





in the new hemp era

- 5 Hemp Giants





# WE DISTRIBUTE EU REGISTERED HEMP SEEDS VARIETIES

FRENCH: Fedora 17 | Ferimon | Felina 32 | Futura 35 | Santhica 27 | Santhica 70 | USO 31 | HUNGARIAN: Antal | Fibrol | KC Dóra | KC Zuzana | Kompolti | Tisza | ITALIAN: Carmagnola | CS (Carmagnola Selezionata) | FINNISH: Finola ROMANIAN: Zenit

Packaging: original bag (most varieties 25 kg), repacking available from 1 or 5 kg and also 0,7 or 2,5 g



Feel free to contacts us for more information on certified hemp seeds or any further request. We are happy to offer:

• organic hand harvested hemp flower tops and leaves • hemp food products • consulting services.



+420 777 027 012 | office@hempoint.cz

# HEMP MACHINES STECHN LOGY





Rafael Dulon Hanf Farm Germany



Kelly Knutson Isolate Extraction Systems USA



Robert Ziner Canadian Industrial Hemp Corporation Canada



Heinrich Wieker Henry's Hemp Harvester Germany



Marijn Roersch van der Hoogte Hanffaser Uckermark, Germany



Kristaps Eglitas Inventor Mini Hemp Decorticator Latvia

VENUE:

### HempToday Center

Palace at Naklo Lelow, Poland



**ORGANIZERS** 







Kehrt Reyher Editor & Publisher

Arne Verhoef
Managing Editor

Brian Houlihan Chief Correspondent

### Senior Advisers

Steve Allin International Hemp Building Association

Richard Rose
The Hemp Nut Consultancy;
CannaCoach, Italy & USA

Daniel Kruse HempConsult GmbH Germany Hana Gabrielová Hempoint Czech Republic

Morris Beegle Colorado Hemp Co. Colorado, USA

Rachele Invernizzi SouthHemp Italy

#### **Global Advisers**

NORTH AMERICA

John Patterson Tiny Hemp Houses Colorado, USA

Pamela Bosch Highland Hemp House Washington, USA

Gunhee Park Ministry of Hemp Texas, USA

Derek Cross Formulations by Nature Texas, USA

ΔSΙΔ

Dhiraj K. Shah Nivedita Bansal Shah Shah Hemp Inno-Ventures Nepal

Riki Hiroi Each Japan, Inc., Japan EUROPE

Rafael Dulon Hanf Farm GmbH Germany

Sergiy Kovalenkov Hempire Ukraine

Boris Baňas CBDepot, Czech Republic

Monica Brümmer Cannabric Spain

Pierre Amadieu Initiative Chanvre France

AFRICA

Tony Budden Hemporium South Africa

#### Media Advisers

Allan Lengel Ticklethewire.com Washington D.C., USA John Beauchamp Home Grown Media Poland



The Makla Foundation
Naklo 74, Lelów • 42-235 Poland
+48 602 336 685 • info@hemptoday.net

HempToday web and print design by:

Mprstudio CREATIVE SOLUTIONS

Marshall Reyher • www.mprstudio.com

Copyright © 2019 (Feb.) The Nakło Foundation

All rights reserved. No part of this publication may be reproduced, distributed, or transmitted in any form or by any means, including photocopying, recording, or other electronic or mechanical methods, without the prior written permission of the publisher, except in the case of brief quotations embodied in critical reviews and certain other noncommercial uses permitted by copyright law. For permission requests, contct to the publisher, The Naklo Foundation, at the address above.

### In This Issue

**OUTLOOK:** Asia's edge in the New Green Revolution – 6

**COVER STORY** 

# INDIA

The nation looks to build on its heritage in the new hemp era





### **INDIA'S ALLURE**

A strong entrepreneurial class is developing – **10** 

### **STARTUP STORY**

Young partners have an aggressive growth plan – **14** 





## **CHINA**

'Great plan' to plant hemp on 1,333,333 ha – **17** 

### **5 HEMP GIANTS**

Overview of some of the country's major players - 18





TOUR OF ASIA: Notes on Japan, Thailand, South Korea, Kazakhstan, Sri Lanka, Mongolia – 20

### **LEADERS**



Jacek Kramarz, CannabiGold – 22



**Daniel Kruse** HempConsult GmbH – **21** 



Phil Warner Ecolife Science – 26

# HempConsult















### By Arne Verhoef

he original Green Revolution, also called the Third Agricultural Revolution (1960-c. 1979), brought rapid agricultural advances unparalleled in earlier periods.

Agricultural inputs and new technologies helped increase production, but that Revolution's biggest driving force was the genetic improvement of staple crops - high-yielding varieties developed through selective breed-

Ironically, hemp escaped much of this development, handicapped by international narcotics conventions. Now, as the return of the Cannabis plant presents a "New Green Revolution" all its own, hemp is rapidly entering mainstream agriculture worldwide.

As the homeland of Cannabis, no place on Earth has a longer history with hemp than Asia. Cannabis occurs all over the continent, from Afghanistan and Vietnam, to Thailand and the Koreas. In India, there are probably as many hemp varieties as there are languages, while in some parts of China it would seem that every valley has its own unique crop.

### A richness of heritage strains

In Mongolia near-wild populations of the plant exist, showcasing a staggering array of traits. Japan, with its long history of hemp use, has feral populations of their heritage strains to remind us of their preprohibition Cannabis richness.

Russia, which has maintained a germplasm collection of hemp, similarly has a wide range of heritage and feral Cannabis varieties, including so-called "ruderal" plants, auto-flowering, monoecious plants perfect for seed-crop development and the target of decades of unsuccessful eradication by law enforcement.

As part of the global resurgence in hemp cultivation, many Asian countries have either intensified their production - such as China, by a factor of 6; have paved the way for commercial production (India); or are trying to establish a modern-day industry (Mongolia, Japan).

Challenges do exist in Asia – primarily in legal restrictions left over from the days of the global War on Drugs. Misconception and outright ignorance block rational policy-making and the development of hemp in many countries.

Also, worryingly, many Asian countries are eager to copy the globally recognized but arbitrary line that separates "narcotic cannabis" (marijuana) from "non-narcotic" cannabis (hemp), the latter defined as having 0.3% or less THC.

### THC-level targets for Asia

Asian countries would be wise to take note of forward-thinking nations elsewhere in the world which are looking at a THC limit of a full 1.0% or higher. They shouldn't be so quick to go along with rest of world, and can in fact help to lead the industry out of such restrictive thinking by capitalizing on the continent's genetic diversity.

