO with Hon'ble Chief Minister Shri Harish Rawat of Uttarakhand – the first state with rich flora of indigenous hemp

BOHECO
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INDIA

The End is Near

As the War on Drugs winds toward an inevitable finish, North American hemp turns to its next challenges

Key American hemp advocates seem to have been spending a lot of time in Washington over the past year. Good thing to strike at the heart of the enemy in the waning days of the battle. Finish it off. The long war of attrition against America's World War on Drugs – which tragically decimated the hemp industry worldwide last century – is in its final days.

So just as the United States led us into prohibition, in true American fashion, it will lead us out. In a practical sense, that means, first and foremost, adoption of the 2015 Industrial Hemp Farming Act, which would remove hemp from the U.S. Drug Enforcement Agency's (DEA) list of dangerous substances. And while ignorance on the subject of cannabis and hemp still reigns among those in Washington's broken political system, signals that the tide has turned are clear:

- Prominent national and local political figures from major farming states are joining with national hemp lobbying organizations to back critical federal reform efforts that would unshackle the industry.
- 28 states have laws making it legal for universities to cultivate hemp for research purposes under the Agriculture Act of 2014, with several pioneering states running active programs.
- Local, state and national hemp associations and networks are gluing themselves together, fostering joint advocacy, and commercial and other business relationships.
- Information about hemp farming and hemp products begins to seep into the mainstream media consciousness with even small rural newspapers and websites reporting on local hemp farmers and initiatives.
- Research on hemp in the USA is well advanced and embraces everything from agro and medical science to consumer product development and industrial applications.



Courtesy of Malcolm MacKinnon

Alex White Plume's hemp odyssey

Alex White Plume's story will go down as one of a man's determination to grow hemp. When White Plume, of the Oglala Lakota Native American tribe, planted hemp on sovereign tribal lands in South Dakota in 2000, the federal government quickly came in and hauled his plants away. Two more times, White Plume put in hemp crops and two more times the feds seized them, eventually slapping him with a federal injunction barring him from ever putting another hemp seed in the ground. Finally, after a 16-year legal odyssey, a federal judge lifted that injunction March 28, 2016. "I'm free like everyone else now – free to put a seed in the ground on my own land," White Plume told High Times after the judge's ruling.

You can throw in hemp's unique promise to address climate change for good measure (the American politicians will give it a cynical nod), but when all's said and done it will be money and hemp's potential for economic development – the profits and tax revenues, all those new jobs – that will ultimately tip the scales in hemp's favor in the United States.

Marketers: Flying Wedge

While the official barriers holding back American hemp fall slowly, there's nonetheless an industry already taking shape – even if it's made up mostly of just a bunch of smart marketers and re-sellers of stuff coming from somewhere else. Fact is, the U.S. hemp industry, in pure business terms – like hard cash moving around – is them, for now.

But these sellers are also plowing turf for the future by spreading

the word about hemp through conferences, seminars and exhibitions, interfacing and prepping the consumer for the newest hemp product coming soon to his nearest supermarket or pharmacy, home-improvement store or clothing retailer. Growing an industry from scratch is always a chicken-and-egg thing. But fortunately for the U.S. market, the demand side is already being nicely warmed up.

Guarding hemp's image

Meanwhile a colorful cast of interesting hemp sharpies are lending rather off-key voices to the American hemp chorus, presenting early challenges to the industry's image. On the one hand, this is a function of that odorous Wall Street invention – the penny or "pink" stock – a gutter-level trading platform pumped up by badly written and often phony "press releases" that stream

constantly through cyberspace promising a no-fail hemp future. When investors lose through such investments, as they often do, it's hemp that gets the black eye.

