

ANALYSIS: Florida's Cannabis Divide

Hemp TODAY

Q1 2025

Voice of the Global Hemp Industries

REBUILDING UKRAINE

Sergiy Kovalenkov
of Kyiv-based Hempire

A true and green ally

Hemp emerges as symbol of resilience

Hemp in Ukraine

Map: Where it is grown and produced

A \$25m hemp complex

Industrial park nears completion

To rise from the ashes

Ukraine aligns with EU's PHOENIX project

Hemp & Carbon

NOT SO FAST NOT SO EASY

Developing credits can
be complex & expensive

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IS THC-FREE CBD A THING?

Distributors in Japan
facing restrictive rules

USA

'DIVERGENT PRIORITIES'

Hemp lawmaking is
a tough row to hoe



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THE LAUMETRIS KP-4 HEMP CUTTER



RETTING

KP-4 leaves cut hemp evenly distributed on the field for a proper start to the retting process

TEDDING

Short cut length allows use of tedder, evenly turning hemp for consistency and quality

RAKING

Shortened length allows use of a rotary rake to handle the hemp, improving harvest efficiency

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These improvements in the field operation in turn allow hemp to be baled in a more conventional fashion

INFERIOR METHODS



SELF-PROPELLED

Expensive, prone to break-down



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Slow and inefficient, hemp is cut to long, unmanageable lengths



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SPECIFICATIONS

Type:	trailed, pull type harvester	Transportational width:	2.5 meters(8.5 feet)
Operational width:	2.8 meters(9 feet)	Weight:	4400 kg
Working speed:	14 -16 km/h (8-11 mp/h)	Hitch Type:	CAT3
Cutting units:	4	Suggested HP:	tractor with adequate 3pt lifting capacity of 6000lbs+ generally 145hp+
Distance btwn cutters:	600mm(2 feet)		
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Hemp for carbon credits? Sure, but not so fast and easy

Last year was a promising year for permanent carbon removal, with 78% growth compared to 2023, and the release of EU's Carbon Removals and Carbon Farming (CRCF) Regulation.

While high- to low-tech biochar suppliers are still among the leading suppliers in the voluntary market, the EU framework will also include carbon storage in long-lasting products, such as energy-efficient building materials that serve as carbon sinks.

This is good news for the industrial hemp sector, as it reinforces the potential for stakeholders across the value chain to financially benefit from hemp's net-negative carbon footprint and high CO2 absorption capacity.

Quality still wins the race

As the carbon market evolves and regulations emerge, the demand for high-quality, permanent carbon removals continues to drive sales. As awareness of this complex and growing industry increases, repeat buyers accounted for 91% of total sales in 2024.

Quality labels, like certification from the International Carbon Reduction and Offset Alliance (ICROA), are becoming increasingly important for credibility, though the Alliance currently covers only 15 specific carbon offsetting and reduction methodologies.

Industrial hemp suits the methodologies of biochar and building materials, whereas carbon farming is to be seen separately as it comprises a whole set of techniques that include general farming practices and growing cycles, and goes beyond just industrial hemp. Although there are high-quality methodologies that are ICROA-certified, for example, the Global Artisan C-Sink Guidelines by Carbon Standards International for artisan biochar, or the Biobased Construction Materials by Riverse, there aren't many known hemp projects yet.

Removal for 100 years

Although industrial hemp clearly has the potential to fit into these methodologies, it remains challenging to build a carbon removal supply chain as an income sidestream, because meeting the quality parameters is not an easy task.

To be competitive, a Carbon Dioxide Removal (CDR) credit must



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meet key criteria: it should ensure CO2 removal for at least 100 years, be irreversible, and achieve a strong net-negative impact, meaning it removes more CO2 than it emits. This requires thorough life-cycle assessment. Double-counting must be avoided, especially when biochar or building materials are involved. Lastly, verification should rely on comprehensive digital reporting, measurement, and validation tools, ideally free from conflicts of interest.

Complex and expensive

Following all these requirements when developing a project and building a financially sustainable carbon credit income is complex and needs time and resources. These resources are well spent, as neither the industrial hemp sector nor the carbon credit market can afford a loss of image. Long-term recognition and the ability for stakeholders to benefit from their positive climate contributions depend on maintaining a strong reputation.

The main challenge for hemp farmers focused on components other than the stalk, which holds the most carbon, is that selling hurd in bulk may offer better financial returns than using it for biochar in carbon removal projects. Additionally, high-tech biochar projects require significant investment and complex planning, making them viable only for large-scale operations processing thousands of tons per year. These setups typically use dust as input and benefit from the excess heat generated during pyrolysis.

Artisan . . . biochar

Artisan biochar production using low-cost, easy-to-deploy methods such as Kon-Tiki kilns or soil pits offers a great starting point for operations involving smallholder farmers, and can create an additional income stream alongside their main crops. The biochar can be produced, mixed, and applied directly on the same farm, providing benefits within the local ecosystem.

These projects have important co-benefits, especially for farmers in regions like Africa, Latin America, and Southeast Asia, who are disproportionately impacted by climate change. As these initiatives expand, they can gradually adopt more advanced technologies, turning small-scale biochar production into mid-tech operations that professionalize the supply chain and open up new revenue streams.

Given the current market dynamics, using high-quality hemp hurd for biochar is unlikely to be more viable than its use in building materials unless hurd prices drop significantly. However, for building material manufacturers with climate-neutral operations, developing a carbon-removal supply chain can be financially viable. Factories still dependent on fossil fuels could use the CO2 uptake of hemp as offsets, but only net-negative carbon certificates can be sold.

To achieve net-negative production, manufacturers must follow standardized life-cycle assessment guidelines to better understand and improve their operations.

Who gets the credit?

Achieving a net-negative supply chain requires collaboration among many actors, yet it's unclear how carbon benefits should be fairly distributed. Farmers provide raw materials with CO2 absorption potential — an aspect that has historically not been factored into prices. If manufacturers turn this material into a carbon sink, it adds value but also increases costs, making the products less competitive.

Consumers also play a role, as the carbon credit depends on the material's full usage phase. If the building material is later deconstructed and disposed of, the credit may lose its value. The manufacturer currently bears the cost and responsibility for project development, carbon-sink management, certification, and ongoing expenses — and thus typically receives the financial return.

However, it's important to incentivize farmers to supply raw materials with a high net-negative carbon balance. Manufacturers and farmers need to engage in conversations to align incentives in supply contracts, ensuring long-term collaboration in the fight against climate change.

The author is the Co-Founder and Co-Managing Director of [CarbonConnect GmbH](#), Hamburg.



New Upgrades at the Cretes Technology Centre

For the past year, the Cretes Technology Centre (CTC) has been a driving force in fibre processing innovation, welcoming over 100 visitors from across the globe. The facility continues to provide manufacturers and researchers with real-world insights into flax and hemp processing.

Enhanced Testing Capabilities

With 25 structured test runs, the CTC has offered hands-on experience, from quick trials to full-scale capacity tests lasting several days. These sessions play a key role in helping customers refine their fibre processing techniques.



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Curious to see these upgrades in action? Visit the Cretes Technology Centre and discover how our innovations can benefit your fibre processing needs. Book your visit via info@cretes.be

Neoliberal marketing and the illusion of corporate goodwill

All that you think, believe, and feel is the product of someone else's imagination, and the "why" is usually money. Even what you wear, eat, and drive is because of some marketer getting paid to get you to do it. It's a real field of study, a soft science more psychology than business. I even received a "Bachelor of Arts in Management (Marketing)" in 1989. Originally the father of the field called it "Propaganda," which was a more accurate descriptor anyway. You are convincing people to believe something new, whether that Pepsodent makes your mouth clean or to vote to Make America Great Again. . . again.

The marketing of ideas and political parties is not much different than marketing toothpaste or deodorant, and with the current use of identity politics, it might even be easier. Today, people will only "see it when they believe it." Having a segment pre-disposed to believing every lie they are told is the dream demographic of every dictator and marketer.

Sidestepping

I explained industry jargon in *Seedly!*, my book about hemp food. "Neoliberal marketing" is a primary tool for many brands today.

One aspect of "neoliberalism" is the movement to pay corporations to do the functions governments typically perform. From prisons to armies, data collection to surveillance, over-paying corporations to do the work we already pay the government to do conveniently side-steps Constitutional protections while rewarding a buddy of someone at the top, hurting public sector unions and employees and ultimately citizens.

And to the benefit of the dictator, neoliberalism requires state/private collaboration. To work against the interests of the people and enrich one company instead needs bureaucrats and politicians free of conscience and principles. Republicans have been telling us for decades that government is the problem, now in power they intend to finally prove it. Fascism infects the heart as much as the body politic.

The idea that corporations should be paid to do what we already pay others to do eventually morphed into neoliberal marketing: "pay us to fix the ills of the world, starting with this purchase." Full disclosure: I had a hand in that movement. In 1988 it was a legitimate point of marketing differentiation between our



RICHARD ROSE

small tofu company walking the talk and our multinational conglomerate competition, natural foods as a lifestyle vs just a career. In marketing terms: "differentiation by humanity." Not coincidentally I started studying marketing the year we instituted our "green tax."

Shifting the conversation

Few were doing good while doing well. Patagonia was a notable exception. And with major differences in our approach to our food between the two companies, we were at a power disadvantage in the old paradigm, so I wanted instead to shift the conversation to that of character and values, being conscious in business versus not. We were decidedly different; might as well run with it.

We budgeted 5% of profits to fund our philanthropy and did legitimate good, from helping protect temperate rainforests in Canada (despite loggers' protest and boycott at Safeway) to donating tons of food after Hurricane Andrew. The multinational conglomerate did none of that.

I believe that all business has an adverse impact on the planet. Even the most environmentally-conscious companies use natural resources in the manufacture, packaging, shipment, and promotion of their products and services. This was a way to give something back to the earth from where those resources came.

We donated about \$40,000 to environmental groups (Rainforest Action Network, Sierra Club of Western Canada, Cultural Survival, and Earth-Save Foundation) in addition to the more than \$84,000 in product to the Second Harvest Food Bank. Most of our office paper was wood- and dioxin-free (made from vegetable-based Kenaf), and all other paper was made from recycled fiber.

I used the green tax again with HempNut, Inc. It helped fund NORML and the Hemp Industries Association and underwrote the start of the dues-free Hemp Food Association. The quarter-million dollars we spent marketing hemp food in the '90s is one reason it soon became hemp's first huge segment, hundreds of millions of media impressions.

Once in the wild, that idea eventually devolved into today's neoliberal marketing. While an effective if novel and desperate strategy for us back then, taken to its logical conclusion, paying corporations to do good with the money they overcharge you is a horrible idea today.

A business is a non-sentient being with the sole legal purpose to take as much money as possible from you and give as much of it as possible to the owners. Giving them even more ostensibly to give away for good is a recipe for abuse, many even use it for marketing purposes but never make the disbursements. In the late '90s, when we checked on one early hemp-seed company's alleged "1% for the Planet" donations, the nonprofits replied "whom?"

And the whole "percentage of profits" idea has been leveraged to the max by the film industry, where massive blockbusters may never return a profit on paper. One might as well say "100% of profits for the planet" if you have no profits. While it is technically true, it makes a mockery of the whole idea.

Thus, giving them money instead of a better entity directly is just cutting marketing expenses for the owners. Haven't you noticed that the companies engaged in this practice have high prices? It would be better to cut their price by that 5% they give to their buddy's NGO than to leverage it for a halo effect.

It also psychologically relieves people of the burden of actually having to do the work of social justice themselves. Much like online petitions, it takes the wind out of the sails of activism one bar of soap at a time.

Is free will dead?

And now it can be combined with "effective altruism," with no limits on behavior since the ends justify the means. Anything they do in pursuit of money to give away is acceptable. And I do mean anything, see SBF.

Using neuroscience, companies now know exactly what to tell you and how to tell it to get you to believe whatever they want. Coupled with AI and Bots, your free will is dead.

It's better to just donate your time and money directly to causes you support, don't delegate that to a CEO eyeing quarterly results and his bonus.

The author writes and produces The Richard Rose Report. He is a senior advisor to HempToday





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Growth Ahead

As technology advances, so will the hemp industry

PETER DÜSHOP *co-founded Forever Green, a family-run hemp company in Vanderhoof, British Columbia. With extensive experience in growing, harvesting, and processing industrial hemp, Düshop led Forever Green to become North America's first dealer for the Laumetris' KP-4 harvester, purpose-built equipment for large-scale hemp harvesting. He is now helping to introduce the KP-4 to farmers worldwide.*

HempToday: How would you describe the current state of the industrial hemp fiber market, particularly in terms of production capacity and infrastructure?

Peter Düshop: I believe over the last two years the industry is finding its footing with the right investments coming online. There are a lot of willing and able people who I believe see the long-term vision of industrial hemp.

HT: The hemp fiber subsectors (hurd and hemp bast fiber) seem to be expanding steadily. What innovations or advancements do you think are crucial for its continued growth?

PD: Sometimes, the most valuable lessons come the hard way. On the ground level, we've observed situations where groups have struggled to maintain relationships with farmers after equipment failures – whether it's burning out machinery or assuming that conventional harvesting equipment would suffice. This has highlighted the need for specialized equipment, such as the KP4, an essential tool for farmers, helping mitigate those challenges by providing proper harvesting solutions. On the downstream side, the continued standardization and development of testing methods by organizations like CHTA, ASTM, and others are crucial. These efforts will help better characterize hemp off-takes and, ultimately, drive the growth of the market.

HT: What are the primary industrial hemp products derived from stalks that are driving demand at the moment?

PD: In North America we see the animal care, construction material and non-woven markets being the biggest drivers right now. Secondary processors and end users are finally starting to pull the demand for these products.

HT: What makes the KP-4 harvester stand out as the best investment for

fiber hemp farmers?

PD: For early entrants into the industry, the KP4 offers the best opportunity to obtain a representative sample of the hemp crop in their region. This sample can then be sent to various processing and decortication manufacturers for testing, which is crucial before making the larger, more expensive investment in processing. As I mentioned earlier, the KP4 serves as a farmer mitigation tool, providing the necessary equipment to reduce risk to other machinery. For those already working with processing equipment, the KP4 enhances farm management, boosts efficiency, and improves both processing and the quality of their hemp off-takes.

HT: What specific features of the machine make it particularly suited for harvesting hemp stalks efficiently and consistently?

PD: The KP4 is a robust, heavy-duty piece of equipment designed to withstand the tough conditions that hemp crops impose. It was developed by farmers with a focus on ease of maintenance and reliability. Unlike many machines that use complicated hydraulic systems, the KP4 is built with simple, proven technology, ensuring dependability and long-term performance. This design allows the machine to handle the demands of harvesting hemp efficiently and consistently.

HT: Elaborate a bit on the KP-4's capacity in terms of acreage or tonnage it can handle per day. How does this compare to other methods and technology that are being used to bring in hemp from the field?

PD: This is an excellent question because it highlights the variety of conditions we work under, including field sizes and terrain. In ideal, straight conditions at 10 mph (16 km/h) – though we've seen

operators push the machine to higher speeds – you can cut roughly 11 acres (4.5 hectares) per hour. However, farming is full of variables, so we typically advise that operators plan for 50-75% efficiency when considering those numbers. Over the course of a season, we generally recommend the KP4 for about 1,000 acres, though we've seen operators push that to over 2,000 acres with a single machine.

The KP4 is a cost-effective solution for the industry to establish itself. Prior to this, the alternative was often large, self-propelled units, which are 7-10 times more expensive than our cutter. These machines also came with their own set of challenges, including cost inefficiencies that would be unsustainable for an industry in its growth phase.

HT: With increasing interest in hemp fiber for textiles, bioplastics, and construction, what trends do you think will dominate the market in the next 5-10 years?

PD: I believe that as better harvesting tools, improved on-field crop management, and more advanced processing technologies come online, we'll begin to see increased volume production with a clearer understanding of quality and standardized properties. This will build greater trust and certainty in the market, which I expect will drive the development of new product categories. Additionally, I foresee significant strides in the textile space, particularly with hemp making its way into apparel, marking a major shift in the industry.

HT: In your view, what needs to happen—technologically, economically, or politically—for the industrial hemp market to reach its full potential?