Japanese hemp is a good example of this potential. Having historically been cultivated for seeds and fiber, it was by hybridizing with Japanese genetics that the United States Department of Agriculture obtained its tallest hemp crop in the early 20th century, reporting that three of these hybrid strains reached heights of between 15 and 19 feet, and yielded longer inter-nodes, and more and better fiber.

But traditional Japanese hemp can contain up to 3.9% THC, making it not viable under any current global standard. However, crossing these high yielding strains with super low THC hemp can certainly result in hemp at 1.5% THC or lower within just a handful of generations. With modern genetic tools even faster. But only if we realise THC content is not a good indicator of agricultural potential, despite what bureaucrats may say.

Before international narcotics laws, hemp was selected not on its THC value, but rather its agricultural traits and adaptability standards that must set the framework for the industry in the days going forward.

### Working the potential

The Chinese government is certainly paying attention to the potential of its crops, and making good use of them in the modernization of its hemp industry. Through international partnerships and government programs, the Chinese are creating new varieties with modern breeding and their extensive genetic resources, to create high-yielding varieties that perform under a diverse array of conditions.

Many valuable traits, like improved yields, improved fiber quality, improved seed oil/protein content, disease resistance and attractive cannabinoid profiles are already

being discovered within Asian hemp populations.

Even China, with its severe drug laws, has often turned a blind eye to some production areas, so that the People's Republic could rapidly become the world leader in hemp.

Although the 0.3% THC limit officially applies in many regions, just last year a scientist asked about the extent of hemp cultivation in China, stated: "It's a big figure. It cannot be revealed to the public. Many farms are, strictly speaking, illegal under current law and regulations'

Why are these varieties being grown? Because they are high-quality, high-yielding crops with a long history of cultivation, despite their more "colorful" cannabinoid profile.

### Pakistan, Nepal, Mongolia

In Pakistan, they successfully produce quality hemp seed oil from high-yielding but under-domesticated varieties, with an appreciable amount of oil – up to 31.5% – from wild hemp growing in the mountainous regions, and filled with protein comparable to the best of "industrial" (read: low THC) hemp. It's of course difficult to quantify their yield/hectare, as very rarely have these varieties been grown in strict agricultural trials.

In Nepal they are building houses from shivs produced from their own local Cannabis "wild crop," and like many others, using the technical fibers in textiles, and hemp oils and extracts in cosmetics.

Mongolian projects are looking at that country's near-wild Cannabis populations for interesting and valuable traits to establish a thriving hemp industry, while in India they are trialing indigenous varieties from the Kashmir region, showing perfect adaptation to their environments and hopefully responding well to commercialization.

### Kickstarting with historic varieties

Though the modern hemp value chain necessitates creating improved varieties, the historic varieties can easily be used to kickstart hemp industries in Asia. Using native landraces is the most logical step in producing well-adapted varieties for local conditions and domestic production.

Collecting these varieties across the continent and establishing well-managed gene banks will be critical to conserving cannabis biodiversity and valuable traits, as Asian industrial hemp takes its rightful place in The New Green (Cannabis!) Revolution.



### The nation looks to build on its heritage in the new hemp era

hen 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.

#### **Broad research efforts**

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.

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.

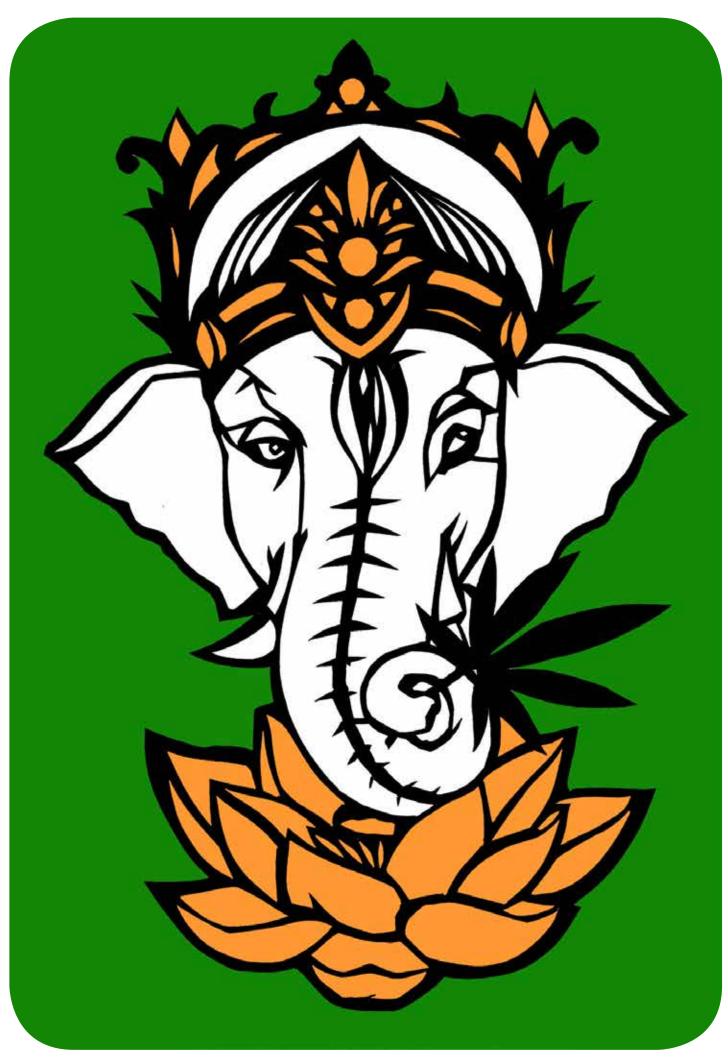
### Farmers & seeds

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. Indeed, GMO crops such as W129 BT Cotton, glyphosate-resistant GMO-wheat, and



### INDIA

Roundup Ready Soybeans, ultimately led to a vast number of farmers committing suicide all over the country.

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.

Indeed, it merely allows the farmers to survive and sustain themselves while the real commerce remains in control of wealthier interests.

#### 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.

### Indian Association has big plans after announcing \$150 million investment

The Indian Industrial Hemp Association (IIHA) has big plans as it recently announced an investment of Rs 1,100 crores (about \$150 million) for hemp cultivation in the Indian state of Uttarakhand, according to IIHA President Rohit Sharma.

The money is coming from private investors Sharma, Chandra Prakash Shah and Nimit Kasliwa, who are joining with Indian corporate groups that Shah said will be named in due course.

IIHA this past summer received a license to grow industrial hemp on a pilot basis in Uttarakand in the first licensed hemp grow in the country since 1958. The group is a consortium of associations, leading firms, researchers and other institutions who interface with government agencies and map out conditions conducive to a thriving Indian hemp industry. IIHA's network embraces a wide range of governmental ministries and authorities who are backing its efforts.