Similarly, some privately held importers and distributors have given hemp a bad name in the U.S. by taking advantage of regulatory gaps to make dubious health claims on "CBD" labeled products they peddle, eventually drawing the attention of the U.S. Food and Drug Administration (FDA). The agency issued warnings to some firms last year that such products are not officially "recognized" and that their sale may be in violation of U.S. interstate commerce laws, casting a chill over the market. While most legitimate players lament the FDA's intervention, some say the warning could be the beginning of a cleansing process that will have a good long-term effect on the U.S. CBD market.

More hurdles

Meanwhile the entire matter of seed procurement has proven thorny, with some import seed destined for research projects held up by U.S. Customs last year.

This caused delayed planting that severely hampered some state hemp-growing efforts, ultimately turning off some farmers who were bold enough to dedicate fields to the crop. While many had hoped last year's experience would help smooth out the import process, already this year Nebraska announced it will delay its pilot hemp program until 2017 due to seeds being held up at the border.

As time goes on the U.S. hemp industry needs to develop its own seed programs and regimes to address – and govern – that whole aspect of the business.

Looking beyond the USA's hemp trials phase, it's clear that facilities to process the plant's wide potential range of products will require serious investors as

North America by the Numbers

Hemp Happy USA

Total sales of hemp-based products in USA 2012-2015.

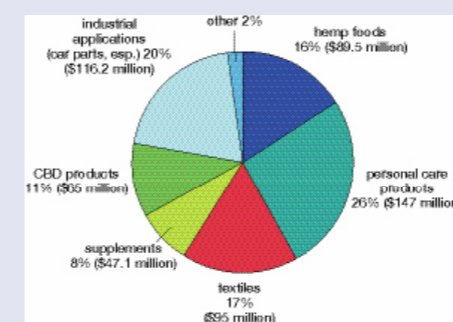
Source: Hemp Industries Association



Hemp for Beauty

Of the \$573 million hemp market, the personal care sector gets the biggest slice of the pie.

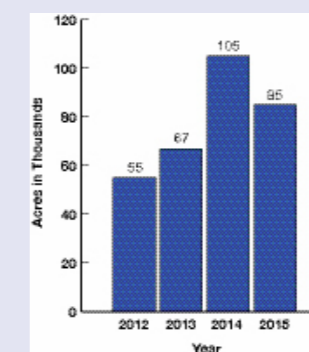
Source: Hemp Industries Association



Canada's Big Freeze

The area of Canadian fields under hemp is expected to drop sharply in 2016 due to a current grain glut that's not projected to sort itself out until 2017. Canadian hemp fields since 2012.

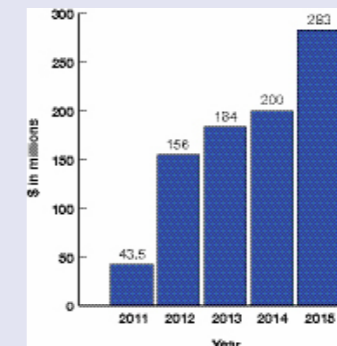
Source: Western Farmer



Health & Body

Total retail sales of hemp food, supplements and body care products in USA 2012-2015.

Source: Hemp Industries Association



time goes on and U.S. hemp fields expand. In the meantime there'll be a need for smaller factories to handle modest amounts of raw material – factories that can upscale as need arises and sell their used equipment into areas across the country that are at more immature stages of hemp development.

Beyond CBD

While the initial hemp rush in North America has been to the more lucrative CBD and seed-based oil and other products made from Canadian and European imports, the continent itself produces very little hemp straw for industrial use, applications that are rapidly growing in Europe where carmakers have started incorporating hemp bio-plastic into some luxury model interiors, for example. Similarly, the production of hemp hurd in North America is virtually non-existent despite growing interest in hempcrete as a superior and truly green building material.

Up north

As U.S. hemp moves through its teething phase, up in Canada – where they actually grow and process the stuff, they know what's

happening down south. Ca 80,000 Canadian acres were reported under hemp in 2015, with about 80% destined for the U.S. market.