PD: I believe we're heading in the right direction. On the technological front, the equipment already exists, and new innovations are continuously being explored. Economically, people are finding their niches within the market, and with the rising costs of many other goods, hemp has become more competitive than it has been in recent times. The collaboration within the industry has been impressive

“Take the time to validate and refine your ideas before diving in.”

– Peter Düshop



compared to where things were just five years ago. Politically, some countries have a clearer grasp of their regulations than others.

A key challenge, I think, lies in the reluctance of certain groups to fully recognize industrial hemp as a distinct sector. However, as the market matures and the true commercial and industrial applications of hemp become more evident, I believe it will eventually be regulated as casually as, say, your morning poppy seed bagel. But, of course, that takes time.

HT: What lessons have you learned from the challenges you've faced in the hemp business, and what advice would you give to someone looking to enter the industry?

PD: One key lesson we've learned is the value of taking incremental steps toward our goals. When we first started, there was so much we had to learn on our own, and we were okay with taking a bit longer to avoid the risks of failure and financial loss. Essentially, we traded time for money and mitigated our potential financial exposure, so we were comfortable with things taking a little longer.

For those entering the industry now, my advice is to get involved with strong, hemp-centric organizations and groups that align with your area of interest. Don't hesitate to ask plenty of questions, and take the time to validate and refine your ideas before diving in.

HT: And what would you tell potential investors?

PD: I would tell potential investors that the industrial hemp space offers a unique opportunity to get involved in an industry still in its early growth stages, but with a promising future. The world is actively seeking better alternatives to traditional resources, and regardless of one's stance on environmental issues or climate change, we should always aim to do better.

Industrial hemp stands out because it offers a sustainable solution that not only does things better but can significantly reduce our reliance on resources that may not last forever or are increasingly needing to be managed more carefully—both regionally and globally. In addition, hemp can help strengthen sovereign reliance, offering countries more control over their own resources and reducing dependence on external suppliers. This creates value across markets and opens doors to new industries as the sector continues to grow.

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Gear driven, Durable parts
Stainless steel rollers
Minimal maintenance

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Capacity: ~50kg/hr
Dimensions: 80cm X 200cm X 125cm (32" X 79" X 49") Weight:
260kg/575 lbs



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Navigating Hemp

Industry has a long way to go on trust and transparency

BRAD TRUMAN is a Research Analyst at consultancy Canna Markets Group. He holds a Bachelor of Science degree in Civil Engineering from Pennsylvania State University. After four years working as an engineer, he worked as a data analyst in the energy sector. He is a specialist in Tableau, designing and developing dashboards that provide business insights. A Pittsburgh native, Truman is also a DJ, and occasionally dabbles in house flipping.

HempToday: Talk generally about hemp and the information that is out there? What can we say about the hemp industry now, based on what we can see and trust?

Brad Truman: Well, what we can see and what we can trust tend to be very different things at this current point in time. There are a few high-end think tanks putting out white papers and analyses. But they tend to be pretty pricey and therefore inaccessible for the vast majority of people who would otherwise read them.

HT: We see a lot of research reports out there that predict great things and offer data and figures. How trustworthy are the reports that come out of these research mills, which are constantly, and aggressively, flogging these reports?

BT: I come away from some of those reports feeling like they're trying to will the industry into its next phase. I feel like many are overly optimistic.

HT: What sources can be trusted?

BT: I tend to trust the USDA the most. But, trust and usefulness should not be assumed as synonymous in this context. While I believe the USDA has the resources to put in a fairly fulsome effort to collect and aggregate the hemp-related data, there are cavernous holes in what is reported and collected. The USDA data is based on self-reported survey results

where a great many of the survey respondents choose to not report their data.

HT: Why don't they report their data?

BT: My interpretation of that is: despite the data being entirely aggregated and therefore anonymized, businesses are being protective of their data. They are worried that, by reporting their data, they may be somehow figured out. So, trust? Yeah, I trust the USDA data in some regards as being directionally accurate. Is a complete enough set of data to be making any business or industry decisions on? Good lord, no.

HT: You're in the midst of accounting for as many companies in the hemp sector as possible through CMG's Global Hemp Business Directory. What stands out to you in that process?

BT: Yeah, we're trying to do our best to get our hands around every hemp-related company out there. We see this effort as something that will ultimately serve the industry as a whole. But, it's been a pretty slow-going effort. It requires a good bit of digging to determine what businesses are legitimate. Anybody could ChatGPT themselves into a list of hemp-related companies from the internet. Suffice it to say, we're putting a lot more effort into it than that.

Honestly, I've been surprised how few hemp-related businesses are out there that actually have a legitimate product

or service (dispensaries and CBD shops excluded). I think, in some ways, I've let the hype shape my idea of what the business landscape in the hemp industry looks like, and I'm finding out – via this effort – that the quantity and quality of hemp-related businesses are not matching my expectations.

HT: How do you approach designing dashboards that cater to both technical users and non-technical types?

BT: Well, in a perfect world, I'd be designing two separate dashboards for those two different audiences. But, again, knowing the audience is critical and that's always the starting point. Typically staying away from tedious industry terms and acronyms is fairly low hanging fruit. In so far as it's possible, you want to take a very hard look at elements that are not critical to getting the point across and removing them or, at the very least, drastically demoting their role in the visualization. Effective use of color and font are also useful tools for helping users focus on the high points.

HT: How important are the visualizations that are built into Tableau to communicating business insights?

BT: People are visual creatures. They see and make comparisons and connections far faster than they read and make comparisons and connections. So, it's not necessarily something specific to Tableau – there are plenty of business analytics and visualization packages out there that can bring complex data into very digestible forms. But, bottom line, a picture is worth a thousand words, right? Well, a good set of visualizations can be worth a thousand words and a hell of a lot of money too!

"I think, in some ways, I've let the hype shape my idea of what the business landscape in the hemp industry looks like."



Hemp, through the lens

'I knew it could do a lot, but this plant will continue to surprise you'

JORDAN BERGER is the founder of *Sunflower Films*, a production company in Chattanooga, Tennessee, USA. He is currently completing production on *ONE PLANT*, a documentary about hemp's potential to address a wide range of pressing global challenges. He also heads up *Head River Farms*, an organic hemp and veggie farm in Apison, Tennessee.

HempToday: What is the inspiration for the film?

Jordan Berger: After seeing my mother suffer a lifetime of alcoholism and opioid addiction, I grew a passion for the power of plant-based medicines – specifically cannabis as a natural solution that could help. In 2019 I started a hemp farm to make my own CBD products for my mom. Unfortunately, before I was able to harvest my first crop, my mom passed away in 2019. Having started this journey with cannabis, I had grown to believe in the plant and how it could help people.

When I learned more about the plant, I realized medicine was only part of the story. This plant has been a key ally to humans throughout recorded history, used for medicine, food, textiles, shelter, energy, and more. Now for the first time in nearly a century, the plant stands to make a comeback. When we think hemp or cannabis we think drugs. I want to change that. I want to make a film that helps to normalize cannabis and opens eyes to the great benefit the plant can bring to all of us.

HT: What was the most surprising thing you learned throughout the research and making of the film?

JB: Probably just the sheer amount of things the plant can do. I knew it could do a lot, but this plant will continue to surprise you. Whether you're looking at fiber, grain or flower, there are incredible advancements going on across all cannabis-based industries.

HT: The film is coming out at something of a low-water mark for hemp, after the CBD craze and crash, and a lot of contraction in the sector. What kind of marker will the film be? What can it say about the future of hemp as a business?

JB: I think we're in a weird place where the public still doesn't understand what this plant can do for humanity. The lack of regulation on cannabinoid hemp on the FDA's part has created a confusing marketplace supporting the outdated



views that cannabis and hemp are just for getting high. You see every gas station and strip mall selling a whole host of "legal cannabis" products aimed at giving people a buzz. Many aren't natural at all and can be quite dangerous. It's a shame because it's giving the whole plant a bad look.

However, I believe once people start learning what the plant can do for climate change, healthy food systems, and how powerful of a medicine it can be when used properly, they will open their minds. I believe the future of industrial hemp and medical cannabis is bright. Our film showcases the seemingly endless possibilities of the plant from building your house and the car you drive, to treating a host of ailments and diseases through interaction with our own body's endocannabinoid system. This plant has historically been a great ally to our species and it's here to do it again. People simply have to learn more about the plant's benefits and the good it can bring to each of our lives.

HT: What audience were you thinking of when you conceived the film, and throughout its production?

JB: From the beginning, I've sought to make a film for the everyday person. I never wanted to make a film catered to marijuana people or stoner culture. Instead, I imagine a film for folks who care about their health or the environment, or people just trying to do better in this world. This plant has a wide range of uses and applications and I hope, therefore, the audience can reflect that range.

HT: Describe the response so to the project so far?

JB: We've had a tremendous amount of support. It's been awesome feeling the love from people you've never met. It's a confidence boost for sure.

HT: Aside from financing, what are the other challenges that face independent filmmakers these days?

JB: Making a film is hard, there's no way around it. We've been at it for 2+ years as a "side job" as we continue to run our production company in Tennessee. Today I'd say one of the biggest challenges with a documentary like this is keeping up the momentum. It has taken more time than expected and we've had to pause production at several points. It's all about remaining creatively excited about the project and sometimes that's hard when you have to pause for a month or two at a time.

HT: You've described your crew as "lean and agile." What kind of people do you look for in putting a team together to tackle a project?

JB: A project with limited funding like this requires everyone involved to wear several hats. You want people you can count on who don't get too flustered when something new is thrown their way. Everyone on the ONE PLANT team embraces this agile approach needed when making a film involving real life. A project like this requires many hours with the same people so you better enjoy hanging around them. Luckily the guys that have helped me on this are also some of my best friends.



OUR PARTNERS:



Ukrainian Hemp Building Association

- Establishment and integration of hemp-based materials on the Ukrainian construction market;
- Promotion of energy-efficient and environmentally friendly technologies with a negative carbon footprint;
- Collaboration with educational institutions to develop new hemp biobased materials;
- Cooperation with international charitable foundations and organizations for the reconstruction of Ukraine;

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Join our efforts in rebuilding Ukraine sustainably!



REBUILDING UKRAINE

Hemp emerges as a green ally and symbol of resilience in the country's reconstruction

As Ukraine confronts the monumental challenge of rebuilding from the devastation wrought by its war with Russia, the need for innovative and sustainable construction solutions has never been more urgent. And industrial hemp can emerge as a key component in this effort.

The destruction in Ukraine is staggering. Over 150,000 dwellings have been reduced to rubble, along with countless schools, hospitals, and essential infrastructure. The United Nations estimates that more than six million people have been displaced, many of whom will need permanent housing.

While building with hemp can be only one response to the immediate logistical challenge of reconstruction, more importantly, it presents an opportunity to reimagine Ukraine's built environment. It is a once-in-a-lifetime opportunity to demonstrate hemp's potential as a material in affordable, sustainable, healthy dwellings.

"We grow hemp, and we have the processing capabilities to contribute to the reconstruction that will be necessary," said hemp building veteran Sergiy Kovalenkov, who founded the Ukrainian Hemp Building Association and has been a tireless advocate for hemp as a building material both in Ukraine and internationally.

Why Hemp?

Ukraine is uniquely positioned to leverage hemp for rebuilding. With a strong agricultural tradition overall, the nation has a long history of hemp cultivation. Hemp was farmed and processed in Ukraine as part of the broader Soviet hemp industry, which was widespread throughout USSR's republics and satellites in the first half of the 20th century.

It was Ukraine that helped the Soviet Union lead global hemp production from the 1920s through the early 1940s. In that heyday, Ukraine became one of the major producers of hemp textiles, ropes, and military applications such as canvas and other durable materials.

To this day, six Ukrainian oblasts – administrative districts something like states – have decortication factories to produce raw materials. And while some operate Soviet-era processing equipment, others use more modern technology, providing the key cog in an established supply chain.

The factories, and the knowledge of the people who work in them, provide a strong foundation for scaling up production of hemp-based building materials, according to Kovalenkov, who is the owner of Kiev-based Hempire, a hemp building specialist and materials developer.

Ready workers

In addition to the processing capacity, Ukraine also has a growing cadre of experts and craftsmen who are well versed in working with hempcrete material. That's mostly due to Kovalenkov, who for years has worked to popularize the material by leading demonstration projects, training local builders and raising new houses for eco-minded homeowners for more than a decade.

"We've educated hundreds of builders in Ukraine," Kovalenkov said. "And we've trained other experts who've continued to help us expand the pool of knowledge."

The Ukrainian hemp industry also benefits from the Institute of Bast Crops, which has been advancing research into hemp cultivation, technology and applications continuously since it was founded in 1931.

Kovalenkov is not waiting for the war to end to contribute. He's currently leading an initiative to complete a 30-unit apartment complex now going up near Morshyn, a small city in the western part of the country, specifically for refugee families, war veterans and orphans. The complex is the first of a three-phase project that incorporates the restoration of a former dairy farm and new construction.

"This complex is more than just a building project; it's a symbol of the resilience and innovativeness of the Ukrainian nation," said Kovalenkov. "It shows what's possible when we think differently



Sergiy Kovalenkov teaching and training at a complex going up in western Ukraine Sept. 24 2022, seven months into the war.



A Kyiv bombing attack Jan. 2, 2024 damaged the offices of Kovalenkov's company.

"Post-war Ukraine will present a great opportunity to demonstrate to the world how hemp can revolutionize the construction industry."

– Sergiy Kovalenkov

As Ukraine looks to the future, the road ahead is undoubtedly challenging

about reconstruction.”

Despite that potential, several challenges remain, with financing at the top of the list. “There’s no instrument for war risk insurance,” said Kovalenkov. “There are interested parties who want to invest, but the Ukrainian government is still developing risk investment tools.” He said some international institutions are looking at a model that would provide insurance based on different zones, depending on their proximity to the war’s front lines.

While international donors and development agencies have expressed interest in supporting hemp-based reconstruction, securing funding for large-scale projects remains a challenge. Public-private partnerships are seen as a key solution for unlocking the necessary resources.

“We’re looking for investors to build a block-making factory,” said Kovalenkov. “Building with hempcrete blocks, and pre-formed insulation panels – those will be the best ways we could fix damaged buildings fast.”

The road ahead

While Ukraine has a sturdy base from which to launch a major post-war hemp building initiative, Kovalenkov envisions a pan-European effort to help supply the raw materials. “We could definitely use material from our direct neighbors like Poland, but we hope to gear up all of Europe to supply our projects,” said Kovalenkov.

Aside from replacing and repairing dwellings and other structures, rebuilding with hemp also offers health benefits and can help cut energy costs – which have skyrocketed in price during the war, and are likely to remain at high levels even after the conflict. “With bio-based renewable materials, we can significantly reduce the cost of running a household while providing a healthy future for our children,” Kovalenkov said.

As Ukraine looks to the future, the road ahead is undoubtedly challenging. But with the right strategies and partnerships in place, the nation can emerge from the devastation stronger and greener than ever before. And hemp can play a central role in that transformative journey.

“Reconstruction is not just about restoring what was lost. Post-war Ukraine will present a great opportunity to demonstrate to the world how hemp can revolutionize the construction industry,” Kovalenkov said.



Kyiv firefighters work to extinguish a blaze after an attack by Russian missiles in January 2024.

Photo: Sergiy Kovalenkov

Hemp in Ukraine

While hemp processing infrastructure in Ukraine needs to be upgraded and modernized, production has been ongoing for centuries. Most hemp farming and processing stretches across the northern half of the country.

Leading Ukrainian hemp varieties

Only hemp grain and fiber varieties can be grown and processed in Ukraine, under annual licenses handed out by the federal government and a THC limit of 0.2%. With leading Ukrainian varieties suitable for growing tall stalks, local farmers can use domestic genetics.

Hemp Variety	Type	Registration
USO 14	Fiber/Grain	Ukraine, EU, Canada
USO 31	Fiber/Grain	Ukraine, EU, Canada
Zolotoniski 11	Fiber/Grain	Ukraine, Canada
Zolotoniski 15	Fiber/Grain	Ukraine, Canada
Hlukhivskiyi 46	Fiber	Ukraine
Hlukhivski 33	Fiber/Grain	Ukraine

The Morshyn project

"Hemp. Ukraine. Recover.", an initiative started by Sergiy Kovalenkov to provide sustainable hemp housing for displaced families, war veterans and orphans, is a 30-unit apartment complex now going up near Morshyn, a small city in the western part of the country.