### Investment in growing, research

Sharma said the investment will go for cultivation, research and other initiatives to help advance the industry - with a focus on sustainable development that will boost the fortunes of farmers, and breathe new life into struggling local economies.

"We are opening the dialogue to contract with the farmers, lease their land and their labor, and help them survive better," Sharma told HempToday. The investment from IIHA in industrial hemp cultivation will not only propel economic growth but also give farmers a great opportunity to live sustainable lives, he said.

#### Potential for native varieties

"Our mission is to lay down the roadmap to allow the trade to flourish," he said of IIHA, who are not holding licenses exclusively but look to get others involved. "People who want to grow in Uttrakhand should contact our regional offices. We can help them get these licenses. Especially for farmers," he said.

The pilot program, now underway, is studying native hemp varieties, generating valuable data about these candidate strains and their potential for cultivation and industry. Collected in northern India, in the Kashmir region, the indigenous strains were all found to contain less than 0.3% THC, conforming to currently accepted global limits. "These varieties are similar to those found in Yunnan, in

China, for example. Humans appreciate borders but plants don't," Sharma said.

Beyond Utterakand, Sharma said IIHA has been contacted by the state of Maharashtra, where stakeholders hope to roll out their own hemp program. Meanwhile, the Association continues work on the policy front, collaborating with government to create a feasible hemp industry, and fighting for rationale THC standards.

### 1.5% THC level is proposed

The Association recently proposed a 1.5% THC limit, to include more native varieties that are well suited for industrial use but do not conform to the current extreme limit. While most of the world operates on a 0.3% THC limit for industrial hemp, some nations have already adopted a full 1.0%.

IIHA is also setting up a seed bank, to collect and conserve the many varieties. The purpose of the seedbank is not just for industrial varieties, but also for unique cannabinoid profiles, with a diverse range of cannabinoid ratios apparently identified in different varieties on the subcon-

"We're already working with varieties that have more than 15% CBD. Or with only CBD, only CBC or only CBN. Strains that have only one cannabinoid, or one major cannabinoid and some others at very low levels," Sharma said.

### Looking beyond CBD

Sharma said that when enough data and research emerges about how individual cannabinoids affect the endocannabinoid system, the purer compounds and crops that contain peak amounts of the compounds will become more valuable. "They will allow us to create dedicated formulas for different conditions. This is the future, it will take time, but we need to start now," Sharma said.

Sharma said he likes the approach to hemp in European countries and in Canada of "policy on the run," and says he feels that governments of those countries are actually listening to people, not like elsewhere, such as the United States, where theres a lot of talk but the industry struggles to get things done.

Sharma suggests that developing countries could have the upper hand in hemp as the industry unfolds. "They have the incentive to achieve more. But it will take time, maybe even 10 years, to compete with the developed markets.'

# Hamp Can.



## Lealth

- more protein than beef
- more Omega-3 than salmon
- all essential amino acids
- CBD is anti-inflammatory

# Energy

- replaces coal, oil, & gas
- makes supercapacitors
- makes renewable biodiesel
- produces biochar



## Manufacturing

- replaces all plastics
- replaces timber & paper
- replaces cotton & corn
- creates manufacturing jobs

# Planet



- requires less chemicals
- requires less water
- improves soil health
- sequesters CO<sup>2</sup>





**HEMPROADTRIP.COM** 



# The allure of India

### Legacy, vast market make a rich target for hemp investors

Nivedita Bansal Shah is co-founder of Shah Hemp Inno-Ventures (SHIV) where she manages administration and human resources, and imbues every aspect of the company with social consciousness. Trained as a psychologist and life and relationship coach, she began her professional career in organization development, working toward improving the quality of education for underprivileged students. Nivedita has a Masters Degree in Psychology from the University of Delhi, and holds certification as a Trained Positive Psychology Coach. She is also SHIV's coordinator in the company's partnership with HempToday on the first ever Asian Hemp Summit.

### HempToday: What do you think are the biggest potential strengths of the Indian hemp industry?

Nivedita Bansal Shah: Hemp and cannabis in general are nothing new for India and the Indian subcontinent. So acceptance of this plant and its products is inherited. Medicinal benefits of cannabis are highlighted in Ayurveda (Vedic science), so proving its potential for human health is not painstaking. We've

also worked with hemp fiber throughout history, particularly as that applies to textile production. We also see a strong entrepreneurial class developing.

### HT: What do things look like at the entrepreneurial/startup level in India?

**NBS**: There is a lot of interest among entrepreneurs, and the urge among these startups to work hemp into broader initiatives that help people is very strong. While Uttarakhand in the north is most advanced in the beginning stages of development, we get inquiries from all over the country.

### HT: Why should investors be interested in putting their money into Indian hemp?

NBS: India has always been an area of interest for investors and entrepreneurs mainly because of the vastness of its market and population. Investors can see returns from investments in cultivation, research and other fundamental areas initially. There are Indian entities looking into every application of industrial hemp including health and medical products such as CBD. And, of course, it's always an advantage to the

investor to get in on the ground floor of any economic movement.

### HT: What are the main remaining challenges to hemp in India?

NBS: In the process of legalization, India is at a place right now where the US and Europe were couple of years ago. We have a chance to learn from their experiences setting frameworks for the industry. There are still a lot of loose ends, and there is still not much of a supporting ecosystem in place for the industry. There's also a vast gap in knowledge of the processes involved in bringing products to market.

### HT: What are India's biggest chances in the hemp export markets?

NBS: India and the Indian subcontinent are home to many indigenous varieties of cannabis. So once the market opens up, there will be huge demand for these indigenous strains. Secondly, India provides a very interesting blend of industrialized processing and hand processing of certain end products, so the Indian products can be quite interesting.

### 5 Reasons to join HempToday.

Get your membership, and catch up with the hemp revolution!

### **PREMIUM CONTENT**

Keep up with the hemp revolution through hardhitting original content generated by HempToday journalists from a reliable global network of industry sources.

### News!

Get news, analysis, and information on policy and politics, the latest research and knowhow; the companies and, most importantly, the people — the scientists, entrepreneurs and innovators who are leading the hemp revolution.

### And More!

Analysis & Commentary Country & region reports Company profiles Executive profiles Facts & figures Investment opportunities In-depth interviews



### CONNECT

As a part of your membership, you're automatically a member of HempToday Connect, our constantly expanding Business Directory of qualified hemp companies the world over.

### **Hemn** TODAY



#### **Shah Hemp Inno-Ventures**

Categories: Advocacy, Retail, Wholesale, Textiles
Description: SHIV makes fashion accessories from hemp
textile, and produces a range of hemp massage and
theraperutic oils. The company is also involved in a project
that is building build homes in Nepal both for victims of the
2015 earthquake and for the less fortunate who vie never
had homes.