Obviously as U.S. hemp farming and production gets rolling, the Canadians will be forced to expand south, perhaps bringing investment along with their years of trial-and-error experience and a range of specialized harvesting and processing technology they've developed.

In the meantime there are already indicators that the Canadian strategy is to begin to diversify in two ways. First, into strictly organic-based hemp food and health products, demand for which the industry cannot keep up with at present. Additionally, expect Canadian hemp players to make a strong move into hemp straw processing for everything from bioplastics to building materials and textiles, with some projections reflecting exponential growth in output through 2020.

But for now, Canadian hemp fields are expected to contract sharply in 2016 due to a current grain glut that's not projected to sort itself out until 2017. Growers and processors attribute that situation to higher than expected yields in the past couple years. That would indicate a period of adjustment for the Canadian hemp industry over the next 24 months.

COLORADO: Rocky Mountain high



Colorado is a cannabis leader in every possible way. Having been at the leading edge of the recreational and medical marijuana movement, all indications are that the state will also be a leader in the U.S. hemp revolution.

Active cultivation and notable processing operations are already running in Colorado as pioneering hemp enterprises have begun moving – mainly into CBD production – under a state-controlled hemp program.

Perhaps the best sign for Colorado is that hemp is spreading across the state. Officials said recently the number of applications being submitted to grow hemp this year is much greater than 2015, and represent more than 4,700 acres, still small but reflecting about 30% year-on-year growth.

Adding to Colorado's hemp status are strong research programs in state universities and the high-tech/venture capital (VC) center in Boulder, which boasts a handful of hemp-focused funds; at the same time some Colorado-based high-tech investors have expressed interest in putting their money and resources into hemp-related startups.

KENTUCKY: A rare political will



Kentucky especially benefits from rare political will in its efforts to revive what decades ago was a common state crop. From the federal level down to state government, hemp is a rare bipartisan issue that has all Kentucky interests plowing in the same direction.

After successful state-supervised hemp trials last year, uptake among farmers in Kentucky has nearly doubled, with about 175 hemp farming applications submitted for 2016 compared to 95 in 2015. That would expand Kentucky's trial hemp fields to about 4,500 acres in 2016. About 900 acres were harvested last year.

Moving almost in tandem, 36 Kentucky-based hemp processors have been approved so far for the 2016 program, 26 more than last year and expanding across the full range of potential end products – hemp foods, fiber for bio-plastic auto parts and textiles, and CBD.

The state also boasts one of the nation's leading hemp research programs at the University of Kentucky where, among other things, scientists are searching for thoroughbred hemp seed that will produce dual-purpose crops best in the state's soils and climate.

Back to the ramparts!

The overwhelming reason the United States should accelerate development of its hemp industries is the environmental one. So should we be surprised that it's economics, the economics of creeping corporatism that's trying to shape the industry.



Pamela S. Bosch
Highland Hemp House

No. The earth is in critical condition, which means humans are also in grave danger. With an economic and agricultural base that leads the world in production potential, the U.S. is in a powerful position to start healing the air, sea, and soil that sustains us. We all know hemp can be grown and processed to replace many of the petrochemical-based materials now used in building and manufacturing; it could double the efficiency of corn-based ethanol; it could be pouring oxygen into the air while limiting the use of pesticides and herbicides – the boons are obvious.

But we can't seem to get together the necessary response team. We are a culture that defends the status quo at the expense of our ability to respond to critical needs of living beings. It seems that before we can get reality-based laws into effect, we have to charge up a super-educated, motivated population to push the undeniable evidence in the faces of our government officials.

As a hemp builder, I've faced countless barriers both bureaucratic and institutional – among government authorities, builders, engineers, farmers and educational institutions that have difficulty promoting more than incremental change. Preserving the status quo is perceived to be safe, even though the evidence of our poisoned environment demonstrates otherwise.

Why should it take three years and \$50,000 for a builder to get hempcrete listed as an approved building material?