The complex is the first of a three-phase project that incorporates the restoration of a former dairy building and new construction. The buildings are framed with wood and insulated using hempcrete, made from hurd sourced from Ukrainian farms and mixed with a locally developed binder.



Future phases envision additional housing units and a rehabilitation center for war veterans, forming a comprehensive development that aims to provide both shelter and a path toward recovery for those affected by the war.

Ukranian hemp

Estimated fields:
2023 1,500 ha
2024 2,000 ha
2025 3,000+ ha

Fiber processing capacity:
15,000 kg/yr



Hemp is grown



Fiber Processing



Where building most needed



Hlukhiv: Home of the Institute of Bast Crops, established 1931



Overland border crossings



Morshyn Project

Milestones: Ukrainian hemp history

Pre-1700s

Hemp introduced via trade routes, becoming integral to rural agriculture and traditional crafts.

1700-1750

Ukrainian hemp gains recognition as a key export for European maritime rope production.

1750-1800

Expansion of hemp cultivation in Left-bank Ukraine for textile and oil production.

1800-1850

Russian Empire promotes hemp cultivation; Ukraine becomes a leading producer of bast fibers.

1850-1900

Processing advances with steam-powered decorticators improving efficiency.

1900-1950

Soviet era: Ukraine designated strategic hemp research center. Institute of Bast Crops opens (1931)

1950-2000

Institute of Bast Crops develops low-THC, high-yield hemp varieties to meet 0.08 THC limit.

2000-2025

Post-Soviet revival: Hemp industry revitalized for fiber, grain, and eco-construction applications.

Forward march

Ukrainian Hemp, a private company located in the Cherkasy Oblast in the very middle of the country, didn't let the war interrupt their progress. In 2023, more than a year after Russia invaded Ukraine, the company opened a new decortication factory. Now the company processes hemp and manufactures decorticators based on the research of Institute of Bast Crops in Hlukhiv, a 94-year-old organization that leads studies on hemp and other fibers.



\$25 million hemp industrial park advancing in Zhytomyr

Despite the ongoing conflict, Ukraine's hemp industry is making significant progress, underscoring resilience and hope for the future. One particularly ambitious project in the Zhytomyr region stands out as a beacon of industrial advancement and innovation.

A major hemp processing plant, developed by the Ma'Rijani Hemp Company, is rapidly advancing. Located in the Ma'Rizhany industrial park, the facility is expected to become operational by March or April this year. Built on the site of the former Volodarsko-Volyn Flax Mill, the project has been fast-tracked despite the challenging circumstances of war.

The facility, which represents a \$25 million investment so far, will employ 200 workers and process 4,500 tons of hemp fiber biomass annually. Future expansion plans aim to increase employment to 700 workers and processing capacity to 12,000 tons per year, contingent on further investment bringing the total to \$100 million.

Support for local farmers

The project sources hemp from 700 hectares of land, with plans to increase this to at least 1,200 hectares by engaging additional farmers in the Zhytomyr region. The Ukrainian government has supported the development by waiving duties and VAT on equipment imports

for the plant.

Production at the facility will initially focus on hemp fiber, yarn, and textiles, with potential diversification into other materials, including building materials.

Magnet for hemp producers

In addition to the processing plant, the Ma'Rizhany industrial park aims to attract both small and large enterprises interested in hemp-based products. The park is envisioned as a modern industrial hub that will foster innovation in products such as biodegradable packaging, high-quality paper, insulation, nonwoven mattresses, and biomass pellets.

A 12,000 sq. m. factory and warehouse facility opened in 2024 as the initial part of the park's development. The project is supported by local municipalities and the Zhytomyr Regional Military Administration, which see it as vital for Ukraine's post-war recovery and European integration.

Michel Terestchenko, a long-time advocate for hemp and the majority shareholder of the Volodarsko-Volyn mill, emphasized the project's strategic importance. "This is a very good project that will promote the reconstruction and European integration of Ukraine," said Terestchenko. "It will create opportunities for all Ukrainian entrepreneurs who want to work on cannabis products on-site, ensuring a reliable supply of raw materials."



Ukrainian hemp building directory



Construction and consulting
Website: ukrainian-hemp.com
Email: info@ukrainian-hemp.com



Geodesic Life

Eco-friendly geodesic domes.
Website: geodesic.life
Email: info@geodesic.life
Phone: (380) 936111106



Construction and building supplies
Website: strawpanelfactory.com.ua
Phone: (380) 67 599 28 79
Email: office@strawpanelfactory.com.ua



Innovative hemp building materials
Website: hempire.tech/
Key Contact: Sergiy Kovalenkov
Email: Sergiy@hempire.tech
Phone: (380) 676585350



Institute of Bast Crops

Research and consulting in hemp, other fibers.
Website: ibc-naas.com
Email: ibc1931@ukr.net
Phone: (380) 507 780594



Nonwoven textiles and fashions
Website: ktex.com.ua
Phone: (380) 67 506 14 38
Email: snab@ktex.com.ua, sales@ktex.ua



Fiber processing and building supplies
Website: marijany.com.ua
Phone: (380) 67 118 23 13
Email: info@marijany.com



UHBA
 Ukrainian Hemp Building Association
Website: uhba.com.ua
Email: info@uhba.com.ua
Phone: (380) 986 415797



Construction and consulting
Website: ukrainian-hemp.com
Email: info@ukrainian-hemp.com



National Academy of Agrarian Sciences of Ukraine Institute of Agriculture of Northern East



Institute is a leading multi-disciplinary agrarian scientific institution of the Northeast of Ukraine, the main task of which is to provide scientific support for the innovative development of agro-industrial production in the region.

The main directions of scientific activity in hemp cultivation:

- Scientific support for the development of the hemp growing industry by creating new varieties of hemp, their seed production systems and improving growing technologies adapted to specific soil and climatic conditions.
- Organization of seed production of new and promising varieties of hemp of different ecotypes.
- Consulting support for the field of industrial hemp cultivation.
- Scientific support for the implementation of regional programs for the innovative development of hemp production.
- Organization and holding of the international festival "Hemp Fest", scientific, practical and other events to popularize the culture of hemp.

A variety of monoecious hemp –

Sofia



Authors: Kabanets V.V., Kabanets V.M., Pivtorayko V.V.

The duration of the vegetation period of plants in the conditions of the Forest-steppe zone of Ukraine is 120-125 days. Potential yield of: seeds – 2.1 t/ha, stalks – 8.0 t/ha, fibres – 2.5 t/ha. THC content is less than 0.08%. The variety was included in the State Register of Varieties of Ukraine in 2021. One of the most productive varieties of hemp in the world in terms of seed yield.

A variety of monoecious hemp –

Katyusha



Authors: Kabanets V.V., Kabanets V.M., Pivtorayko V.V.

The duration of the vegetation period of plants in the conditions of the Forest-steppe zone of Ukraine is 130-140 days. Potential yield of: seeds – 1.2 t/ha, stalks – 12.0 t/ha, fibres – 3.5 t/ha. THC content is less than 0.08%. A variety of fibre and bioenergy uses. The variety was included in the State Register of Varieties of Ukraine in 2024.

The varieties developed at the Institute make it possible to efficiently grow hemp for grain, fibre (long fibre) and dual use (grain and short fibre). Varietal technologies for industrial hemp growing have been developed and are in demand among producers in the industry. Thus, in 2024, more than 60% of the sown hemp area in Ukraine was sown with hemp varieties selected by the Institute.

In order to popularize the field of hemp cultivation every year, starting in 2018, the festival "Hemp Fest" is held on the basis of the Institute.



Proposals for cooperation:

- conducting joint scientific research;
- testing, registration and cultivation of varieties of industrial hemp selected by the Institute in the EU;
- development of technologies for growing hemp varieties selected by the Institute for specific soil and climatic conditions of EU countries;
- organising and conducting joint scientific and practical events (conferences, scientific and practical seminars, etc.);
- implementation of joint grant projects;
- development and implementation of cluster models in Ukraine, using the experience of the EU hemp industry;
- development, testing and production of new innovative hemp products;
- ready to discuss your proposals.



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Ukraine is model candidate for EU development program

Hemp could play key roles in Ukraine's sustainable rebuilding through PHOENIX initiative

The European Commission's €50 billion PHOENIX initiative lays out a pathway for sustainable development that aligns with EU environmental standards and bolsters agricultural independence. Central to this vision is the use of innovative and eco-friendly materials, where industrial hemp can serve as both a sustainable crop and a renewable resource for building materials, food, and soil health enhancement.

With a longstanding hemp cultivation tradition, Ukraine is well-positioned to leverage hemp as part of its agricultural and environmental restoration. Beyond immediate and postwar domestic needs – and they will be massive – expansion of the hemp industry could provide Ukraine access to larger markets and new opportunities down the road, especially as Europe seeks local, sustainable building materials that align with eco-design ideals.

The PHOENIX initiative is part of the European Commission's broader support for sustainable recovery, focusing on reconstruction that adheres to environmental and economic resilience principles. The initiative emphasizes "building back better" by integrating renewable energy, green infrastructure, and sustainable agriculture. The program can help restore Ukraine's economy while fostering energy independence and minimizing ecological impacts.

PHOENIX includes collaboration with EU member states, NGOs, and Ukrainian stakeholders to ensure that the rebuilding process aligns with EU Green Deal objectives, supporting Ukraine's long-term transition toward a climate-neutral, economically resilient society.

Environmental reconstruction

Ukraine's infrastructure faces severe environmental damage, with estimates of more than €52 billion in destruction, affecting ecosystems, water resources, forestry, and public health. The PHOENIX initiative, under the guidance of the United Nations Industrial Development Organization (UNIDO) and in partnership with Ukraine's Ministry of Economy, has created a framework to support reconstruction through a green and circular approach. Standards set by international bodies such as CEN and CENELEC underscore principles of climate neutrality, decarbonization, and circular economy, which hemp can effectively support.

Energy resilience is a key goal of the



As PHOENIX mobilizes to rebuild Ukraine's infrastructure and agricultural sector, hemp stands as a versatile asset in the country's path to sustainability.

PHOENIX program, as Ukraine seeks independence from Russian energy resources. Hemp offers a unique solution through its potential as a biomass fuel, a renewable source that can be cultivated domestically and converted into bioenergy. By processing agricultural by-products, including hemp, Ukraine can generate biomethane, thus reducing reliance on imported fuels.

The crop's rapid growth cycle and low environmental impact make it a sustainable option for large-scale biofuel production. Additionally, with Ukraine's THC limit recently raised from 0.08 to 0.2% THC, European genetics can now be made available to Ukrainian farmers.

Addressing waste

PHOENIX also targets Ukraine's waste crisis, aiming to transform waste into

resources through localized, circular supply chains. Hemp can play a significant role here as well: its by-products from fiber and seed processing can be repurposed in textiles, building materials, and even bioplastics. By minimizing waste and maximizing resource utilization, hemp supports the PHOENIX initiative's goal of reducing the environmental footprint of reconstruction.

As part of this approach, localized hemp production can shorten supply chains, providing reliable materials for reconstruction while enhancing economic stability for rural communities. This aligns with the European Green Deal's circular economy principles, which aim to keep materials within the economy for as long as possible.

Pathway to a sustainable future

As PHOENIX mobilizes to rebuild Ukraine's infrastructure and agricultural sector, hemp stands as a versatile asset in the country's path to sustainability. The crop's role in biofuel, carbon-capturing materials, and circular resource management highlights its potential to be a cornerstone of Ukraine's green recovery. If successfully integrated into the PHOENIX initiative, hemp could not only strengthen Ukraine's environmental resilience but also help secure its economic future in the European market, where demand for sustainable materials is rising.



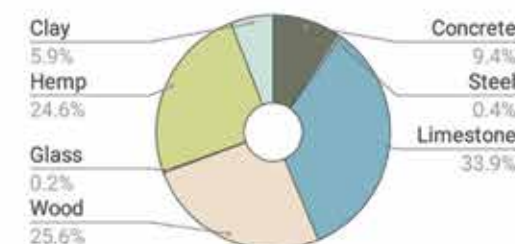
This is our 3rd generation model ready to build that came after two successfully built Gen.1 and Gen.2 pilots

The structure is made of CLT panels and a prefab set fits into a standard shipping container or a small truck without oversized logistics



Insulation is made of natural limestone-based hempcrete using a spray method for 2 days.

Building energy performance could be nearly zero depending on the climate region and equipment installed (currently 19 kWh/m²*a for heating in Stockholm, Sweden climate area).



Building emissions footprint LCA is eliminated by 71% compared to an average modern building.

Up to 73% of materials could be reused for a new building after a 100-year lifecycle. Otherwise, it is composted and biodegraded.

Footage range is from 80m² houses to 600m² school / rural community hub.



Prefabrication can be done either at the factory in Ukraine or in your country to eliminate logistics costs and pollution

Assembly requires a small 9m-high 650kg loader instead of heavy crane trucks. Additional pop-up dome tent allows to build in any weather conditions.



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Florida’s cannabis divide

DeSantis backs hemp intoxicants, shuts down recreational weed

Backed by producers of psychoactive hemp products, Florida Gov. Ron DeSantis has effectively secured a two-track market for intoxicating cannabis where only hemp-derived intoxicants and medical marijuana are legal, with recreational weed shut out by voters.

After a costly ballot measure battle, Amendment 3, which sought to legalize recreational marijuana, fell short of the 60% approval threshold in last November’s general election. The measure received about 56% support; 60% was required for passage.

The Amendment to the state constitution would have allowed adults 21 and older to possess up to three ounces of marijuana or five grams in concentrated form. Many observers were surprised by the amendment’s failure, as some pre-election polling had indicated majority support by a thin margin.

Not smart and safe

Trulieve Cannabis Corp., Florida’s largest medical marijuana operator, led the push for legalization, contributing most of the more than \$150 million raised by Smart & Safe Florida, the organization that backed the initiative. DeSantis saw Trulieve’s support of Amendment 3 as overreach after he had welcomed the company in as a big player in Florida’s legal medical marijuana market.

The state invested substantial resources in its opposition campaign. DeSantis was criticized for using state funds for anti-Amendment 3 advertising and for staging press conferences on the issue.

The governor found his position conveniently bolstered by support from makers of the synthetic hemp products, which are unregulated and are both in violation of state rules for THC levels and, in some cases, tainted with pesticides. Florida and federal consumer safety agencies have repeatedly issued warnings over the products.

While the measure’s defeat keeps Trulieve’s ambitions in check, it appears to open the door wide – at least temporarily – for intoxicating hemp producers, who can offer their products as an alternative to medical marijuana.

Under a 2023 law signed by DeSantis, intoxicating hemp products, such as those containing delta-8 THC and other synthetic substances, may be sold in convenience stores, gas stations, and general retail outlets, as long as they meet state guidelines on age verification, labeling and packaging. The products may be sold to individuals aged

21 and over, and marketing to children is prohibited.

Retailers can sell these products alongside other goods without needing a dispensary or specific cannabis license, as is required for medical marijuana.

A cynical alliance

The alliance between DeSantis and synthetic hemp producers underscores a cynical political maneuver. On the one hand, the governor aligned with companies like Trulieve to streamline the medical market, while on the other, he’s aiding unregulated hemp producers whose products are widely accessible and relatively inexpensive. By supporting these



intoxicating hemp products, DeSantis has created a de facto recreational cannabis market that bypasses the stricter regulatory and licensing frameworks typically applied to cannabis.

So Florida has now established itself as a distant outlier in how it is now dealing with intoxicating hemp products. Many states have banned products containing the substances outright, while others have put them under laws and rules governing recreational marijuana. In states where recreational marijuana is already legal, weed stakeholders have fought against the hemp intoxicants, arguing they represent unfair competition because they are not subject to licensing fees and regulations.

Most of the intoxicating hemp compounds at issue are made by putting hemp-derived CBD through a synthetic process to produce the highly concentrated psychoactive substances. They produce effects similar to those produced by delta-9 THC, the common intoxicant found in marijuana.