Website: http://shivhomesnp.weebly.com

More about this company:

20.02.2017 – Homebuilding project turns to Indiegogo
15.02.2017 – Nepalese, French firms in 'Hemp Boutique'
07.12.2016 – SHIV nears completion of a hemp home
11.11.2016 – German firms aid in post-quake Nepal
21.07.2016 – SHIV seeks to provide shelter in village
08.03.2016 – SHIV gets hospital project rolling
12.11.2015 – Oil crisis adds challenge for Nepalese startup 13.10.2015 – Entrepreneur looks to hemp to rebuild Nepal Phone Number: (977) 98033 19991 Key Contact: Dhiraj K. Shah

Kathmandu Nenal

List your firm online at hemptoday.net/connect

### **PRINT EDITIONS**

Full PDF versions of our special Hemp-Today print editions produced for major hemp events around the world.



+The Big Hemp Yearbook (PDF)

### FREE PRODUCT LISTING

If you're a wholesaler, you get one free product listing for three months on HempTrade, which helps hemp buyers & sellers – farmers, processors and producers - connect in the rapidly growing hemp raw materials and wholesale markets. Secure and with your sales supported by other Hemp-Today media assets.



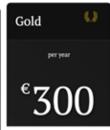


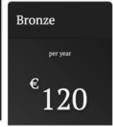
### YOUR **STORY**

Working with you, we develop a 400-word interview or feature story about your firm, products, key executives and/or services which is published on HempToday.net

### Three plans to choose from:







SIGN UP TODAY AT: hemptoday.net/subscribe



**Entrepreneur Rewards** 

### **HONOREES**

Asian Hemp Summit organizers also singled out the following initiatives for recognition:

### Kami no Toride

(Fort of Paper) Japan

A freelance creative group that aims to establish the Asakusa Taima & KAYA Museum, an experimental museum that will emphasize the culture of hemp in traditional Japanese articles (Jomon, Kimono, Shimenawa, etc.) as well as mosquito netting, sheer hemp material which is used in marriage ceremonies and as a sacred cloth to wrap the dead. The group comprises writers, photographers, designers and others, mainly in the fields of environmental issues, energy, agriculture and traditional culture.

### Konoopa

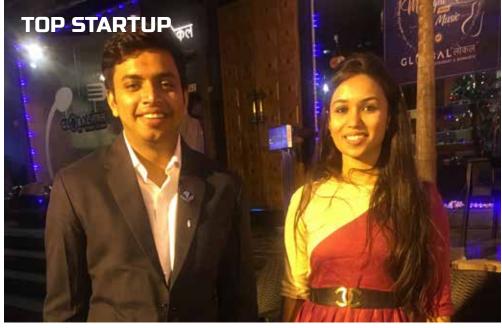
Serbia

The company grows, processes and makes machines and technology for hemp end products. Konoopa has engineered energy efficient decortication equipment to process hemp fiber and sees a market in affordable mid-range size decorticating lines. Konoopa has plans to develop machinery to make such products as paper and fiber insulation.

### **Rerooted Earth**

South Africa

An online health, wellness and artistry store that emphasizes the sourcing of products from ethical, organic and sustainable local partners. The company sells hemp-based textiles, food and medicinal/health products. Principles in the company are also launching Kaya Kollective, an online retail hemp shop that supports local businesses and offers workshops and events to further the awareness of hemp and its many applications.



Shreyans Kokra and Shika Shah started CFL two years ago

### Summit award winners have aggressive plans for growth

Indian startup Canva Fibre Labs LLP (CFL) expects to scale up this year, pushing beyond its current capacity of one ton of production daily, say the company's founders.

"We intend to take these textiles to mainstream brands and thus are actively solving problems like how the textile feels without compromising on functional advantages, and its processability on the current infrastructure of textile like spinning and weaving," said Shikha Shah, one of CVL's two founders.

Canva Fibre Labs was selected the top entry under the 2019 Asian Hemp Summit's Entrepreneur Rewards Program that honors innovative business initiatives.

CFL says it has developed an indigenous proprietary technique for processing of agricultural waste from hemp plants, with output that has compatibility with current textile infrastructure. The system offers 100% green processing in which no hazardous chemicals are used to process the fiber.

### The opportunity

The company sees an opportunity in the need for processing technology as well as the imbalance between price and quality when it comes to hemp textiles, said Shreyans Kokra, who co-founded the company with Shah when the two were classmates at Babson College in the USA.

CFL grew out of a year-long project by the partners to create a company in the hemp industry. Kokra, 25, worked in the family textile business and has degrees in finance and business. He has worked in accounting and investment banking, co-founded a marketing start-up and previously was co-head of a

textile manufacturing and technology firm.

Shah, 23, is educated in business and entrepreneurship. Her experience ranges from working in family businesses, a textile project, a filmmaking start-up, and working with American and European companies co-founding a textile manufacturing and technology company.

### Goal: 5 tons per day

Having had their ups and downs through two years after launching the company, the partners say they are now poised to execute an aggressive growth strategy.

"We are going to introduce different blends of fibres, mostly all containing considerable hemp fibres for different textile applications," said Kokra, noting the company has a goal to scale up production to 5 tons a day.

Identifying the company as an "alternative fibre and material science company," Shah and Kokra see the challenges of the nascent hemp industry. "It isn't about managing the supply chain; it's about creating a strong one from the scratch," said Shah, noting CFL will be "aggressively targeting some strategic tie-ups in the coming years."

And while hemp is at the center of their plans for development, CFL will also be probing other natural raw materials such as banana and ramie for their potential in textiles.

Mission is also clear at Canva Fibre Labs. "Just like how oil and gas need alternative fuel and a target to make it go to the masses, we see ourselves taking alternative fibres to masses and reducing the carbon footprint of this industry," Shah said

### FROM BOTANICALS TO BIOPLASTICS HOW HEMP IS CHANGING THE WORLD



THE MOST COMPREHENSIVE HEMP EXPOSITION, TRADE SHOW & CONFERENCE ON THE PLANET!

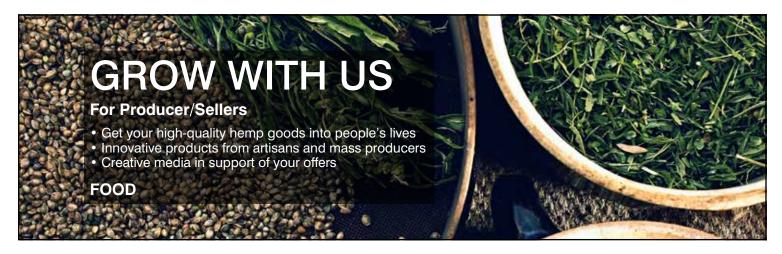
BUSINESS CONFERENCE | FARM SYMPOSIUM | WORKSHOPS TRADE SHOW | PRODUCTS | CONSUMER SHOW | EDUCATION ADVOCACY | NETWORKING | ENTERTAINMENT

nocohempexpo.com

**Sponsor & Exhibitor Registration Now Open!** 



**Tickets On Sale Now!** 













China has the biggest hemp growing fields of any contiguous market in the world.