Why should state governments invest in monitoring and controlling THC levels in hemp fields when it has been demonstrated the world over that there is no public health and safety issue? Even in a state where it is legal to buy marijuana with maximum THC levels, Washington, where I live, is leaning to-

ward a law that requires the kind of excessive controls on hemp that the Canadians lament.

This is the same old song in which the producers, sellers, and controllers of seed production are the winners, while the losers are small farmers, entrepreneurs, innovation and the environment.

Hemp is adaptable, generous and capable. We can learn from the model it provides. Instead of waiting for snail-paced bureaucracies with a propensity to respond to the narrow interests of their own constituencies, it is time that we, the people, insist on liberating hemp.

Let's plant some fields, do some research, build some houses and factories. We need each other to build a better, healthier, more equitable world. With an educated, morally centered, motivated population, we can pick up the hemp banners again and get back to the ramparts. We've come a long way, but the hemp revolution is far from over.

Pamela S. Bosch is an educator, artist, hemp activist, and founder of Highland Hemp House, a pioneering project in the State of Washington to use hemp-lime and other natural materials retrofit wood-frame American homes to create an ideal, healthy living space.

"An extremely well done documentary... makes a strong case why we should start growing industrial hemp."
- AnV Netravak, Professor of Fiber Science, Cornell University

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A CEO's Drive

As the guiding force behind two major global hemp firms, Paul Benhaim knows where he wants to go, and how to get there

In his landmark book "Good to Great," Colorado management guru Jim Collins writes that building a great business is first of all about getting the right people on the bus. Then you can take that bus wherever you want to take it.

Paul Benhaim, founder and dual CEO of two of the world's leading hemp enterprises, has driven his bus onto four continents loaded with passengers "keen to make a difference in the world, sustainably," he said. "The key to making it work is choosing the best people you can."

Quick startups

At stops along the way, Benhaim's fast-moving bus has picked up team members who helped him propel first Hemp Foods Australia (HFA), the southern hemisphere's biggest hemp food player, and later Elixinol, a U.S.-based CBD startup. HFA, which deals in hemp seeds, oil and protein, has expanded into four facilities in five years while Elixinol has established operations on four continents in just two.

Beyond passion, Benhaim looks for people who value the trust he has built up through 20 years in the business. "This is the foundation for bringing on new people and recruiting others who believe in our high quality, sustainable solutions," he said. Of those already on board: "I love the people I work with and would do anything for them," Benhaim said. "We do our best to create a family atmosphere where all employees are treated as really close friends."



Paul Benhaim, CEO at Hemp Foods Australia and Elixinol

"We attract people keen to make a difference in this world, sustainably."

Emphasis on quality

Beyond his careful assembly of the right team, Benhaim stresses the importance of quality even as expansion keeps up a torrid pace. "We're building our own new processing plants globally to ensure we tightly control quality –

from the type of seed we use to how it is grown, processed, manufactured, packaged and delivered. Every piece is very important to us," he said.

But that too, Benhaim notes, comes down to the people who help run his companies, and how they're embraced by the corporate values and culture. "I

was asked by some of our team members to meet on a Sunday recently. We spent five hours discussing needs and came out with excellent solutions as a team," he said, noting the importance of employee access to, and involvement by management at the highest levels.

Pedal to the metal

For now, Benhaim is keeping his foot on the accelerator, expanding Elixinol operations in Colorado while about to break ground on a state-of-the-art food processing plant in Australia under a government grant HFA was recently awarded.

Dashing across five continents is a "challenge," according to Benhaim who nonetheless confesses a love for travel. "I'm on my second trip around the world; a month in Colorado, a month in Europe, a month in Asia," he said of his current pace. "I love sharing the same message through very different cultures," he said of those destinations, where during down time he enjoys hiking – in the mountains of Colorado and the Himalayas, and in Wales and on the beach near his home in Australia.