Products containing the substances emerged after the 2018 Farm Bill legalized industrial hemp and its downstream products across the U.S. The federal law created a loophole by not accounting for

synthetically produced psychoactive products that can be made from hemp flowers.

Crowing, conceding

In a social media post, Vote No on 3, the campaign opposing recreational marijuana, crowed, “Even after spending over \$150 million — the most in any drug legalization effort in American history — the people of Florida saw through Amendment 3’s web of deception and defeated this corporate power grab.”

As if ignoring the Amendment 3 defeat, Smart & Safe Florida said Tuesday night, “While the results of Amendment 3 did not clear the 60% threshold, we are eager to work with the governor and legislative leaders who agree with us on decriminalizing recreational marijuana for adults, addressing public consumption, focusing on child safety, and expanding access to safe marijuana through home grow,” the group said.

Despite Tuesday’s vote in Florida, the likelihood that federal law will eventually impact Florida’s legal market for intoxicating hemp products is considerable, as both Congress and federal agencies are increasingly scrutinizing the legal gray areas surrounding synthetic hemp cannabinoids like delta-8 THC and other derivatives. Any changes in federal regulations would likely significantly affect the sale, distribution, and safety requirements for these products.

What feds could do

If the FDA enacts new regulations on hemp-derived cannabinoids, particularly synthetic intoxicants like delta-8 THC, Florida’s market for these products could face major restrictions or bans. Alongside, the DEA’s potential reclassification of these cannabinoids as Schedule I controlled substances could force Florida to either ban or heavily regulate them.

Congress is also considering reforms to the 2018 Farm Bill to set THC limits on all cannabinoids, closing loopholes that currently allow synthetic intoxicants, which would redefine “hemp” and potentially eliminate Florida’s legal market for these compounds.

Additionally, federal product safety standards, labeling mandates, and possible restrictions on interstate commerce would further increase compliance costs for Florida producers, limit product variety, and reshape the state’s hemp industry.



Roof and walls insulation (0,6x10 m)

Used for roof insulation from the inside and internal wall insulation.



Substrate (1x10 m)

It is used to insulate the floor under laminate and linoleum.



Inter-crown seal (width 0.05 - 0.2 m length 15 m)

It is used for sealing log houses, during construction, log- and frame houses.

Energy-efficient hemp insulation

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resources
GROWING CLUSTER

Michigan closes its hemp program

Will USDA oversight help or hinder the state’s struggling sector?

Michigan has closed its industrial hemp program, leaving farmers to operate directly under the U.S. Department of Agriculture (USDA), and signaling potentially significant changes for hemp cultivators and processors in the state.

Under USDA rules, pre-harvest THC testing protocols are stricter, and all tests must be conducted at federally approved laboratories. Farmers also face heightened compliance requirements, with more detailed record-keeping and reporting obligations.

However, Blain Bechtold, President of iHemp Michigan, said the change will be good for the state’s hemp growers. That begins with costs. Michigan farmers can expect lower fees than the \$1,350 they were paying for state hemp permits, which Bechtold said was “certainly a hindrance to growing the industry in Michigan.”

“Now that more uses of industrial hemp products in the building and animal feed sectors are starting to emerge, this move (to USDA) may encourage farmers and processors to look again at the possibilities that industrial hemp could provide to their operations,” Bechtold said.

Now in effect

The Michigan Department of Agriculture and Rural Development (MDARD) ended its hemp oversight at the close of 2024. The decision is linked to the passage of Michigan House Bill 5977, which abolished the state’s industrial hemp fund and transfers oversight responsibilities for hemp cultivation and regulation to the USDA.

The transition could also affect the resources and support Michigan farmers previously relied upon. The state’s program had offered localized assistance, including workshops and guidance tailored to the state’s unique agricultural environment. The move to a federal program may mean farmers lose access to such services, potentially leaving some without the same level of support for navigating regulatory challenges.

At the same time, the shift to USDA oversight brings new opportunities. Operating under a uniform federal standard could simplify compliance for businesses that operate across state lines, and open up broader markets for Michigan hemp products. Some producers in states that



Some USDA rules are stricter, but on balance the change could be good.

operate under USDA say the administration is simpler and that the federal program allows farmers direct access to federal resources such as crop insurance, disaster assistance, and grant programs.

Modern history

Initially, the 2014 Farm Bill authorized state agricultural departments to establish pilot programs for hemp cultivation. The 2018 Farm Bill legalized hemp nationally, granting the USDA authority to oversee hemp production. States could choose to operate their own regulatory programs, subject to USDA approval, or defer to direct federal management under the USDA’s standardized framework.

Michigan established its state industrial hemp program in 2019 under the authority of the MDARD. The program was initiated following the passage of the Michigan Industrial Hemp Research and Development Act, which aligned with the 2018 Farm Bill.

USDA approved the state’s plan in 2020. An update under Michigan’s Industrial Hemp Growers Act in 2021 aligned the state’s program with final federal regulations. In 2022, Gov. Gretchen Whitmer consolidated the regulation of hemp and marijuana processing, distribution, and sales under a newly named

Cannabis Regulatory Agency to save money, at the time leaving licensing for hemp cultivation with MDARD.

Michigan’s hemp fortunes

While, like Michigan, many states opted to implement their hemp programs, some struggled to align their regulatory frameworks with the USDA’s strict THC testing protocols, reporting requirements, and enforcement. Several eventually reverted to USDA oversight when administration became unsustainable due to funding shortages resulting from lower-than-expected farmer participation and diminished licensing fees.

The number of growers in Michigan simply could not support a government department to oversee the hemp sector. And by taking money from growers and processors, the state failed to support the industry’s growth, according to Bechtold.

Michigan’s hemp fortunes have tracked those of the industry nationwide, according to figures from the USDA’s National Agricultural Statistics Service (NASS). After reaching a peak of 13,225 acres (~5,351 hectares) planted in 2020 – spurred by the hype over CBD – fields dwindled to 290 acres (117 hectares) in 2022 after a massive crash hit that subsector. No hemp acres were reported to NASS for 2023.

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DoorDash delivering intoxicating hemp products despite safety concerns

U.S. consumers in some states can now get unregulated CBD and intoxicating hemp products through the tap of a finger on their DoorDash app and food delivery service. DoorDash said it reversed its earlier policy against handling the controversial hemp derivatives, which consumer safety agencies and regulators have repeatedly warned against.

CBD remains unregulated but it could get treatment when the next U.S. Farm Bill gets Congressional action – some time this year. The Farm Bill could also address the matter of intoxicating hemp substances, most of which are derived from CBD manufactured from hemp flowers.

DoorDash CEO Tony Xu had said last year that the company had no plans to deliver hemp cannabinoid products due to the complexities of deliveries and payments under existing regulations.

But according to effusive comments from the company, policy has flipped on the hemp products: “With the growing demand for hemp-derived THC and CBD products, we’re excited to expand access to a wide selection of products consumers crave,” Jacob Morello, the delivery company’s General Manager of Alcohol and Emerging Categories, said in a press release. “As preferences evolve, DoorDash can now help eligible customers find new products to safely enjoy while they unwind and recharge in the new year.”

The company does not deliver marijuana even in states where it is legal.

Only the legal stuff, of course

DoorDash, the number one food delivery app in the U.S., with a 55%+ market share, said it is initially offering gummies, drinks, mints, chocolates and honey sticks.

DoorDash emphasized in an advisory accompanying the press release that it would only facilitate deliveries of products that meet the federal definition of hemp as containing no more than 0.3 percent THC by dry weight. And the company added: “The Food and Drug Administration has not evaluated these products for safety or efficacy, and has not evaluated any statements regarding these products.”

DoorDash is apparently satisfied with arguments from producers that because the 2018 Farm Bill made hemp and its



DoorDash CEO Tony Xu

downstream products legal, the hemp-derived intoxicants are therefore also legal. Most of the synthetic substances are made by manipulating hemp-derived CBD (itself unregulated) in the laboratory to heighten the THC content to psychoactive levels – a prospect lawmakers did not know about when they passed the landmark agriculture bill.

Unapproved, illegal

But even some in the hemp business have suggested that the 2018 Farm Bill never intended hemp to be used to make psychoactive compounds, and have criticized nefarious players they say are exploiting the laws’ language to sell highly potent synthetic THC products that are often rife with contaminants and inaccurately labeled.

The U.S. Food & Drug Administration (FDA) has explicitly stated that delta-8 THC products have not been evaluated or approved for safe use and are illegal. While the FDA hasn’t specifically addressed other psychoactive substances derived from CBD as extensively, the agency’s overall position on the regulation of cannabis and cannabis-derived products suggests these substances would fall under the same regulatory umbrella as delta-8 THC, meaning they would require FDA approval before being marketed as safe and effective.

Regulators have been wary of the products since they started appearing at

the end of the last decade, and health and anti-drug organizations have called for a blanket ban on intoxicating hemp.

DoorDash doesn’t know about, or doesn’t care about the warnings: “To help consumers find exactly what they’re looking for, we’ve created an easily shoppable page with hemp-derived products, non-alcoholic beverages, and more so they can enjoy social sips and celebrations, or give their routine a much-needed refresh,” the company said. “Whether you’re embracing a fresh start to the new year or exploring new products to enjoy, DoorDash has you covered with a growing selection of hemp-derived products, non-alcoholic beverages, and snacks delivered right to your door.” (!)

The company said it has deals to distribute the products with two major alcohol operators. Total Wine & More, founded in 1991 in Delaware, operates more than 250 superstores across the United States. Headquartered in Bethesda, Maryland, it offers a “curated shopping experience,” often hosting in-store marketing events.

In states where Total Wine & More operates, intoxicating hemp products are sold in Alabama, Arizona, Florida, Georgia, Kentucky, Maryland, Minnesota, Missouri, New Mexico, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia. These states have generally permitted the sale of delta-8 THC products, though specific regulations may vary within each jurisdiction, and things are changing fast.

Gwyneth Paltrow

DoorDash also partnered with ABC Fine Wine & Spirits, one of the largest family-owned alcohol retailers in the United States, with more than 125 stores in Florida, where Gov. Ron DeSantis backed the dodgy intoxicating hemp sector and struck down a law that would have banned the substances.

DoorDash partnered with the cannabis beverage company Cann to offer users a \$2 discount on “multipack purchases” of their products in a one-off promotion. Cann, El Segundo, California, makes THC and CBD-infused sparkling drinks. The company has celebrity investors including Gwyneth Paltrow and Ruby Rose. Cann positions itself as a premium entry point into cannabis for new users and an alternative to alcohol for social occasions.

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‘Divergent priorities’

Report finds U.S. hemp lawmaking is a tough row to hoe

Legislative challenges are starkly evident as lawmakers prepare to address hemp-related regulations in the upcoming U.S. Farm Bill – amid a drastic decline in the industry’s fortunes, according to a recent report from the Congressional Research Service (CRS). The CRS report underscores key issues at play in an intricate policy landscape, led by the sharp debate over products containing intoxicating hemp substances such as delta-8 THC. The products have sparked contentious legislative proposals at both state and federal levels. While some advocate for an outright ban to address public safety concerns over the synthetic hemp-derived substances, others argue for clear federal regulations that would keep the products legal.

‘Diverging policy goals’

“Hemp industry priorities for the next Farm Bill vary by national and regional groups, often with diverging policy goals and priorities, thus complicating policymaking,” the CRS report says of the pending legislation, originally the 2023 Farm Bill, which has yet to be finalized.

Aside from that contentious issue of the intoxicating products, key regulatory hurdles that policymakers must address include testing requirements, licensing processes, and the role of the Drug Enforcement Administration (DEA). Under the current framework established by the 2018 Farm Bill, industrial hemp growers face stringent requirements, such as testing for tetrahydrocannabinol (THC) levels and background checks. Proposed amendments in previous congressional sessions aimed to relax some of those rules. In addition to the legislative and regulatory challenges, the hemp industry has faced severe economic setbacks, the report observes, with the farm-level value of U.S. hemp production declining from \$824 million in 2021 to \$291 million in 2023, according to the U.S. Department of Agriculture (USDA). This contraction reflects reduced acreage and lower market prices for hemp products, particularly hemp flowers used for CBD, still the biggest hemp subsector. The CRS report attributes part of this decline to regulatory uncertainty and market oversaturation following

the crop’s legalization. For farmers, the risk of cultivating non-compliant hemp – commonly referred to as “hot” hemp, which exceeds the federal THC limit of 0.3% – remains a significant challenge, with about 20% of crops exceeding legal thresholds in recent years, the report notes. Past efforts have pushed for raising the THC limit to a full 1.0%, which would not only protect farmers from over-the-limit crops but also make CBD production more efficient because CBD rises in hemp plants in proportion to THC.

Advocates push for support

In addition, CRS said hemp stakeholders are urging Congress to expand federal support through the USDA’s farm programs. Key proposals include increased funding for research into hemp genetics, soil carbon sequestration, and the plant’s potential for phytoremediation; expanded processing capacity for hemp fibers and promotion bio-based products; and adding hemp to the USDA’s specialty crop program to unlock grants and additional support.

Uncertainty grows as Farm Bill remains delayed

The U.S. Farm Bill continues to be held up in Congress, causing anxiety among some stakeholders whose fate could be determined by the omnibus agriculture legislation. The anticipated update to the Farm Bill, five-year legislation originally scheduled to pass in 2023, is expected to address critical issues such as CBD regulation, the rise of intoxicating hemp-derived products, and the need for clearer federal guidelines. Congress enacted a one-year extension of the 2018 Farm Bill in 2023, but that extension expired last September.

Ambiguity over CBD

The 2018 Farm Bill federally legalized hemp and its derivatives, including CBD, by removing hemp from the list of controlled substances. However, it delegated regulatory authority over CBD to the U.S. Food and Drug Administration (FDA). To date, the FDA has not established comprehensive guidelines for CBD products, leaving producers in a legal gray area. This regulatory gap has resulted in a wide range of unregulated CBD products on the market, raising concerns about safety and

quality standards among consumers and regulators. Industry stakeholders are pushing for the upcoming Farm Bill to address this issue by providing clear guidelines for CBD products. Proposed measures include strict labeling requirements, dosage recommendations, and verified health claims. Although these regulations could improve consumer confidence, they might also increase operational costs for smaller hemp companies, potentially leading to industry consolidation.

Intoxicating hemp products

An unexpected consequence of the 2018 Farm Bill has been the rise of intoxicating hemp-derived products, such as those containing delta-8 THC. These products, synthesized from legal hemp extracts, produce psychoactive effects similar to delta-9 THC found in marijuana. The 2018 Farm Bill limits delta-9 THC to 0.3% in hemp products but does not explicitly regulate other THC variants, creating a legal loophole. Intoxicating hemp products, often marketed as “diet weed” or “marijuana

light,” are sold in various forms, including gummies, candies, drinks, tinctures, topicals, and inhalables. Several states enacted laws in 2024 to regulate these products. The upcoming Farm Bill could close this loophole by restricting all THC forms, including delta-8, and introducing new licensing requirements for cannabinoid extraction and modification.

Also unresolved

Other critical issues that remain unresolved in the delayed Farm Bill, impacting various stakeholders:

- Banking and financial services: Stakeholders are advocating for clearer legal language to assure financial institutions about serving hemp-related businesses.
- Crop insurance and support programs: There is increasing demand for federal crop insurance and support programs tailored to hemp farmers to protect against crop failures and market volatility.
- Research and development: Industry leaders are calling for more funding for research into hemp cultivation, processing, and product innovation to unlock the crop’s full economic potential.