### With government encouragement, big industrial firms moving quickly into every aspect of hemp

he 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 expand-

ing 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-billionyuan (\$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.

### Export advantages

Aside from its land mass, huge and inexpensive work force and a massive domestic market, China is geographically

### **ASIA**



300 companies participated in an International Conference on the hemp industry in Harbin this past autumn

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 Heilongjian 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.

China holds over 600 patents on cannabis applications well over half all patents for hemp registered worldwide

### Hemp for textiles

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 preformed 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 theconference 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.

Heilonjiang 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.



Notes on some of China's major hemp players

### **HMI Group**

(Hanma Investment Group Co., Ltd.)

Conglomerate that has invested in all levels of the industrial chain of hemp: breeding, planting, extraction, R&D, production and sales

- "Huoma No.1" fiber plantation has reached about 16,500 acres planting area in Heilongjiang.
- Products include mainly biopharmaceutical (CBD), new materials, food, cosmetics, textiles, etc.
- · Applying "patent pool" strategy strengthening the creation and application of intellectual property rights; establishing media information platform to expand the social influence of the enterprise, building a global product sales network.
- Plans to develop Yunnan Hanmeng Pharmaceutical Co., Ltd., a CBD extraction plant with 35% shares owned by Hansu technology investment.
- Investors are: Ministry of Science and Technology and private firms. The total investment of phase two project is nearly 350 million yuan (\$51 million).

### **CannAcubed**

(Guangzhou CannAcubed Biotech Co., Ltd.)

### Subsidiary of CannAcubed Pte Ltd. **Based in Singapore**

- Plans to build a \$150 million Industrial Cannabis Eco-Park in the region of Fuxian Lake, Yunnan
- Financial partnership with the China Health Investment Corporation (CHIC), a national financing and development fund for the health industry.
- · Eco-Park will be set over 3 locations on 33 hectares
- Planned high tech R&D facilities for research and production of cannabisbased products to address disease & health, waste, energy & environment, hemp bio-plastics & bio-fuel, ecocosmetics factory, CBD, nutraceuticals, and a wide range of other applications.
- · Developing high tech data center for cannabis traceability and global logistics & distribution; as well as a big data center, logistics center, incubation center, and industrial hemp museum.
- · In advanced discussions with Chinese state-owned telecommunication platform China Mobile (CMCC) to provide range of communications services.
- · Cooperates with the Beijing Institute of Fashion Technology on study of textiles and bio-blastics.
- Has been granted a total 100,000 hectares to cultivate, process and manufacture cannabis to be shipped out of China.

### **SkyGreen Group**

Established in 2015, Skygreen is a member of the Sky Solar International Group conglomerate

- · Production of fiber & fabric, wholesome food, bio-pharmaceuticals, building material and home furnishing, new material for industrial engineering, etc., to promote the prevalence of hemp industry.
- Planting and processing center in Northeast China, R&D institute at Beijing, global marketing centers at Shanghai, Hong Kong, Tokyo, Florence and Athens.
- · Says it follows the environmental protection guidelines during planting, preliminary processing and finishing.

### Yunnan Industrial Hemp Inc.

Founded in 2001, YIH is a subsidiary of Yunnan Hanpu Health Products Co. Ltd,

- · The company specializes in cultivation, production and processing of industrial hemp for the purpose of food production, but is also engaged in CBD products and selling by-products
- Product line includes: hemp whole seeds, hulled seeds, hemp oil, CBD capsules and extracts
- · Currently has nine different varieties of hemp in product range

### **Shanxi Greenland Textile Co., Ltd.**

Founded in 1969 as the privately owned Jincheng Textile Mill. Restructured as a state-owned holding company in 1997.

- Considered to be one of China's major hemp textile pilot plants.
- · Identified as a strategic enterprise in China's 13th 5-year-plan.
- · Has production workshops for degumming, spinning, weaving and clothing.
- · Claim to be the only hemp-production line to produce from hemp raw material to the finished products.
- · Products are mainly exported to the USA, Europe, Japan, Korea, Hong Kong.
- · Partner of brands Uniqlo, H&M, Zara, Muji and Toms
- · Goals for 2020: Sales revenue of 1 billion yuan (\$147 million); profit target 110 million RMB (\$16 million).

### Thailand

With the Thai government now allowing the cultivation of hemp for research purposes, entrepreneurs are incorporating the multipurpose plant in their products and exporting them around the world. While hemp fields are still heavily regulated and for government purposes, that's expected to change, first to meet local demand for hemp fabrics.

There is no definitive answer regarding legality of CBD in Thailand at present. Yet, Thailand's military government unanimously approved medical marijuana use at the end of last year. And there are already research centers set up in Rangsit University looking

at the medical benefits of THC and CBD and over 100 other chemicals specific to cannabis plants that all seem to play a part in curing certain diseases.

A pilot clinic in a Bangkok hospital is testing cannabis oil and other extracts in curing diseases such as Parkinson's, epilepsy and cancer.

In January 2017 a law was approved and passed by the cabinet to legalize hemp with a THC level of 1% or lower for industrial and medical purposes. The law, however, limits hemp production to 15 districts in six northern provinces; Chiang Mai, Chiang Rai, Nan, Tak, Phetchabun and Mae Hong Son. The law was supported by the country's Office of the Narcotics Control Board (ONCB).

Legal developments are

expected to make hemp a fully commercial crop by 2020, and legislation regarding decriminalization and re-classification of cannabis continues under review.

Northern Thailand has a rich history of cultivation among Hmong and other highland cultures making this the logical locale to begin, and starting with those who know best.

Since January 2018, when the new law took effect, any business may apply for a permit, grow and produce hemp and hemp-based products.But only state and state sponsored enterprises are allowed to grow hemp in the first three years of the law coming into effect. It will be 2021 before any private company can even apply for a permit.

### Japan

Despite its modest potential for production, there is growing enthusiasm for hemp, an ancient crop in Japan. Stakeholders see massive potential in the consumer market, projecting a need for significant imports as awareness of hemp products grows - especially food and medical hemp. Current day enthusiasts are working hard to pass along hemp traditions and to bring young entrepreneurs into the fold.