"I love Australia for its space, freedom and diversity. I love Colorado for its gorgeous mountains, and for its entrepreneurial spirit," he said.

No surprise that last bit. It's Benhaim's entrepreneurial spirit that's powering his companies toward the lofty mission he's set for them: "We're held to our passion to be the best living example of who we can be, first," he said. "This is our foundation as a business. It creates our future success."

Next generation and beyond

Elixinol advances CBD delivery with Xpen

Highly advanced

Elixinol's Xpen airless dispenser delivers every last drop of premium value CBD, and is an improvement over traditional oral applicators, which drew complaints from users due to leakage and waste.

Xpen features:



SECURE
A simple twist-lock mechanism prevents unwanted spills during transport

AIRLESS
Hermetic cartridge keeps the extract in a vacuum, protected from air and bacteria

SHIELDED
A proprietary violet polymer housing protects contents from light to prolong freshness

PRECISE
Each press delivers a measured amount of extract for accurate, predictable usage

HYGIENIC
The removable, washable tip enables sanitary conditions for multiple use

After hearing of users' problems with common oral applicators, CBD maker Elixinol went into an 18-month R&D effort that has produced Xpen, a next-generation device for the firm's rapidly expanding lineup of organic CBD concentrates.

"We had complaints of traditional applicators leaking, not being accurate, and that sometimes a small amount of the (not cheap) material was being left in the device," said Paul Benhaim, CEO of Elixinol, based in Boulder, Colorado, USA. The result

is an airless dispenser that delivers every last drop of premium value CBD which also prevents it from being degraded by oxygen, Benhaim said.

The company also improved storage capability of the product by developing a dark violet package that prevents light from affecting the contents. Security is provided through a simple twist lock.

Xpen is just one of the latest in the lineup of Elixinol products, which first entered the market in 2014, and which have seen fast sales growth, Benhaim said, spurring rapid global

expansion of his firm. It now has operations in Europe, Africa and Asia where the brisk growth of the CBD markets is as strong as that in the USA and Australia, where Elixinol was hatched two years ago.

Elixinol's expansion is underpinned by the firm's client relations strategy that fosters direct discussions between clients and doctors about CBD. "We encourage our clients to speak directly with our recommended doctors about their individual needs," Benhaim said, noting Elixinol's medical advisers bring vast anecdotal evidence

about CBD's benefits. The company also has a library of clinical trial results and has amassed additional CBD studies through its professional network – all of which are made available to clients, whom Elixinol also consults on legal matters.

The strategy has worked, and fast, as Elixinol continues to innovate, Benhaim said. "We have numerous other products in our R&D lab's pipeline coming soon," he noted. "Our business is in constantly improving the products to give customers the best experience."

More info: elixinol.com/xpen

Letting liposomes carry relief

Elixinol's advanced liposome-based delivery system for CBD is also getting favorable early reviews from users, the company recently reported.

The product, which debuted earlier this year, is based on highly concentrated CBD molecules inside liposomes, carriers that freely and quickly circulate

throughout the human body. Liposomes enhance absorption so they can provide more rapid benefits, and do so more economically, Elixinol said.

The CBD super-concentrate lets Elixinol adjust unit sizes to give customers more price-point options. A "citrus twist" flavored liposome-based product is available in 100 and 300 mg bottles for oral intake via

Elixinol's wholesaler and distributor network, and is also sold direct-to-consumer via the company's web shop.

Col. Philip Blair, MD, an Elixinol adviser who has applied CBD to clinical care for patients and the health industry in the USA, Australia and UK, led the company's team that developed the liposome-based product.

More info: elixinol.com



Elixinol's liposome-based CBD comes in 100mg and 300mg units



Shouldering a Father's Dream

Dan Herer says Jack would be 'amazed, and horrified'

Dan Herer is an industrial hemp developer who works with a team of scientists studying hemp and biomass sciences. He is also Director of the California-based Jack Herer Foundation, which works to advance the hemp industry by carrying on the work of his late father, legendary hemp advocate Jack Herer, author of the landmark hemp tome, "The Emperor Wears No Clothes." HT catches up with Dan to talk about the current hemp scene, and about carrying on in the Herer tradition.