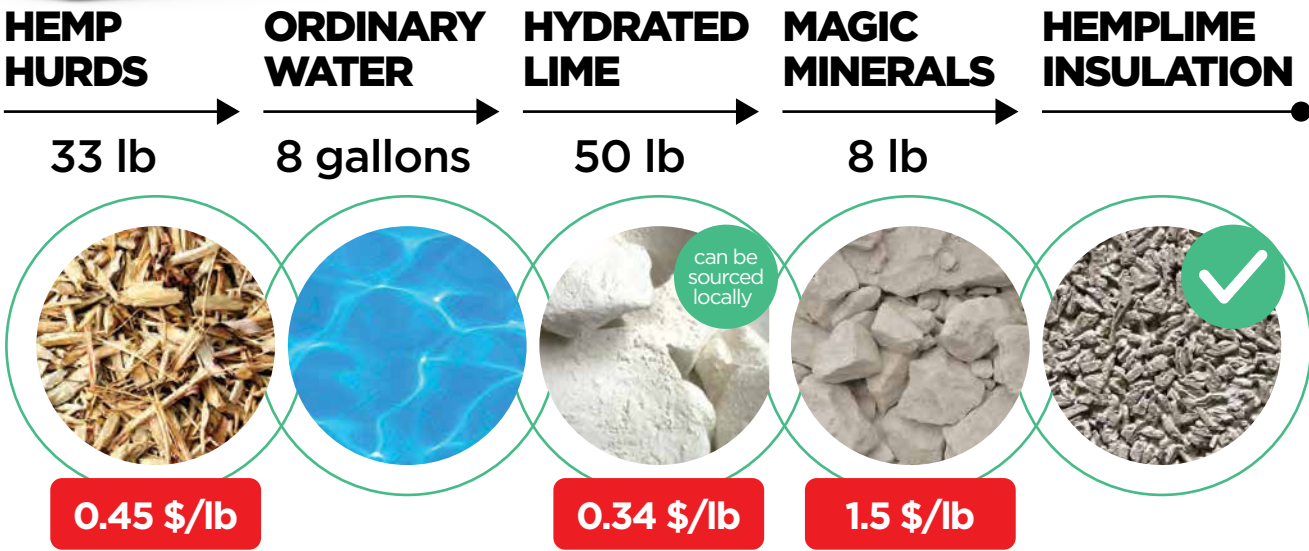
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Growing better hemp

Research aims to improve fiber quality through harvest timing and tech

Two U.S. hemp companies have joined with North Carolina State University to look at how harvest timing affects hemp fiber quality, and to develop technologies to improve processing.

Montana-based IND Hemp and Bast Fibre Technologies, Greenville, South Carolina, provided matching funds for the initiative after the university received a grant of \$333,516 from the Foundation for Food & Agriculture Research (FFAR). FFAR receives its funding from federal appropriations authorized by the U.S. Congress. The hemp companies added private funds that raised the total for the project to \$667,032.

‘Burgeoning industry’

“Hemp fiber is a burgeoning industry that can benefit growers across the country,” said Kathy Munkvold, FFAR scientific program director. “This research is developing tools and guidance to ensure a consistently high-quality crop, regardless of where it’s grown.”

The study, led by David Suchoff, an alternative crops specialist and assistant professor in crop and soil sciences at NC State, aims to address inconsistencies in



hemp fiber production by developing science-based harvesting guidelines and advanced retting technologies.

Fiber length, diameter, and strength evolve as hemp plants grow, making precise harvest timing critical for optimal quality.

Broad analysis

The researchers will analyze the impacts of genetics, environment, and harvest timing on fiber quality through trials in the contrasting climates of North Carolina and Montana. The team will also study hemp-associated bacteria and

fungi to develop field-tested probiotics that can improve retting under challenging environmental conditions.

Actionable tools

The project’s goal is to provide U.S. hemp farmers with actionable tools and data to ensure consistent, high-quality hemp fibers regardless of geographic or climatic differences. The research is crucial for the nascent hemp industry, where consistency in fiber quality can drive profitability and enable the sector to meet the standards of various industries, from textiles to construction.

Key risks still uncovered in hemp insurance update

The U.S. Department of Agriculture (USDA) has updated its federal hemp crop insurance to allow hemp crops to be insured when planted after soybeans in the 14 states where farmers operate directly under the federal farm agency.

The agency said the changes, which take effect in 2025, aim to provide more options when it comes to crop rotation.

Basic protections

The RMA provides crop insurance for hemp through its multi-peril crop insurance program, which protects against yield losses due to natural perils such as drought, pests, and disease.

The changes do not bring protections most critical to hemp farmers, such as THC levels exceeding the federal 0.3% limit. USDA’s Risk Management Agency (RMA) explicitly states that hemp crops failing THC compliance are not eligible for insurance payouts. Insurers are also not required to cover hemp infested with mold, yeast, or fungus

The revisions also clarify that smoke damage is not a covered cause of loss under the hemp insurance program. While fire and volcanic eruptions remain covered, losses due to smoke do not qualify for compensation, according to RMA.

“RMA is clarifying that smoke damage is not a covered cause of loss, as hemp coverage does not allow for quality adjustment,” the agency said. Research has shown that smoke damage can cause economic losses in the cannabis sector, though its specific effects on hemp are less studied.

The insurance update applies to farmers in Colorado, Illinois, Indiana, Maine, Michigan, Minnesota, Montana, Nevada, New York, North Dakota, Oregon, Pennsylvania, South Dakota, and Wisconsin.

Coverage grows

The hemp Actual Production History program, which offers multi-peril crop insurance in select production regions,

has seen consistent growth since its introduction in 2020. In 2024, U.S. hemp operators insured \$750,000 in covered liabilities on 2,600 acres nationwide, RMA said.

Farmers must adhere to strict guidelines, including crop rotation rules, and ensure compliance with provisions in the 2018 Farm Bill to be eligible for the insurance. Sales closing dates and coverage options vary by location, and policies are sold through private insurance agents in collaboration with the RMA.

Lab rule again delayed

In a related announcement, the USDA said enforcement of a rule requiring hemp growers to test crops exclusively at labs registered with the Drug Enforcement Administration has again been delayed. The delay, attributed to “inadequate” access to DEA-registered facilities, marks the third consecutive year of postponed enforcement for this requirement under the 2018 Farm Bill.

Can microbes boost CBD yield, fiber quality?

A study by researchers at the University of Houston suggests it may be possible to enhance hemp plants’ productivity for CBD and fiber production by manipulating their microbes.

The findings, published in the journal *Nature*, highlight how different hemp varieties interact with specific microbiomes — communities of tiny organisms including microbes – which play a crucial role in plant growth, nutrient absorption, and stress resilience.

“In hemp, the microbiome is important in optimizing CBD production and enhancing fiber quality,” said Abdul Latif Khan, assistant professor of biotechnology at the Cullen College of Engineering Technology Division and lead author of the study. “This work explains how different genotypes of hemp harbor microbial communities that live inside the plants and contribute to these processes.”

Question over varieties used

The research team set out to examine the microbiomes of four hemp varieties – two CBD producers (Sweet Sensi, Cherry Wine) and two fiber producers. However, while the researchers identified American Victory-1 (AV-1) variety as a “fiber” variety, it was actually developed to produce flowers for CBD. Considering that the other “fiber” variety in the trial



[Photo: UH]

Abdul Latif Khan led the study

was unidentified, it leaves a question of how much value the research might have for actual fiber production.

At any rate, the researchers said their analysis revealed different microbial populations associated with CBD-rich hemp versus fiber-rich hemp.

Bacteria such as *Sphingomonas*, *Pseudomonas*, and *Bacillus* were prevalent in the two breeds identified as fiber-producing hemp, while *Microbacterium* and *Rhizobium* were more abundant in CBD-producing plants. Fungi like *Penicillium* and *Nigrospora* were also linked to CBD production, whereas *Alternaria* and *Gibberella* were associated with fiber plants.

The study found that different parts of

the hemp plant, such as roots, stems, and leaves, harbor unique microbial communities. The strains identified as fiber-producing had more bacteria that support structural strength, while CBD-producing plants were associated with microbes that enhance compound production.

Additionally, fungal diversity was higher in the leaves and stems, while bacterial diversity was more prominent in the roots and soil. These differences highlight how the microbiome varies based on plant type and tissue, playing a critical role in plant health and productivity.

Sustainability potential

“We demonstrated how different hemp genotypes have their own special groups of microbes that support plant health and productivity,” Khan added. The findings could pave the way for more sustainable farming practices by reducing reliance on chemical inputs and harnessing the natural benefits of these microbial communities, he said.

The study’s collaborators included Waqar Ahmad, a doctoral student and the paper’s first author, as well as researchers from Prairie View A&M University. The team emphasized that further exploration of the plant microbiome could lead to tailored microbial applications, enhancing hemp’s industrial and pharmaceutical value.

Minnesota chickens can now eat hemp meal

Hemp seed meal may now be fed to Minnesota’s laying hens, state agriculture officials recently announced.

Also referred to as hempseed “cake,” the feed material was tentatively approved by the Association of American Feed Control Officials (AAFCO) last year, meaning individual states could move forward with commercial adoption. The meal is obtained by grinding or milling the cake after most of the oil has been extracted from hemp seeds. It is now listed in AAFCO’s official publication, the foundational document for the feed industry that provides definitions, regulations, and procedures related to ingredients, labeling, and manufacturing.

Expanding the market

The Minnesota Department of Agriculture (MDA) said the state is among the first in the nation to approve commercialization of the feed material. Minnesota allows



tentatively approved ingredients to be used in animal feed and pet food. Hemp meal is restricted to laying hens for now, and can make up no more than 20% of the birds’ diet as a source of protein and fat, the MDA said.

“It’s an opportunity to expand the availability of hemp in the market,” said Daniel King, an MDA feed specialist and board member of AAFCO. “Producers can market it as a specialty ingredient.”

Rich in protein, essential fatty acids, and fiber, hemp seed meal offers nutritional benefits for laying hens, cattle, and other farm animals. Studies suggest that including

hemp seed meal in diets can improve egg quality in hens, enhance growth performance in cattle, and support overall animal health due to its omega-3 and omega-6 content.

The Food and Drug Administration set the final standards with a limit of 2 parts per million (ppm) for THC and 20 ppm for cannabidiol CBD. More research and testing will take place over the next year to make sure the THC and CBD levels in the hemp seed are “correct,” according to MDA.

Tentative approval

The AAFCO process may take a year or more before moving from tentative approval to full approval for an ingredient, King said. Once full approval is granted, it could be expanded to meal uses for other animals, he said.

MDA said the application period for a license to grow hemp in Minnesota this year is open now through April 30.

Reign uninterrupted

Canada shipped \$55 million in hemp seed products to U.S. in 2024

Canadian hemp grain producers continued to dominate the U.S. market for hempseed-based products in 2024, shipping material valued at roughly \$55 million over the northern border, according to the U.S. Department of Agriculture (USDA). The total, which includes food seed, oilcake and hempseed oil, was flat against imports recorded for 2023.

Canadian producers shipped in \$46.2 million worth of food seed, \$5.9 million in oilcake and \$3.3 million in hempseed oil, with most of the supplies coming from the province of Manitoba (\$52 million), according to a final USDA report from last year.

U.S. is import market only

For context, U.S. hemp grain production in 2023 was estimated at just \$2.3 million, according to a separate USDA report that tracks domestic production.

Total U.S. food seed imports reached \$47.9 million in 2024. Far behind Canada among the top five grain exporters to the U.S. were: Romania, \$553,000; China, \$434,000; France, \$271,000; and Paraguay, \$250,000.

The Netherlands led all exporters of hemp sowing seed to the U.S., shipping \$3.6 million of the total \$4.8 million



recorded last year. Other top cultivation seed exporters to the U.S. were Spain with \$472,000, France with \$483,750, China with \$244,590, and Australia with \$239,915.

Imports of hemp textile materials in two categories totaled roughly \$2.0 million. Yarn imports were valued at \$1.2 million with roughly \$800,000 coming from Romania and \$273,000 from China. Fabric imports were \$989,000, with more than half of that (\$599,000) coming from China. Italy shipped fabrics worth \$284,000.

Twine imports totaled \$2.6 million,

with more than 99% of that coming from the Philippines.

Last year was the second year for the import reports, which are produced weekly. Compiled by USDA's Agricultural Marketing Service, the reports mark the first government data analysis dedicated solely to imported hemp commodities, but do not include hemp flowers, hurd or technical fibers. In addition to import data, the reports track retail advertised prices for seed-based products such as whole and hulled seeds, protein powder and hemp seed oil, nationally and by region.

Analysis is limited

Hemp import volumes to the U.S. are minuscule, but still may hint at how industry business relationships are shaping up around the world.

The weekly reports complement an annual National Hemp Report started by USDA two years ago that queries more than 20,000 hemp producers across the nation to determine planted acreage, harvest figures, and crop values. That report put the total value of domestically produced hemp at \$258 million in 2023, with income from flowers \$241 million; fiber, \$11.6 million; and grain \$2.3 million.

New Mexico's backing of CBD facility bucks industry trend

The state of New Mexico is investing \$750,000 in a project that aims to expand CBD processing and manufacturing under the state's Local Economic Development Act (LEDA).

The investment will support NewBridge Global Ventures Inc. in building a canning facility and expanding its CBD processing operations in the area.

"The Economic Development Department supports this initiative that leverages local resources and New Mexico's rich agricultural heritage to create quality jobs in a rural community," said Rob Black, New Mexico's Economic Development Department Secretary-designate.

Economic boost envisioned

The investment is a departure from the broader trend in the CBD sector, which has faced significant contraction in recent years due to market oversaturation, regulatory

uncertainty, and declining demand, leading many companies to either shutter operations or scale back their expansion plans.

NewBridge, a San Francisco-based agricultural technology company, is nearing completion of a CBD processing facility on the King family of former New Mexico Gov. Bruce King, farm near the City of Moriarty. The King operation is the company's growing partner.

State officials, the company, and the King family, are banking on the project's potential to boost the local economy. Over the next five years, the expansion is expected to create nearly three dozen jobs.

NewBridge's work aligns with Gov. Michelle Lujan Grisham's priorities to expand infrastructure and manufacturing, particularly in rural areas, according to the governor's office.

"This project will positively impact and boost the local economy, creating well-paying jobs, with a positive economic ripple effect throughout both Torrance

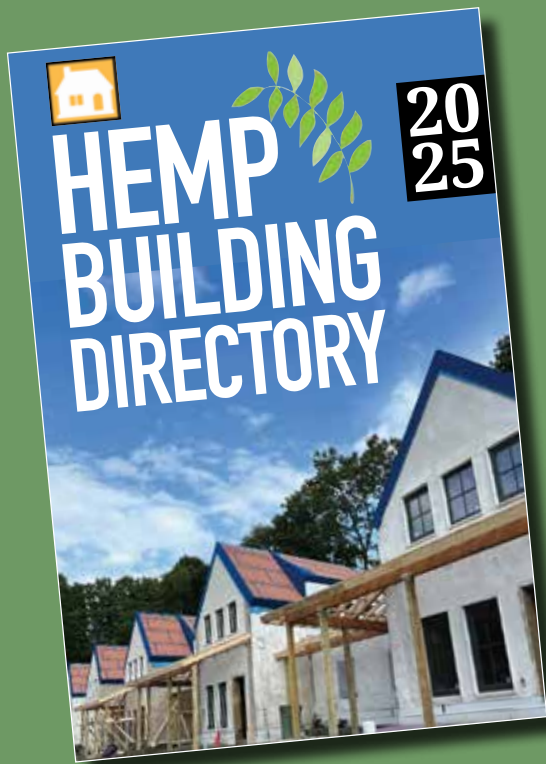
and southern Santa Fe Counties," said Myra Pancrazio, former director of the Estancia Valley Economic Development Association, which is assisting NewBridge with site selection and technical expertise for the expansion.

\$millions invested

The LEDA funds will be disbursed as NewBridge meets specific benchmarks, with the Moriarty City government acting as the fiscal agent. The company has already invested over \$20 million in New Mexico, including its partnership with King.

NewBridge claims to make CBD for Nestlé, Purina, and General Mills, and manufactures its own products – a cream and a beverage. Those products are currently made out-of-state, but the planned canning facility will allow the company to produce them locally in the future, NewBridge said.