Japan's market for CBD products is growing almost 100% year-over-year, by some reports. This is in a market for functional foods and natural health products estimated at \$15.4 million to \$23.1 million. Japanese consumers are underserved in these markets yet highly aware of plant medicine, and have a sharp focus on healthy lifestyles.

However, in Japan, only products derived from seeds and/ or stems can be imported. CBD brands on the market include Elixinol, PharmaHemp, Dixie Botanical and HempMeds and brands from Phivida Holdings, Vancouver (via producers in Colorado and California), which entered the market in 2017 via Asayake, a CBD importer and distributor, in a non-exclusive deal.

Elixinol Japan, which has been importing CDB products to Japan since 2016, reported 94% year-onyear growth in 2016-2017.

# South

Imports to the Asian nation are rising rapidly as South Korean consumers have swiftly taken to hemp foods as a replacement for fish oil, and spurred by consumer uptake of hemp foods driven primarily by their entry onto tele-marketing programs. Along with foods, hemp has been a source of fabric for Korea since ancient times

Hemp is cultivated for bast fiber and seed in several of the numerous fertile inland valleys of the Republic of Korea, and turned into high quality commercial hemp cloth. Stakeholders say understanding traditional hemp farming and processing strategies will guide modernization of South Korean hemp production.

Recent revisions to Korea's Act on the Management of Narcotic Drugs that legalized "medical cannabis" in November 2018 allow for the importation of CBD based on its proven efficacy in neurological and brain diseases, for which the South Koreans have conducted trials.

All medical cannabis (we include CBD in this context) in South Korea is controlled by the Korea Orphan Drug Center, a government-run agency that is in charge of specialized medicines.

In order to gain access to CBD, Koreans will be required to get a letter from their doctor that explains their condition and offers CBD as a treatment or remedy.

One indicator of the South Korean market potential for CBD is the pace and magnitude in the growth of hemp-based foods over the past three years. Koreans are highly aware of and actively look for plant-based, organic foods and compounds for their health benefits.



### **Kazakhstan**

Vice Minister of Agriculture Yerlan Nysanbayev has added his voice to the growing list of prominent Kazakhstanian figures calling for hemp production to be embraced. Nysanbayev was recently speaking at an interdepartmental commission meeting on legislative activities as the state is currently drafting a number of laws in relation to conservation and plant protec-

"We are talking about all types of plants, tree crops, bushes - everything should be protected by the law," he told attendees

"Hemp should be considered as one of the plants of the plant world. It cannot be considered as a negative plant. Therefore, this plant species should be preserved, because it is one of the links in the long chain of biodiversity. The loss of any plant or animal world, I think, is fraught with consequences for humans and ecosystems," said Nysanbayev.

Kazakhstan authorities have long battled with the wild cannabis crops which grow freely in the Chui Valley, a tourist attraction for cannabis enthusiasts. However, in recent years

the state has taken steps to boost hemp production.

KazHemp, perhaps the only hemp company in Kazakhstan, planted test crops in four regions of the country in 2016 to determine which soil provided the best yield. Their research concluded the optimal conditions exist in The Almaty region.

Also in 2016 plans to start hemp paper production in Kazakhstan were first mooted. The idea was strongly supported by Dariga Nazarbayeva, the then Deputy Prime Minister and the daughter of the current Kazakhstan President.

"Kazakhstan does not have its own paper. Everything is imported and it is reflected in the high cost. Starting Kazakh papermaking production is extremely relevant, including in favour of the print media," she said at the time.

Hemp cultivation in Kazakhstan continues to expand, and last year the Agriculture Ministry said around six square kilometers of hemp were cultivated in the southern Almaty region. The hopes are to increase that to 40 square kilometers this year. A processing plant opened towards the end of 2017 to serve the region. Currently, harvested seeds are exported to the Netherlands while fibre is exported to Russia and China. Although Kazakhstan officials hope to open new markets.

– Brian Houlihan

### Mongolia

The Mongolian government is developing a strategic plan for agriculture to create an economic growth model. The new policies, aimed at creating scalable employment and diversifying the country's economy by focusing on sustainability, innovation and new technologies, are driving public finance programs - and giving the agricultural sector momentum. Hemp fits into that strategy perfectly, stakeholders say. With engineering and agricultural knowhow in a rapid development phase in Mongolia, early entrants can tap into a rich pool of human resources coming out of the country's historically strong educational system.

### Sri Lanka

Within the country Cannabis Sativa can be bought legally through Avuverda herbal shops. The country is planning to produce around 25 tons of medical marijuana by the end of this year. The production from of approximately 400 ha will supply cannabis to the traditional indigenous medicine sector and potentially it will be exported as well.

# 'Critical time' for stakeholders

### Exponential growth calls for a clear playing field

Despite a busy schedule of international consulting commitments the world over, Germany's HempConsult GmbH continues to dedicate its services to shaping the European landscape for a vibrant hemp industry.

"It's a critical time, as the business grows exponentially, to set a clear playing field for hemp stakeholders," said Daniel Kruse, CEO at the Dusseldorf, Germany-based advisory. He is overall looking back to 24 years of hemp business, including being founder and CEO of Hempro Int. GmbH & Co. KG, a leading European food producer. Kruse also serves on the board of directors of the European Industrial Hemp Association, where his experience from Hempro Int. and HempConsult's perspective has proven invaluable as that organization interfaces with broader European Union institutions.

### Major voice in Europe

Perhaps most importantly, HempConsult is playing a major role in the European hemp industry's efforts to raise the allowable THC level for industrial hemp to 0.3% on the field, an effort that would bring Europe to a par with most major hemp nations around the world.

The consultancy has also provided a major voice in EIHA's efforts to gain rational levels for THC in hemp foods as the Association coaxes the European Food Safety Agency (EFSA) toward adopting a more rational approach. As a matter of fact Kruse and his team at HempConsult laid the groundwork for that effort in 2015 by finally convincing EIHA to take "THC in food" on the agenda. Back then the company found the most important "key" to tackle the current guidelines: Hemp is treated very unfairly when it comes to the "uncertainty factor" in EFSA's risk assessment.

### Interest in CBD is high

Meanwhile investors and startups are clamoring for information and guidance from HempConsult on how to get into the CBD business amid an upsurge in what's clearly proving to be the pace-setting sector in the overall hemp industry, according to

"We've had a huge increase in the number of queries about CBD in the past year. Companies want to know about the legal issues, how the value chain works and what the market looks like overall," Kruse said.



HempConsult led development of Hemp Factory, a solar-powered food processor

'We've had a huge increase in the number of queries about CBD in the past year.'