HT: What would Jack think if he surveyed the hemp scene today?

DH: When I go to hemp events and I look around – how big they are, how many people, companies, products – it's really staggering. I think he'd be amazed, frankly, and he'd feel quite proud, and a great sense of accomplishment that this work is being done.

But he'd be horrified that there are some people out there making tremendous amounts of money, enriching themselves, who don't give back to the industry and to their communities. There is not a lot of education being done at the constituent level in the community, and that's why it's so difficult at the legislative branch to make good laws regarding hemp and cannabis. He'd be appalled at seeing some in the industry who want to control things out of greed who, ironically are using the same old tactics the chemical and petrochemical companies used to bring prohibition against hemp and cannabis in the '30s.

HT: And what would his message to these kind of players be?

DH: We have to set new standards for how to work together to build the industry, not fall into the trap of greed. Not that it shouldn't be profitable; it just shouldn't be rooted in greed. This is a plant that belongs to the world, not to a government, an individual or company. We need to share the technologies, the ideas and resources. We need to raise the water for everybody. And because hemp and can-

nabis still suffer from demonization, he'd say we need to be better than the best companies in all of our business practices. My father was hard to satisfy. He'd say this is a movement that's still under intense scrutiny. We have to represent hemp products as accurately as possible.

HT: What's the Foundation's strategy for growth and development?

DH: There are really two key parts to it. First, education and second, education. We can petition and protest government all we want. But we can win by attrition, like what's happening in the US now. This is working but it is slow going. Where

"The industry has to get out there and help explain things to the farmers."

we really need to start is at ground level, educating voters on the right and the left, to get them thinking about hemp and all it can do for the community and the planet. Then it's about community, and especially the farming communities. Show them how industrial hemp farming can change their lives. Show them how hemp products are impacting their lives everyday with the products they use without even knowing it's in things like the cars they are driving – Mercedes Benz and BMWs are made better and safer by the use of industrial hemp.

HT: What's the message to the farmers themselves?

DH: I'm not a farmer, but this is simple agriculture economics. Hemp is a valuable crop that can tip the scales in the small farmer's favor due to its incredible potential in so many areas – from hemp-concrete for healthy, sustainable buildings to

bioplastics, food, eco-friendly papers and medicines. If farmers are convinced the crop is valuable, they'll grow it.

HT: What are the keys to getting this message across?

DH: First of all, you have to remember that not too many American farmers know the truth about hemp because it was demonized for so long. So we start at a disadvantage. They don't know the crop has a real legacy in North America. But this is changing as more and more states begin to re-evaluate hemp's potential. So the answer is outreach, education. The industry has to get out there and help explain things to the farmers. We have a strong and growing hemp products market in the United States, yet we have to import the raw materials. That's the kind of straightforward argument that farmers understand. It's business. And it's a way to affect their livelihood and children's futures.

HT: What are the Jack Herer Foundation's immediate challenges?

DH: We try to work in a constructive way to regain value around the Jack Herer name and image. Things got a bit out of control on the trademarks after our father's death, and we're just getting a handle on it. I'd go to events in the years after his death and there would be companies selling Jack Herer-branded t-shirts, stickers – all kinds of things. Some people thought since they knew my father or were inspired by him, that this gave them free rein to use his name any way they wanted. It's humbling to see our father's name everywhere we go, but when other people are taking care of their families at the expense of ours, it doesn't feel very good or particularly respectful. So we continue to try to fix this situation by focusing on positive things. The last thing we want to do is create any animosity in the industry. We're just working hard to keep my father's work relevant, engage people in a new way, and do the things we know would make him proud.



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