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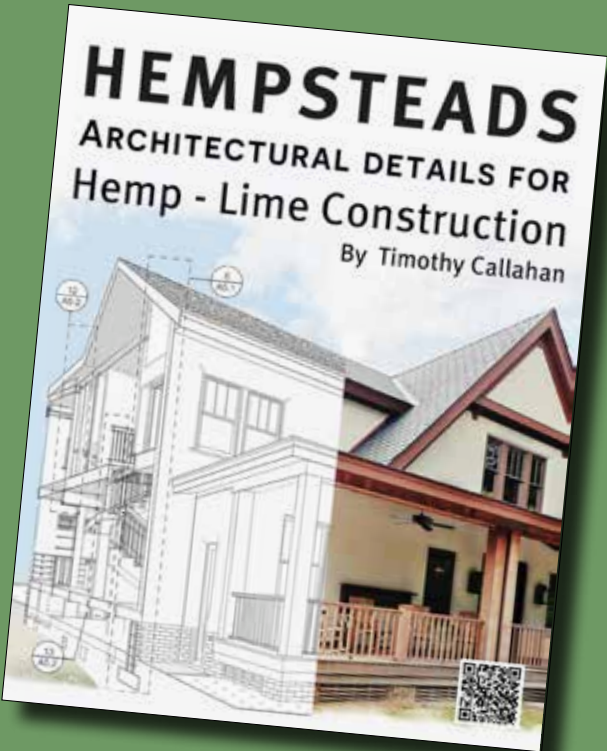
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A CBD scramble is on in Japan

New rules spark the search for '0%' THC

CBD companies serving the Japanese market are scrambling to line up suppliers of "THC-free" formulations in anticipation of strict rules kicking into effect before the end of the year.

Japan recently set maximum THC limits for CBD products and the raw materials used to make them. In keeping with Japanese post-WWII cannabis policy, the limits are among the strictest in the world. For CBD products, the threshold for THC content is set at 10mg/kg (= 0.001% = 10ppm) for oils and powders, and even stricter limits apply to aqueous solutions (0.10mg/kg = 0.00001% = 0.1ppm) and food products (1mg/kg = 0.0001% = 1ppm).

Super strict limits

Those limits are at least 200 to 300 times stricter than the threshold in most other countries with established CBD regulations, which observe a 0.3% THC limit for all product categories. Japan's approach to CBD regulation reflects a strong aversion to THC, even at trace levels, consistent with its post-WWII stance on cannabis, which has included some of the most conservative policies worldwide.

Stakeholders and consumers organized petitions and lobbied government officials following the announcement of the new rules last year, but their efforts resulted only in a delay rather than substantive change, pushing the rules' start date to mid-December from the originally scheduled October launch. Although there is widespread public interest in relaxing restrictions on CBD in Japan, regulatory bodies remain resolute in maintaining strict THC limits due to concerns over public health and cannabis control.

Players in Japan

The new THC limits create unique challenges for foreign CBD suppliers that have already established a market presence in Japan. Companies like PharmaHemp of Slovenia, Elixinol and CBDfx from the U.S., Endoca from Denmark, and Naturecan from the UK are some of the global players claiming



Distributors in Japan have skirted the law by claiming their products come from hemp stalk. Top: Japan's strict drug laws date to U.S. occupation after World War II.

to offer THC-free products. It will be interesting to see how those claims hold up against Japan's insistence on transparency and rigorous compliance.

Japan's strict standards demand third-party lab testing with zero tolerance for THC, and these requirements come at a time when past issues in the industry have raised concerns about

certification credibility. Many certifications in the CBD sector have been found to be unreliable or outright fraudulent, posing a serious risk to brands.

Adjustments ahead

For companies that do not meet Japan's standards, the implications could include reputational damage, lost revenue, and possibly a forced exit from the Japanese market.

Japanese regulators' commitment to enforcing these strict standards highlights the risks for CBD companies entering or already operating in the country. The rapid expansion of CBD's popularity globally has led companies to diversify their supply chains and product formulations, but meeting Japan's standards may require entirely new manufacturing practices and added costs.

Landscape ahead

Industry observers are closely watching how these regulations will affect the Japanese market's growth, and the competitive landscape may shift as only the most compliant brands remain viable.

For companies willing to invest in Japan's regulatory demands, maintaining compliance could provide a competitive edge in a high-stakes market, reinforcing their credibility and commitment to quality.



India is one of the world's largest producer of cotton. Can hemp make inroads?

Asian fiber fusion

India, South Korea join forces to advance hemp textile innovation

Textile stakeholders in India say they plan to partner with South Korean companies to facilitate knowledge sharing, technology transfer, and investment in industrial hemp.

That was one of the outcomes of a recent meeting hosted by the Wool and Woolens Export Promotion Council (WWEPC), which said it plans to exploit the potential in industrial hemp fibers. Attendees discussed innovative ways to greater integrate hemp into India's textile ecosystem, and the benefits of blending hemp with wool to create sustainable blends that can help meet the rising global demand for eco-friendly materials.

The proposed arrangements, in the form of Memorandums of Understanding (MOUs), would support buy-backs for hemp products and introduce advanced textile technologies to India, positioning the country as a key player in the global hemp sector, according to WWEPC.

Ministry assures support

Also during the meeting, India's Minister of Textiles, Giriraj Singh, reaffirmed his commitment to fostering the growth of commercial hemp production, pledging to collaborate with Uttarakhand Chief Minister Pushkar Dhami to draft a proposal aimed at aligning policies

and promoting growth within the hemp sector. Kanika Sood, an agriculturist with Humans of Hemp, emphasized aligning agricultural practices with environmental goals to drive the hemp industry's growth.

Awega Green Technologies (AGT) also announced plans for a pilot project in Uttarakhand to establish a robust hemp farming supply chain, increase farmer incomes, and promote sustainable agricultural practices.

Karan Sarsar of AGT unveiled WWEPC's plans for Bharat Tex 2025, India's premier textile event, where the organization will feature a dedicated pavilion for hemp innovations, a sustainable fashion show showcasing hemp and wool garments, and a conference for industry stakeholders.

"With initiatives like Bharat Tex 2025 and strengthened international collaborations, India is poised to set benchmarks in eco-friendly fashion and fiber production," said WWEPC Chairman Romesh Khajuria.

Indian hemp & history

India's historical connection to hemp dates back thousands of years, with the material playing a vital role in local economies and artisanal crafts. Hemp's durability, versatility, and minimal water requirements make it an ideal candidate

for sustainable textile production, aligning with global trends toward eco-friendly materials.

India's textile industry, one of the largest and most significant globally, contributes approximately 7% to industrial output, 2% to GDP, and 12% to export earnings. With the hemp industry poised for growth, India is positioning itself as a hub for sustainable textile innovation, with prominent figures like Shripat Jagirdar of Weaving Vibes and Shridhar Jagirdar of Karishma Exports backing the vision.

Three states active

As of now, India does not have nationwide legalization for industrial hemp cultivation. However, some states and provinces have made strides toward allowing industrial hemp farming under specific regulations. The primary hemp-producing states in India are Himachal Pradesh and Uttarakhand.

Lawmakers in a third state, Himachal Pradesh, last year passed an amendment to the state's drug law that cleared the way for the production of industrial hemp and medical marijuana. Industrial hemp is limited to the production of fiber, grain and cultivation seed. Hemp farmers can either grow the crop independently or engage in contract farming.

Hemp’s ‘turn to shine’ in NZ?

Stakeholders again push government to unlock crop’s potential

New Zealand hemp stakeholders seem to be keeping their cool, but they can’t help but be frustrated by the slow pace of change in the government’s management of industrial hemp.

Four years after the New Zealand Hemp Industries Association (NZHIA) first outlined the necessary reforms in a landmark paper, the “NZ Hemp Export Driven Investor Report,” industry leaders say outdated laws continue to stifle growth and prevent the nation from capitalizing on the growing global hemp market.

‘Prohibited plant’

Speaking to the primary production select committee of the Parliament last week, Richard Barge, NZHIA chairman calmly reiterated the need to remove hemp from the prohibited plant list and exempt it from the Misuse of Drugs Act and the Medicines Act.

“It’s just another horticultural crop, and it should be treated as such,” Barge said, emphasizing hemp’s non-psychoactive nature. Current regulations create unnecessary hurdles for both domestic and export markets, particularly as global markets for hemp-derived products expand.

The NZHIA predicts that a well-developed hemp sector could contribute \$2 billion annually to New Zealand’s economy by 2030 and create up to 20,000 jobs.

Profits challenged

The industry has already achieved success, with hemp seeds approved for human consumption since 2019. However, the absence of a secondary market, such as animal feed, limits profitability for growers, Barge noted.

Regulations for hemp-derived animal feed and agricultural compounds under the Agricultural Compounds and Veterinary Medicines (ACVM) Act remain restrictive. New Zealand’s Ministry for Primary Industries (MPI) requires proof that hemp feed contains no trace of THC or CBD, a stipulation no local lab can currently verify. While these rules aim to protect New Zealand’s meat and poultry exports, they also hinder innovation in the hemp sector.

“Europe has never had a problem with



NZHIA Chairman Richard Barge

hemp animal food,” Barge said, pointing to Australia and the United States, where progressive regulations now allow hemp feed in certain contexts.

Barge told the committee hemp has untapped potential in functional foods and natural health products. With the right support, he said, New Zealand could develop advanced processing technologies to maximize the plant’s value.

“It’s too large a market to leave on the table,” Barge said. He urged the government to help establish regional processing hubs to handle the bulky raw materials close to production sites, boosting employment and infrastructure use in rural areas.

Global lessons

New Zealand lags behind global leaders in hemp regulation. The United Nations and the European Union have both acknowledged the safety of low-THC hemp products, and the World Health Organization has recommended CBD be classified as safe.

France, Germany, and the United States continue to develop robust legal frameworks that have generally supported the hemp sector. For instance, the U.S. recently approved hemp-derived feed for laying hens, signaling a willingness to integrate hemp into

mainstream agricultural systems.

Nick Marsh, author of the 2020 hemp investor report, urged New Zealand to learn from these examples. “New Zealand lawmakers should look for guidance among legalization schemes in various countries,” he wrote, emphasizing the need for clarity on CBD’s status and the development of a proper export strategy.

Blueprint for reform

Reforming New Zealand’s hemp laws will require balancing consumer safety with market growth. Stakeholders have suggested defining acceptable limits for THC and CBD in hemp products, establishing science-based frameworks for production, sale, and export, and reclassifying CBD as a wellness product rather than a medicine.

Without such changes, the industry risks being left behind in the global market. Barge noted that medicinal cannabis has already gained regulatory support in New Zealand, setting a precedent for industrial hemp to follow.

“It’s industrial hemp’s turn to shine,” Barge said. “With government support, this can become a flagship primary industry for New Zealand.”

The hemp sector faces additional challenges that reflect broader regulatory and market complexities. Products that are illegal to produce or sell domestically are often purchased online and imported by consumers. This discrepancy highlights the need for coherent laws governing non-medical hemp products.

A path forward

Balancing these interests is critical. A well-regulated hemp industry could complement, rather than compete with, traditional agriculture while contributing to New Zealand’s export-driven economy.

Stakeholders and industry leaders are optimistic about the potential of hemp, but they stress that action is needed now. A cooperative approach between government and industry could resolve regulatory uncertainties and unlock significant economic opportunities.

“The industry is ready to go,” Barge said. “We just need the government to remove unwarranted barriers and let us compete on the global stage.”

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Hemp SWOT

Challenges and Chances for Hemp: 2025



Greenlight in Himachal

State’s study explores hemp’s potential for growth and innovation

The government in the Indian state of Himachal Pradesh has approved a pilot study to assess the feasibility of cannabis cultivation for medicinal and industrial purposes. This decision follows the state’s landmark resolution in September 2024, which amended its Narcotic Drugs and Psychotropic Substances rules to legalize controlled cannabis cultivation for non-recreational uses.

The initiative is to identify suitable cannabis strains, develop cultivation best practices, and explore the plant’s industrial and medicinal applications.

The foundation for the pilot study was laid last autumn when the Himachal Pradesh Assembly passed a resolution to regulate cannabis cultivation. The initiative explicitly excludes narcotic products and focuses on industrial hemp for fiber, grain, and seed production.

Farmers have options

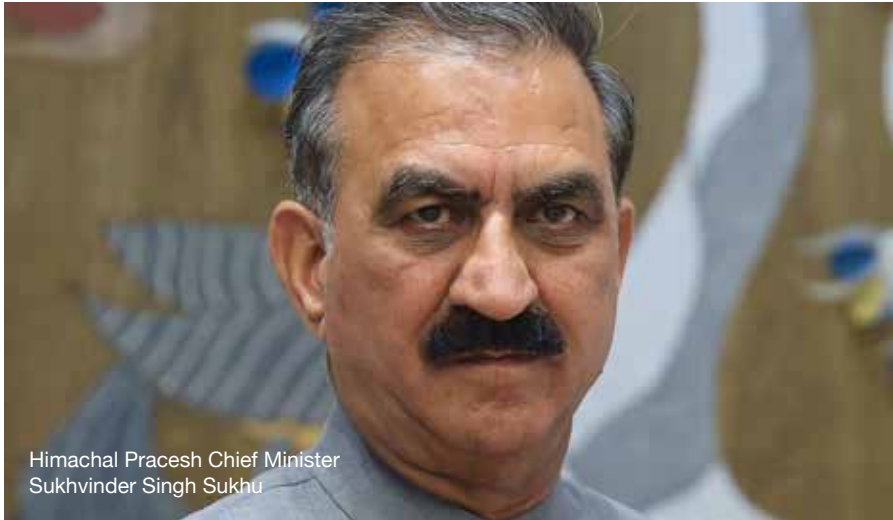
The framework will allow hemp farmers to grow independently or through contract farming, while medical cannabis production will be closely monitored. Facilities cultivating medicinal cannabis will operate under 24-hour CCTV surveillance and be geo-tagged to prevent misuse.

The pilot project will develop standard operating procedures for cultivation, transportation, and manufacturing from hemp while ensuring compliance with the THC limit of 0.3% or less.

Himachal Pradesh Chief Minister Sukhvinder Singh Sukhu said investor interest in industrial hemp is strong, particularly for applications in textiles, bio-composites, pharmaceuticals, and eco-friendly construction materials. Negi emphasized the potential of cannabis to drive rural economic growth and attract investment.

Last year’s resolution also called for establishing a state agency to oversee cannabis production and creating seed banks in collaboration with agriculture and horticulture universities. Revenue Minister Jagat Singh Negi, who chaired the legislative committee behind the resolution, said it visited all the districts of the state and explained to local residents how cannabis can be used for medicinal and industrial applications.

“We also studied the successful mod-



Himachal Pradesh Chief Minister
Sukhvinder Singh Sukhu

els in Jammu and Kashmir, Uttarakhand, and Madhya Pradesh. The overwhelming consensus was in favor of legalizing it in Himachal Pradesh,” Negi said.

In addition to their potential in such massive global sectors as construction and textiles, hemp and hemp farming also promise environmental benefits, including soil improvement, reduced reliance on chemical fertilizers and lower carbon footprints, according to the legislative committee, which stressed that the initiative aligns with Himachal Pradesh’s goals of promoting sustainability and improving rural livelihoods.

Diverse agriculture

Nestled in the western Himalayas just below India’s northern tip, Himachal Pradesh boasts diverse climatic zones that facilitate cultivating a wide range of



crops. These include grains, vegetables, and cash crops like ginger, garlic, and saffron. The state is also renowned for its medicinal and aromatic plants, such as hops, wild marigold, and various herbs.

While agriculture sustains over 60% of the state’s population, most farms are modest in size, with an average of less than one hectare of arable land.

The study announced last week will be spearheaded by two state universities, Chaudhary Sarwan Kumar Himachal Pradesh Agriculture University in Palampur, and the Dr. Yashwant Singh Parmar University of Horticulture and Forestry in Nauni. The state’s agriculture department is to deliver a detailed report within six months.

Challenges and opportunities

Despite its promise, the cannabis sector in India faces hurdles. The availability of quality cannabis seeds is limited, and knowledge gaps persist regarding the development and marketing of hemp-based products. Consumer awareness is still evolving, requiring targeted education campaigns to build demand. Nonetheless, Himachal Pradesh’s diverse climatic zones and fertile land offer significant advantages for cannabis cultivation.

Uttarakhand, the first Indian state to legalize industrial hemp, has struggled to achieve its goals, partly due to weak market linkages and regulatory hurdles. The Himachal Pradesh government plans to address these issues by implementing strict oversight measures and leveraging its universities’ expertise.



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Step by careful step

Moldova approves farming for seed and fiber, but not CBD flowers

Farmers in Moldova will finally be able to grow industrial hemp for food and fiber outputs after amendments to regulate cultivation were approved by the government late last year.