Daniel Kruse, CEO HempConsult

### 24 years experience

HempConsult is well positioned to deliver that valuable advice, having 24 years of experience in everything from farming, food production and organic certification to legal and tax issues across all hemp sectors.

When it comes to the "critical topics" THC and CBD, the company has long been involved in efforts to help make clear rules for the valuable compound in the European Union. In 2015 HempConsult joined with the Germany-based nova Institute to produce essential CBD and hemp food market studies.

And HempConsult was one of the first major global industry players to begin to quantify the overall hemp sector by compiling worldwide market data as far back as 1996. That initial research is ongoing, summarizing regularly updated market reports on a range of indicators.

#### Uptick in startups

HempConsult has a global client roster of established, bigger hemp players, but Kruse said he's noticed a drastic uptick in inquiries from hemp startups of all kinds. "That's really encouraging because it reflects a more enlightened pool of entrepreneurs who know they can benefit from a highly experienced partner as they get their businesses going," Kruse said.

And it's helping those nascent enterprises that give HempConsult a special payoff. "We love working with creative entrepreneurs. We know we'll thrive on ideas and creativity, as an industry and as advisers," said Kruse, whose consultancy was sponsor of the first ever Innovation Awards at last year's European Industrial Hemp Association conference.

#### Solar-powered Hemp Factory

The most exciting new venture Hemp-Consult has guided is Hemp Factory, a food processor setting up a fully solarpowered facility in Borken in northwestern Germany near the border with Holland. Kruse will serve as CEO in the enterprise, which is the biggest hemp food producer in Central-Europe.

Kruse said the development of that facility reflects a broader interest among HempConsult clients these days who are looking for all kinds of technology to process hemp for all of its potential end

"The market demand for all kinds of machines for the industry is vast," said Kruse, noting that this critical part of the industrial hemp value chain is itself a prime area for research, development and investment.



### Finding markets with rational regulations is key to growth for Poland's fast-moving CannabiGold

roducers of fast-rising CBD brand CannabiGold say they're focused this year on global expansion of their bulk and private label offer and 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 the opening to new markets - including Asia, based on diligent mapping of regulatory frameworks and aggressive product development, according to Kramarz.

"CBD not only has a wide range of benefits, but offers an array of possibilities for delivery through more everyday products such as edibles, chewing gum and soft drinks," he said. "The range of products we could offer is almost unlimited. The real challenge is to identify markets with 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

### Investment to fuel growth

The product development effort will be 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 one of the biggest acquisitions



"The range of products we could offer is almost unlimited."

### Jacek Kramarz

Sales Director, HemPoland

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

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 has 80 employees, processed over 32,000 kg of dried flowers and 310 kg of organic CBD in form of

various extracts in 2017.

# CannabiGold

Golden CBD oil



# From seed to Golden CBD oil pure quality, pure nature

CannabiGold is a major, licensed producer of the industrial hemp located in Poland. We offer advisory service and brokerage for the hemp industry in Poland, managing the whole process from gethering EU control seeds, sell preparation and sowing, to harvesting and

EU certified seeds, soil preparation and sowing, to harvesting and processing the crop. Having full certiful over the and-to-end processes we can guarantee uncontested quality of our products and confirm that our homp subsets, rich in naturally occurring phylocannabinoids are produced from 100% certified European Hamp, free of productions, homey matals, solvents and synthetic committeets.

Our production site is equipped in a certiful edge, custom-engineered Supercripted Finial Extraction (SFS) device made specifically for producing heap extracts. Thanks to our dedication to hemp, our procucts contains not only full spectrum of connebinates noturally present in Hemp, but also either natural substances patentially bereated for your health (e.g., terpones, flowerolds).

Cannels/Solid is a top quality, state of the art food supplement, rich in naturally occurring cannels/neits, terpenes and flavonoids. Our products contain a guarantenel concentration of CBD, confirmed daily in our prefessional laboratory.

All Cannels/Golid products contain returni hamp extract, CO2 extracted in our privately-awared facility, under the close supervision of PhD scientists with vest experience in immovetive extraction methods. Cannels/Golid is fully made of industrial hamp, grown and processed in the EU, meeting all EU standards and regulations.



Heartfelard Sp. a c.o. **⊠hurt@carenablgeid.**pl +40 663 696 363 www.comabineld.eu

# SHIV continues rapid growth

### Nepalese hemp firm expands across all units, opens consultancy

epal-based Shah Hemp Inno-Ventures (SHIV) is coming off a busy year in which it expanded across all business units and launched a consulting division, according to Dhiraj K. Shah, co-founder and CEO.

"It's been an exciting year with a lot of progress," said Shah, who founded the company with his wife Nivedita – primarily in response to housing needs after the 2014 earthquake that devastated the country. "Almost since we started we've fielded a lot of calls from people looking for solutions, so moving into consulting happened rather naturally," Shah said of the company, which has developed into a leading voice for hemp in Asia. SHIV also is partnering with HempToday on the inaugural Asian Hemp Summit.

### Working with farmers

SHIV works with local farmers, processors and manufacturers to deliver hemp products by exploiting Nepal's abundant "wild crop" — uncultivated, naturally occurring cannabis fields — providing jobs and spurring local economic development in the poorer regions of Nepal. SHIV has a hemp construction division and makes building materials, health and beauty products, textiles and textile accessories

Over the past year, SHIV's construction division completed projects for residential and professional use, and has a number of additional builds in the pipeline, Shah said. The company this past year also developed an ensemble of SHIV-branded products for construction including hemp shivs for wall and render application, as well as a binder and additive mixture for hempcrete.

SHIVs textile unit is under "hEmpowering Bottom Up," an initiative that works to advance economic and social development by training and employing Nepalese women.

### Construction



A recently completed textile workshop built with hempcrete.



A SHIV-built family dwelling from hempcrete; on a mango tree farm.



Janakpur Trauma Hospital, a proposed 100-bed facility in southeastern Nepal, is planned as one of the biggest facilities of its kind. To be built from hempcrete.



SHIV will begin to build this guest house for travelers enroute to the Himalayas in November 2018.

### Health & Beauty

SHIV advanced its line of hemp soaps, shampoos and oils with Massage PRO, which reduces pain in muscles and joints.









### **Textiles**

SHIV also recently developed a number of new products in its textile division such as coffee sacks, tool bags, yoga mats and backpacks. The company offers customization of bulk orders to corporate customers, and is now offering non-woven products



such as hemp rope and insulation (blankets, pillows, quills, etc.) and finer yarns for 100% fine hemp fabric.



Education

Advising on projects in all climates and of all sizes around the world since 2005.