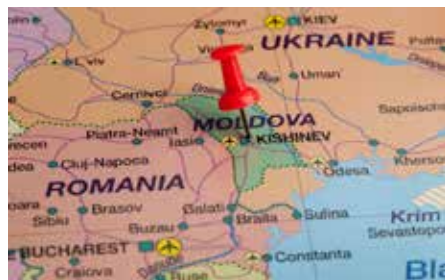
The changes, to rules that cover plants containing narcotic or psychotropic substances, set out a clear definition for industrial hemp, and simplify licensing under authority of the country's food safety agency and the agriculture ministry.

"I urge the whole business community... to promote the use of this opportunity because these materials are used in many industries, including the automotive industry," said Prime Minister Dorin Recean. "It is a very good opportunity for the business environment of the Republic of Moldova, for farmers, as well as for those who produce components from industrial hemp."

Flowers, CBD restricted

The changes apply only to the production of hemp seed and fiber products, and do not ease up on hemp flowers, which remain restricted under Moldovan drug laws and stringent authorization requirements of the Permanent Drug Control Committee.

The regulatory barriers to flower-derived products make the production of CBD and other cannabinoids a challenging prospect in Moldova. Stakeholders



are advocating for further legal clarifications and simplified processes to unlock the economic potential of these products while maintaining regulatory compliance, and the government has indicated ongoing refinement of its hemp policy, which may eventually address these concerns.

Farmers must obtain permits to grow hemp, and the entire cultivation process will be monitored under the regulations in the new program. Growers are limited to hemp varieties included in the Moldovan National Plant Variety Catalog, the EU's Common Catalog of Varieties of Agricultural Plant Species, and the national catalogs of individual EU member countries.

The program was approved earlier this year by the National Anti-Corruption Center

Going circular

"The initiative to regulate the cultivation of industrial hemp has multiple benefits for agriculture, the environment and the

economy," said Sergiu Gherciu, secretary general of the Ministry of Agriculture and Food Industry. "Through the production and processing of industrial hemp, Moldova can develop a circular economy, which will help reduce waste and use every part of the plant, be it as fiber, fuel or building material."

"The approval of this bill will bring only advantages without compromising public safety and is an initiative awaited by many farmers," Gherciu said.

Stakeholders have said growing hemp in Moldova will bring benefits to the country's economy and ecology, and has the potential to increase farmers' income and create jobs. Despite being one of the poorest countries in Europe, Moldova has a moderate climate conducive to hemp cultivation along with productive farmland. In an economy highly dependent on farming, hemp could considerably boost the agriculture sector.

Moldova's hemp history

A part of historic hemp powerhouse Romania up until 1939, Moldova has a tradition of using hemp in textiles, nutrition and medicine. The country's legacy in hemp is reflected by the plant's presence in spontaneous flora.

Agriculture accounts for around 12% of Moldova's GDP and employs approximately 27% of the labor force. Moldova's agriculture is primarily focused on grains, sunflowers, sugar beets, and fruits.

Swedish building materials maker boosts production

Swedish building materials maker Ekolution has opened a state-of-the-art bast fiber processing line at a factory in Malmö.

The line, by Austrian technology group ANDRITZ, will expand production capacity for Ekolution, which makes environmentally friendly hemp fibers and nonwoven felts. The technology supplied includes equipment for hemp decortication and refining, combined with a line for producing felts.

The recently commissioned ANDRITZ line, designed to produce hemp fiber without impurities through a gentle process, is equipped with machinery that has a small footprint and operates at low energy, according to the company.

High-quality fibers

The decortication and refining equipment will produce high-quality fibers from up to five tons of feedstock per hour. Some of the fibers will be fed into a line producing up to 1.5 tons of nonwovens felt per hour for various applications.

Remi Loren, CEO of Ekolution, said the processing operation achieves his company's sustainability targets through a process that makes the most of raw materials while reducing resource consumption.

Ekolution, established in 2013, produces bio-based building solutions and materials using hemp from its own plantations as a raw material. Its hemp fiber insulation was the first with an En-

vironmental Product Declaration (EDP) confirming that it is carbon-negative.

Wide range of uses

Ekolution's hemp panels and nonwoven products were used in the construction of a high-tech logistics center in Stockholm, the world's largest building project using hemp fiber insulation, according to the International Hemp Building Association.

In addition to the construction industry, Ekolution's hemp products can also be used in the automotive, textile, furniture, acoustics, packaging, pulp (paper), and other segments where natural fibers are in demand.



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A long, winding road

UK's Food Standards Agency expects to approve first legal CBD products this year

UK regulators say they are making progress approving CBD products, and expect to cross an important milestone next year on the way to establishing the country's estimated \$850 million market. The Food Standards Agency (FSA) plans to recommend a first set of three product applications to ministers in "Spring/Summer of 2025," the agency said in a report late last year. Consideration at the ministry level can take weeks to months, meaning the country's first legal products could be on the market by the end of the year.

Allowable THC

By now, stakeholders know better than to hope for too much too soon when it comes to the FSA's CBD approval process – in which the agency is sorting through some 12,000 products under rules for new or "novel" foods. The process has been slow to unfold, and an eight-week public consultation planned for early next year could prove contentious over a couple of key issues.

One is allowable THC levels in CBD products, with the FSA aligned with the Home Office's strict interpretation that says any amount of THC in a product technically classifies it as a controlled substance under the Misuse of Drugs Act. However, products can qualify as exempt if the THC is present at extremely low levels, cannot be easily extracted in harmful amounts, and is not intended for delivering THC to humans or animals.

Exemptions are under "Exempt Product Criteria" (EPC), which have been central to recent legal disputes, including a case in which CBD company Jersey Hemp successfully challenged a Home Office decision to block imports of its products, highlighting that trace amounts of THC resulting from manufacturing do not necessarily disqualify a product under the EPC.

Daily intake limits

Legal experts have noted that CBD products can often satisfy the EPC, supporting their lawful trade under UK regulations. The daily intake limit for CBD is

also likely to be a lively topic during the public comment period. The FSA last year drastically reduced its recommendation for total daily intake of CBD, in light of guidance from key government committees – prompting some stakeholders to announce it a death knell for the sector.

The agency now recommends consumers take a maximum of 10mg or "about 4-5 drops of 5% CBD oil" per day, down from 70mg under guidance issued in 2020.

For comparison, the European Industrial Hemp Association has proposed a maximum daily intake level of 17.5mg per day of CBD to the European Food Safety Authority. FSA said it was concerned over evidence that showed taking more than 10mg daily over a period of time produced evidence of some adverse impacts on the liver and thyroid.

Slow to develop

CBD extracts were designated novel food in the UK in January 2019 and all CBD food products must be approved before they can be sold legally. FSA had said it expected the first CBD products to be fully authorized during the latter half of 2023, but the process has lagged well beyond that timeline, and has been controversial.

A wide range of CBD products have been on the UK gray market for several years, including drops, supplements and beverages. To remain on the market pending final approval, those products already in distribution had to have been on sale before Feb. 13, 2020, under FSA rules. Those introduced to the market after that date were not eligible for the agency's consideration.

Of 12,000 products originally submitted to the FSA, roughly 8,000 are in the "validated" or first stage of the agency's review while 6,000 have advanced to the second stage, in which they face risk management review. It is the three mentioned in the recent FSA report that have reached the final stage of the agency's review and will be recommended to ministers next year.

Nearly 600 products have been eliminated from consideration and banned from the market.



Austria will tax and restrict smokable hemp to tobacconists

The Austrian Supreme Administrative Court has ruled that smokable hemp flowers are subject to the country's tobacco tax, and may only be sold in licensed tobacco shops.

While the tobacco tax, which amounts to 34% of the retail price, is expected to generate millions of Euros in additional tax revenues, restricting sales to tobacconists is likely to bring a crippling blow to the country's hemp shops, where raw flowers and smokable pre-rolls are leading items.

Observers have said consumers will be impacted by higher prices for smokable hemp products, which could push some toward the black market.

If it's smokable, tax it

The legal basis for the high court ruling lies in Austria's Tobacco Tax Act, which stipulates that smokable products made wholly or partially from substances other than tobacco are subject to tobacco tax if they are suitable for smoking.

The ruling does not impact the sales of CBD oils and other non-smokable CBD products. CBD oils, edibles, topicals, and similar products remain legal in Austria as long as they contain less than 0.3% THC, in line with EU regulations. These products can still be sold in a wide range of outlets, including health food stores, pharmacies, and online shops.

Austria's CBD rules

While CBD products are legal in Austria, any health claims made about them are tightly regulated and may require specific approvals. Additionally, hemp cultivation for CBD oil production remains legal under EU regulations.

In a legally binding decision applicable across the EU, the European Commission declared in 2020 that CBD is not a narcotic and may be legally traded in and among member states; raw hemp flowers may also be traded if they are under the EU THC limit of 0.3% or less. The ruling was based on a celebrated European Union Court of Justice finding made earlier in the same year.

UK reforms sidestep THC limit, fee reduction

The UK government announced reforms to help hemp farmers, but has not indicated if it intends to raise the THC limit for industrial hemp from 0.2% to 0.3% or cut licensing fees.

Raising the THC limit is seen as a critical change to reduce the risk of farmers losing their harvests due to noncompliance, and – on the upside – because the CBD in hemp plants rises in proportion to THC. The higher limit makes cannabinoid production more efficient.

Under the changes announced, growers will be able to plant hemp anywhere on a licensed farm. Previously, farmers had to delineate the exact fields where they were growing the plants. That change is expected to come into effect for the 2025 growing season.

Longer license period

In the other major changes, the maximum period for a license will be extended from 3 to 6 years, and those applying for a license will be able to defer its start date by up to one year, helping farmers to make business planning easier. Those changes will likely take place ahead of the 2026 growing season.

The Advisory Council on the Misuse of Drugs (ACMD) has recommended raising the THC threshold to give UK farmers a broader selection of cultivation

seed. In addition to potential lost crops, stakeholders have pointed out that moving from a 0.2% to a 0.3% THC threshold would increase the seed options from just a handful to dozens, allowing regional adaptations for varied climates from Scotland to southern England.



Daniel Zeichner, UK Minister for Food Security and Rural Affairs

Raising the limit to 0.3% would increase the viability of hemp production and bring the UK in line with the EU, the US, Canada, and China, all of which follow the 0.3% THC threshold.

ACMD suggested that the benefits of increasing the THC limit outweigh any potential risks.

ACMD had also suggested the licensing fees for cultivating hemp be drastically reduced to £580 (\$751, €695) from the current £4,700 (\$6,092, €5,635). But the government statement did not indicate that any such change is planned.

What about fee cuts?

Despite the lingering questions of fees and the increased THC level, the government said the reforms, developed in

collaboration with experienced growers, will make it easier for farmers to grow the crop and maximize its economic potential.

Greater flexibility

"These improvements to the licensing regime for industrial hemp are a positive step for farmers," said Daniel Zeichner, Minister for Food Security and Rural Affairs.

"Recognizing that industrial hemp is a field-grown agricultural crop, these reforms will simplify the license application process and provide greater flexibility within the crop rotation, enabling farmers to fully realize the economic and environmental benefits of the crop."

In a statement announcing the policy changes, the government comforted: "The plant is grown for strictly lawful purposes, such as for use in the construction and textiles industries, and only farmers with a license are allowed to plant it."

Yet it still felt compelled to warn: "The government recognizes cannabis is a harmful substance and expects police to take action against its misuse and supply. As a Class B substance, being caught possessing cannabis carries a maximum sentence of 5 years in prison, a fine or both(!).

European alliance creates 'Linen & Hemp Dream Lab'

A European trade group has launched a new online platform that aims to revolutionize textile research and sourcing for the fashion and home sectors.

The Linen & Hemp Dream Lab aims to empower designers and producers to meet growing industry demands for innovative, eco-friendly solutions in fashion, home décor, and technical textiles, according to the Alliance for European Flax-Linen & Hemp.

The Alliance said the Dream Lab enables users to select from a vast array of creative textiles while exploring innovative materials based on the two natural fiber sources.

The project combines the capabilities of two former platforms, linendreamlab.eu and flaxandhempdirectory.com, into a single destination aimed at industry professionals.

1,000+ innovations

The platform offers an expanded catalogue for designers, creative teams, industrial



professionals, and buyers. More than 1,000 material innovations are showcased. A physical showroom at the Alliance's headquarters in Paris, where visitors can explore textile materials and composite solutions firsthand, complements the digital lab.

Designed to encourage innovation, the Linen & Hemp Dream Lab highlights the expertise of spinners, weavers, knitters, and composite material specialists, all members of the Alliance.

Users interested in the fashion, home, and technical textile markets can filter materials by product type, market focus,

composition, and other essential criteria such as width, weight, and minimum order quantities. Additional filtering options include thematic inspiration for characteristics, textures, and patterns.

Bridge for creatives, producers

To simplify the material evaluation process, the platform features detailed product sheets showcasing technical characteristics and potential applications. High-resolution zooms offer close examination of material details.

The expanded catalog not only covers textiles for fashion and home but also technical solutions such as reinforcements, composites, and fillers. The platform also allows users to contact suppliers directly.

The Alliance said that beyond being a comprehensive sourcing tool, Linen & Hemp Dream Lab aims to serve as a bridge between the creative industries and European linen and hemp producers.



Michael Mwandha, left, heads the Ugandan Sativa Project

Taking root in Uganda

Successful seed trials sow hope for a pioneering hemp program

In the heart of East Africa, Uganda is witnessing a transformative initiative aimed at establishing its first industrial hemp industry. Spearheaded by Mwamic General Enterprises SMS Ltd, under the leadership of Michael Mwandha, the Ugandan Sativa Project is navigating the complexities of Uganda's regulatory frameworks, hoping to harness the potential of hemp cultivation.

An initial planting of 192 seeds at a site in Bwigula, in Uganda's Eastern Region, yielded 2,300 seeds, demonstrating the crop's adaptability to the country's climate, Mwandha said. The trials have provided valuable insights into soil fertility, pest management, and organic pesticide development, laying a solid foundation for future large-scale cultivation," he said.

Strategic vision

"The success of our trial farm demonstrates that industrial hemp can thrive in Uganda," Mwandha said. "This is not just about cultivation – it's about establishing a supply chain that empowers farmers and strengthens Uganda's agricultural economy."

According to Mwandha, the Uganda Sativa Project is structured around committees representing three core farming groups. Trial farmers are focused on seed

research to optimize crop performance; model farmers serve as trainers in hemp-farming best practices; and an out-growers committee will work to expand the number of hemp farmers. Some 45,000 veterans from eastern Uganda willing to grow hemp, Mwandha said.

The overarching goal is to establish Uganda's first hemp processing facility, capable of handling fiber processing, hurd processing, and seed oil extraction, thereby creating a self-sustaining supply chain.

A significant challenge facing the project is Uganda's current narcotics legislation, which does not distinguish between industrial hemp and marijuana. Mwandha said the lack of legal clarity hampers cultivation efforts and deters potential investors. His group is actively engaging with policymakers to advocate for regulatory reforms that will facilitate the growth of the hemp industry. Ignorance surrounding hemp among the Ugandan public is also a challenge, requiring educational initiatives, according to Mwandha

Government support

"One of the biggest hurdles we face is legislative clarity," said Joseph Carringer, Lead Strategist and Project Manager at CMG, strategic advisor to the Uganda

project. "By working with policymakers to establish clear regulations, we can unlock investment opportunities and position Uganda as a leader in industrial hemp production in Africa."

To help in facing these challenges, the Uganda Sativa Project has garnered support from key government ministries including those for regional cooperation, health, agriculture, internal affairs, wealth creation and defense, according to Mwandha.

GreenWave Enterprises, a U.S.-based non-profit, is coordinating fundraising efforts for the project's ambitious plans, while Canna Markets Group is leading project management and strategic planning.

Plans for carbon

CarbonConnect, a German specialist, is a consulting partner on the project. The Hamburg-based company has developed sustainable carbon strategies for small shareholder organizations in Africa and Latin America that create revenue streams for participating farmers.

Mwandha's company, Mwamic General Enterprises, is a farming consultant and trader. The company collaborates with stakeholders to implement agricultural projects, train farmers, and promote local products in global markets.



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A cannabis plan for Botswana

President hopes cannabis can ease dependence on diamond trade

Hemp and medical cannabis have been singled out for development in Botswana, under newly elected President Duma Boko’s agenda to diversify the country’s diamond-reliant economy. Speaking during his first State of the Nation address in October, Boko underscored the country’s plans to leverage its natural resources, such as abundant sunlight, to develop sectors with high potential, including renewable energy and agriculture. The move into cannabis and hemp aims to capitalize on the growing global demand for these crops while diversifying Botswana’s agricultural output, Boko said.

Boko’s administration has received widespread attention over his roadmap for growth and economic transformation after his historic electoral victory over the Botswana Democratic Party (BDP), which had ruled the country since it achieved independence in 1966. Among his goals is to establish Botswana as a competitive player in international cannabis markets, with the hope that hemp and cannabis products can boost GDP and generate jobs.

Diamonds in decline

Botswana’s diamond revenues, which contribute about 80% of its foreign earnings, have dropped by over 60% in recent years, creating urgency for economic diversification. “The decline in diamond revenues is a clear signal that we can no longer depend on a single commodity,” Boko said. Addressing Botswana’s unemployment crisis, where joblessness affects 27% of the population and 38% of youth, Boko emphasized initiatives in manufacturing, construction, and youth-led entrepreneurship. He also announced a partnership with U.S.-based Starlink to provide affordable internet connectivity across the country to expand e-commerce opportunities.



“We can no longer depend on a single commodity.”

President Duma Boko

Cautious on cannabis

Under the existing legal framework, Botswana’s approach to cannabis remains cautious, with strict regulation distinguishing between marijuana and hemp. Marijuana cultivation, possession, and use are illegal for both recreational and medical purposes, and there have been no substantial moves toward decriminalization or legalization. Hemp cultivation in Botswana requires official exemptions and adherence to strict oversight, reflecting the previous government’s hesitancy to fully embrace cannabis-related industries.

However, a 2022 High Court ruling



opened the door for limited industrial hemp activities. In a case considered a landmark, the court reinstated a previously revoked exemption granted to a farmer to cultivate and process hemp for medical and industrial purposes. The decision highlighted gaps in the regulatory framework which the Boko government can be expected to overhaul.

African laggard

Botswana’s cannabis policies are lagging compared to other African nations like Zambia, Zimbabwe, South Africa, Uganda, Lesotho, Kenya, Ghana, and the Democratic Republic of Congo, many of which have adopted laws permitting cannabis farming for medicinal or industrial purposes. Botswana’s arid climate and vast natural sunlight – 3,200 hours annually – make it suitable for crops requiring consistent warmth and dry conditions. Traditional agricultural production has focused on drought-resistant crops such as sorghum, maize, millet, and legumes, alongside livestock farming, which is integral to the rural economy. However, limited rainfall and periodic droughts constrain agricultural productivity.

Valorization in Zimbabwe

Agro-industrial park puts hemp at center stage in farming renewal project

Zimbabwe’s ambitious \$16.9 million Goromonzi Agro-Industrial Park, a project aimed at transforming the nation’s agricultural sector, is set to include a significant focus on industrial hemp and cannabis production. The project, designated as a Special Economic Zone, aims to combine advanced farming techniques, agro-processing facilities, and high-value crop cultivation to drive economic growth and job creation.

Located on a sprawling 1,025-hectare site in the Goromonzi District, 40 kilometers east of Harare, the agro-industrial park is part of the government’s broader strategy to modernize agriculture and increase farm value. The cultivation of industrial hemp and cannabis for medicinal and industrial purposes is expected to be a cornerstone of the park’s activities, which will include horticulture and high-tech farming.

With strategic investment in research and innovation, the hemp industry could play a pivotal role in Zimbabwe’s agricultural transformation.

Three-phase rollout

The development will roll out in three phases, requiring investments of \$2.99 million, \$4.87 million, and \$9.02 million over six years. Funds will be allocated to core infrastructure projects, including water systems, smart systems, and agro-processing facilities designed to handle raw agricultural products and convert them into finished goods for both local and export markets. The Goromonzi Agro-Industrial Park has reportedly gotten notice from international investors, including entities from the United Arab Emirates, which have expressed interest in contributing expertise and financing to the project. It was also showcased during the Southern African Development Community Industrialisation Week in 2024, where it was highlighted as a transformative initiative for the region’s agricultural sector.



The park represents a key component of Zimbabwe’s economic transformation agenda, aimed at enhancing productivity, boosting food security, and creating thousands of jobs. With the incorporation of industrial hemp and cannabis, the project also positions Zimbabwe to tap into the growing global market for hemp-based products, ranging from textiles to bioplastics and pharmaceuticals.

Looking for money

Currently in its implementation phase, the project has completed its feasibility study and is actively seeking additional investments to move forward with construction and going online. By focusing on value addition and industrialization, the Goromonzi Agro-Industrial Park is poised to serve as a model for agro-industrial development across Africa. Zimbabwe’s hemp industry, though promising, is still navigating significant challenges as it emerges from its infancy. While regulatory strides, such as the 2019 Industrial Hemp Regulations, have paved the way for legal cultivation and production, stakeholders are grappling with issues like limited access to seeds, high cultivation costs, and unreliable market dynamics. These hurdles have disrupted potential growth, with some farmers unable to fulfill previously arranged export deals.

A significant “knowledge gap” in cannabis farming practices has further

hindered progress, particularly among small-scale farmers who often lack the resources and expertise to navigate the industry’s demands.

Innovation is critical

The absence of locally available seeds has forced farmers to rely on costly imports, further driving up production expenses. Efforts to innovate and diversify hemp products, including hemp cigarettes and broader applications for CBD oil, are viewed as essential steps to solidify the industry’s foundation. The Zimbabwean government began formalizing the hemp industry with the legalization of industrial hemp in 2019 and the subsequent opening of the domestic market for CBD in 2020. The Criminal Law Amendment Bill of 2022 further distinguished hemp from marijuana, providing greater legal clarity for producers. Despite these developments, experts believe progress remains slow due to ongoing efforts to develop hemp varieties better suited to Zimbabwe’s climate and conditions. As a nation historically reliant on tobacco, which accounts for 20% of its exports, Zimbabwe views industrial hemp as a potential alternative for the struggling sector. However, to fully realize its potential, stakeholders are advocating for diversification beyond CBD production, exploring hemp’s vast applications in food, fiber, and other industrial products.

Brazil cracks open the door

Court backs medical CBD, but bypasses industrial applications

Brazil's Superior Court of Justice (STJ) has upheld a six-month deadline for the country's food and drug agency to regulate the import, cultivation, and sale of hemp for medicinal, pharmaceutical, and industrial use. The deadline period started Nov. 19, 2024, and ends May 19 this year.

The ruling reinforces an earlier decision to bring clarity to the status of low-THC cannabis for medicinal, pharmaceutical, and industrial purposes. It could reshape Brazil's approach to industrial hemp.

In an early February session, the STJ unanimously rejected a request from ANVISA (Brazil's food and drug authority) and the attorney general's office to extend the timeline to 12 months, citing the need for more time to comply with regulatory requirements.

Justice Regina Helena Costa emphasized that the court's ruling was clear and resulted from an extensive debate during the appeal trial. The decision reflects Brazil's ongoing struggle to reconcile regulatory caution with growing interest in hemp's economic potential.

Regulatory odyssey

The case traces back to a legal challenge from a biotechnology company seeking to import and cultivate industrial hemp for medicinal and industrial uses. The Federal Regional Court of the Fourth Region initially denied the request, arguing that authorizing hemp imports was a matter of public policy beyond the judiciary's scope. However, the STJ overruled this, mandating that ANVISA and the Union establish a regulatory framework under the May deadline.

Failure to meet this timeline could prompt renewed legal challenges or requests for extensions. However, Justice Costa noted that any future extension would require proof of concrete efforts by ANVISA to comply with the court's rulings.

The overruling by the STJ underscored that industrial hemp, with a THC concentration below 0.3%, does not fall under the restrictions of Brazil's Narcotics Act, as it cannot produce psychotropic effects or cause dependency. Nevertheless, the government retains authority over all cannabis varieties, including industrial hemp, under Brazilian and international narcotics laws.

The STJ ruling strictly applies to hemp



STJ Justice Regina Helena Costa

used for medicinal and pharmaceutical purposes, emphasizing the "right to health" as a legal basis. Costa noted that the decision is limited to health-related applications, and does not address broader agricultural uses of industrial hemp.

This narrow interpretation has sparked disappointment among stakeholders who had hoped for a more expansive ruling to include industrial applications. The restriction leaves unresolved questions about hemp's potential as an agricultural commodity in Brazil, despite growing interest in hemp for textiles, construction materials, and bioplastics – which the ruling does not explicitly address.

Market potential

Brazil's decision is closely watched by international cannabis companies, given the country's potential to become a significant player in the global medical CBD market. With a population exceeding 200 million and increasing acceptance of cannabis-based treatments, Brazil is positioned to be a lucrative market for CBD producers. According to Statista, Brazil's demand for medical CBD and medical marijuana is projected to reach \$185 million in 2024, with CBD accounting for up to 80% due to its wider range of uses and fewer regulatory hurdles compared to THC.

The STJ ruling, originally made in November 2024, could intensify competition for international firms, including Ireland-based Jazz Pharmaceuticals, which markets Epidiolex, the first FDA-approved prescription CBD medicine for epilepsy. Jazz Pharmaceuticals entered the Brazilian market

in 2019 under strict regulatory guidelines. As Brazil's regulatory framework evolves, domestic producers and multinational companies could vie for market share, driving growth in local cultivation, extraction, and processing industries.

Five binding rulings

The STJ outlined five binding rulings as part of its decision last November:

- Industrial hemp, with a THC concentration below 0.3%, is not classified as a prohibited substance under Brazil's Narcotics Act, as it cannot cause dependency.
- The government retains authority to manage and control all cannabis varieties, including industrial hemp, under the Brazilian Narcotics Act and international conventions. Courts cannot authorize hemp for non-medical or non-pharmaceutical purposes.
- Regulations by Anvisa prohibiting seed imports and domestic cultivation must align with the Narcotics Act, allowing for industrial hemp under the specified THC limit.
- Legal entities may plant, cultivate, industrialize, and sell industrial hemp exclusively for medical and pharmaceutical purposes, subject to future regulations by ANVISA and the federal government.
- ANVISA and the federal government must implement measures to prevent misuse or diversion of seeds and plants, ensuring safety and integrity within the production and commercial chain.

Argentina tightens rules to boost compliance, 'integrity'

Argentina's Regulatory Agency for the Hemp and Medicinal Cannabis Industry (ARICCAME) has approved a regulation that establishes provisions for dealing with violations of the nation's regulatory framework for hemp and medical marijuana.



The provisions, in a recently passed Sanctioning Procedure Regulation, are effective immediately.

They address non-compliance with licensing conditions and reporting obligations, emphasizing transparency and accountability. ARICCAME said the aims are to bolster compliance to ensure the industry operates within a clear legal framework, uphold industry integrity and protect stakeholders.

Framework for accountability

Under key provisions of the regulation:

- Violations of the regulatory framework will result in administrative sanctions. Penalties include fines, license suspensions, and, in severe cases, license revocation.
- Due process is guaranteed. Summaries of alleged violations may be initiated ex officio or based on reports from administrative or judicial bodies, as well as individual complaints.
- Failure to fulfill licensing obligations, including fee payments and accurate reporting, may lead to sanctions. ARICCAME retains the authority to suspend

or revoke licenses depending on the severity of the infraction. Sanctions are determined after thorough administrative review, considering the severity of violations and the offender's conduct.

The regulation builds on previous measures, including one passed last year which established licensing procedures for non-psychoactive industrial hemp activities such as seed, grain, and fiber production.

ARICCAME has a mandate to regulate, control, and issue administrative authorizations for cannabis and hemp-related activities. By introducing the Sanctioning Procedure Regulation, the agency aims to establish a precedent for compliance and promote sustainable growth within Argentina's hemp and medicinal cannabis sectors, according to the agency.

According to the resolution, the new regulation reflects Argentina's dedication to fostering an internationally competitive hemp and medicinal cannabis industry, ensuring alignment with global best practices while safeguarding the public interest.

Unfolding slowly

Argentina passed a law legalizing hemp in 2022 – allowing hemp to move into the farming mainstream in one of the world's leading agricultural nations, where the crop can serve as a replacement for a shrinking tobacco sector, and lead to innovation in technology and product development, the government has said.

By setting the THC level for Argentinian hemp at a full 1.0%, the government is

following in the footsteps of leading hemp nations around the world and going beyond the widely accepted global benchmark of 0.3% THC as the dividing line between hemp and marijuana.

But the rules exclude the processing of CBD itself, which is restricted under a 2020 decree that made CBD- and THC-based products legal to import but only for medical patients, with sales limited to pharmacies under doctor prescriptions.

ARICCAME history

The government formed ARICCAME in 2023 as a central clearinghouse for the administration of the cannabis industry, assigning it a broad mandate to promote research and technological progress, ensure consumer safety and cooperate with state agencies and universities.

Argentina's Ministry of Science has said it intends to invest more than \$106 million in 13 research and development projects in hemp and cannabis across six provinces. Also in 2023 the government created Cannabis Conicet, a technology company aimed at advancing the industrial hemp and medical cannabis sectors.

The government is advancing a whole-plant strategy for hemp that aims to exploit the crop for its health and environmental benefits in addition to its potential for economic development. Permitted uses include human and veterinary medicines, nutritional, cosmetic, and industrial, as well as future applications that may emerge from ongoing research and technological development.

Will Guyana's hemp industry finally get off the ground?

Guyana is on the cusp of a significant milestone in its hemp industry development as the Agriculture Ministry prepares to appoint a Chief Executive Officer (CEO) for the Industrial Hemp Regulatory Authority (IHRA). Minister Zulfikar Mustapha has confirmed that this critical role is expected to be filled soon, with operations set to commence by the end of February.

The planned appointment follows the recent formation of the IHRA board and marks a key step in the country's journey toward commercializing industrial hemp.

Slow progress

Guyana's Industrial Hemp Act, passed in 2022, established the legal framework for hemp cultivation, setting the maximum THC level at 0.3% or less. The IHRA will handle licensing, monitor cultivation, and enforce regulations to ensure compli-

ance with the law. Those found growing or processing hemp without a license face hefty fines or imprisonment.

Despite the Act being passed over two years ago, progress has been slow, largely due to the absence of a functioning regulatory body. This delay has held up the widespread commercialization of hemp, which could boost Guyana's agriculture sector, particularly as the country grapples with declines in traditional crops like rice and sugarcane.

According to government estimates, up to 50,000 farmers are out of work, and hemp could create tens of thousands of sustainable jobs.

Cort Gomes, Secretary of the Guyana Hemp Association (GHA), emphasized the importance of careful planning. "What we don't want is to rush into this and risk a failing industry," he said, expressing optimism that the IHRA board would soon be fully established. The board's primary task will be

overseeing the licensing process, which is expected to begin soon.

Regions are targeted

Regions Six (East Berbice-Corentyne) and Ten (Upper Demerara-Upper Berbice) have been earmarked for initial hemp cultivation, with small-scale farmers set to cultivate one to two acres each. The industry is expected to bring a wide range of economic benefits, from the creation of jobs in hemp farming and processing to potential commercial growth in sectors such as retail, banking, and insurance.

Advocates have also worked to distinguish hemp from marijuana, an essential step in educating the public and avoiding stigma. The government's approach includes stringent regulations to prevent misuse, including a partnership with the Customs Anti-Narcotic Unit (CANU) to monitor production and ensure compliance.

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Hemp agricultural firm based in the Silesian city of Katowice. Firm has its own land and has put together a consortium of farmers from whom it contracts additional fields.

Key Contact: Patryk Czech
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Bionexo S.R.L.

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Export of bioenergy and agricultural products including their international logistics, foreign trade, analysis and market trends.

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Australian Hemp Council

Organizations/Australia

National peak body formed in June 2020 under the Federation model. It comprises a single representative from the local industrial hemp association within each of our nation's six states and the Northern Territory.

Email: info@australianhempcouncil.org.au



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