Contact Steve for details steve@hempbuilding.com www.hempbuilding.com

# 'Fast, radical, different'

### Ingenuity is key in the next industrial revolution

Phil Warner is CEO and Chairman of Ecolife Science, which works to advance new-era products for a sustainable future. He has more than 20 years hemp industry experience in China, Bhutan, Thailand, New Zealand, Australia, Europe, Africa and North & South America. Warner set up the world's biggest, most diverse cannabis gene seed bank. His former company, Ecofibre is an internationally recognized enterprise in hemp production and market development which invested more than \$15 million into research and development of new high-yield commercial plant varieties, agriculture and processing.

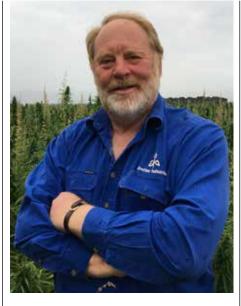
### HempToday: What's your take on the whole question of using hemp bio-mass to create fuel? Is that a viable long-term

Phil Warner: I think there are far better, more economically viable uses of hemp biomass than for fuel. Globally we are in desperate need of recyclable bio-materials that can be grown and supplied domestically for day-to-day consumer products. The issue really is that we haven't developed technologies and systems to convert bio-materials that can do this better than hydrocarbons yet. This "system" is what I intend on researching. A device that can deconstruct bio-materials and reconstruct them in the forms we desire, then recycle them again and again.

What I imagine is the use of the science of "Chemurgy" using high tech equipment, sort of like a 3D printer but instead of hydrocarbon based materials, the raw materials are bio-based and recyclable, several times over. It is not going to be easy to achieve this but it is inevitable that something like this has to be done otherwise climate change will change our lives well beyond what is already anticipated. However, if we are able to recycle domestically, even locally, we will see a reduction of over 50% of the need for materials we presently dump in landfills.

By having things built with the purpose of recycling, with manufacturing systems built to do just that, we will reduce the need to produce new feedstock to make things out of. The knock-on effect is the reduction in the use of energy creating new feedstocks, the reduction and waste in transport of raw materials and the transport of finished goods.

HT: How do you see the potential for hemp in everyday things like paper and textiles? How fast do you see those sectors



### advancing?

PW: Hemp is a terrific feed stock, it is relatively uncomplicated in its biochemistry compared to other organically derived feedstocks such as trees. In its nano form it has enormous potential. For example, if we think about it enough, we realize the fundamental technology for textiles is 6,000 years old (spinning, weaving, cutting, sewing) and it hasn't changed. It is obvious it's time we moved to a higher level of technology similar to a 3D printing type machine to make clothing. In the US, the average individual's consumption of textiles is 23kg annually. If we could deconstruct and reconstruct those materials time and time again, we would possibly only need 23kg of materials in a lifetime.

### HT: Aside from being associated with hemp, what kind of companies and applications is Ecolife Science looking to invest in?

PW: Ecolife Science is looking at the biodiversity of the entire range of plants, not just for materials to make things out of but also food and medicine. Hemp has many assets in this regard but there are other underutilized crops that also can be used.

It is common knowledge that 60% of all vegetative food consumed is in the Big 4 crops, wheat, soya, rice and corn. The problem is, the Big 4 aren't the best food we can consume to help with the general health of mankind. We need better nutrition, and hemp and other underutilized crops can help in that regard.

We often hear the next great medical discovery might come from the jungles of the Amazon. There are numerous plants that offer more natural medicines. It is my belief we now have the tools and capability to analyse these plants to see what may be of use in a way we have never considered before. Food, Medicine and Fibre. So why stop at hemp?

### HT: What kind of people do you look for in this context?

PW: People who have imagination and don't stop just because it seems highly challenging. Ultimately someone has to do something fast, radical, different. I fully believe we can fix things if we have the will to make it happen. What I am really talking about is the next industrial revolution.

### HT: Take us on a world tour: How do you see things at the global level. Which regions or countries would you point to as ones to watch?

PW: Ingenuity is the key, so the new discoveries and methods are most likely to be where the need is greatest and the political environment is conducive to supporting radical ideas for industry to meet consumer demands. It will be hard to pick where or what to watch other than to say it is likely to be a collaboration from different countries and regions of like minded people who all have a similar goal. Putting our ideas out there is the beginning.

### HT: How important are education and research in the mission you've set out for **Ecolife Science?**

PW: The aim of Ecolife Science is moreover to support radical ideas and research. While there are existing concepts of what needs to be created to overcome climate change I am sure there are other concepts that may even be better. We support anything that has a reasonable potential.

### HT: What would be your advice to a young entrepreneur or startup who wants to get into the hemp industry?

PW: A successful industry depends on a number of successful businesses throughout the entire value chain from plant science to finished product. We all have different capabilities. Rather than try to do it all, find other businesses that are either side of what you can do, understand their issues and work towards a making a success. Most of all, learn from others who have had similar challenges, draw knowledge from history. If you don't need to reinvent, it will save you time and money.

### Join us soon for the HempToday experience!



"Charming and intimate. A rare opportunity to meet with passionate leaders of the world hemp movement."







"Nothing less than a game changer for us."

- Nivedita, Nepal



"It was beautiful to get in contact with people from all over the world."

- Heinrich, Germany





"A key event for international leaders of the hemp community."

– Haile, France



"This event gives hope; together we can change the world."

– Wolf, Belgium

"Any new investor or entrepreneur MUST attend to jump-start their knowledge and contacts."

- Richard, USA



"Great teachers and participants."

- Elisabeth, Holland





Deep Green Building

February 21-23, 2019



August 23-24, 2019

### HEMP MACHINES &TECHNOLOGY

May 24-25, 2019

### **HEMP2020 Business Summit**ENTREPRENEURSHIP & INVESTING

October 25-26, 2019



### Hemp TODAY SUMMIT SERIES





# Deep Green Building 2019

### Hemp-Lime Construction

3-Day Immersive Course • Feb. 21-23, 2019 HempToday Center • The Palace at Nakło • Lelów, Poland



### Sign up Now • Limited to 25 participants 3 Days • €699+VAT • Includes all meals

We're inviting entrepreneurs, architects, engineers, researchers, managers and business & trade professionals to join us as we explore hemp-lime building and the hemp construction sector, push forward strategies for creating healthier living spaces and do our part to help reverse the damaging effects CO2 emissions.

Three-day Immersive Course: Whether you want to start your own hemp construction company, set up a business serving a sub-sector or supplier niche, or build your own home, HempToday Institute's (HTI) three-day Deep Green Building experience is a unique opportunity to get in-depth knowledge and practical skills quickly.

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

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

Ask about our scholarship program for students & startups!

### Course Instructors









John Patterson-Tiny Hemp Houses

hemptoday.net/events/deep-green-building; call +48 602 336 685







