

Texas Scientists Create Drought-Resistant Hemp Strain

Texas A&M's Hemp Breeding Program Develops Drought-Resistant Hemp Strains for Extreme Conditions

Researchers at Texas A&M University have reached a significant breakthrough in the world of hemp cultivation by developing drought-resistant hemp strains designed to withstand the challenging and extreme conditions of Texas. Led by Dr. Russell Jessup, the university's hemp breeding program is making strides in genetic research to produce hemp varieties that can thrive in arid environments and high temperatures.

This achievement not only promises to transform industrial hemp farming in Texas but also contributes to national efforts to improve the crop's resilience in the face of climate change. These strains will soon be added to [the U.S. Department of Agriculture's \(USDA\)](#) national collection, providing a valuable resource for farmers across the country.

Texas A&M's Approach to Breeding Super Strains

The Texas A&M hemp breeding program, led by Dr. Jessup, employs rigorous testing methods to ensure the hardiness of their hemp strains. The program focuses on creating plants that can endure Texas' extreme climate, characterized by sweltering heat, periods of drought, and unpredictable humidity.

In an interview with *The Austin Chronicle*, Dr. Jessup shared insights into the breeding process, explaining how his team pushes the limits of each hemp strain: "We torture plants with high lights, high temperature, high salts, I don't water them, I put them in poor soil. We torture the heck out of them, then see which ones are the MMA plants, and those are the ones we pick."

This harsh testing regime ensures that only the strongest, most resilient hemp plants are selected for further breeding and development. The ultimate goal is to produce hemp varieties that can not only survive but thrive in the hostile environments commonly found in Texas.

Tailoring Hemp Strains to Texas' Extreme Climate

One of the primary challenges for hemp farmers in Texas is the region's diverse and often harsh climate. In northern areas such as Amarillo, hemp strains from Colorado, Oregon, and Europe perform moderately well. However, as you move further south, especially below Austin, traditional hemp varieties struggle to cope with the heat and arid conditions.

Texas A&M's breeding program is focused on addressing this issue by selecting and refining genetics that can withstand extreme heat and drought. The resulting strains are specifically designed for farmers interested in cultivating hemp for industrial purposes, such as seed or fiber production.

The program's success offers hope to farmers across Texas and beyond, as these new drought-resistant hemp varieties could open new doors for cultivation in previously unsuitable regions.

Drought-Resistant Hemp and Sustainability

Hemp's value goes far beyond its industrial applications. The crop is increasingly being recognized as an important tool in sustainability efforts and climate change mitigation. Hemp's unique properties make it an ideal crop for carbon sequestration, helping to absorb large amounts of carbon dioxide (CO₂) from the atmosphere.

Research has shown that hemp can absorb up to 16 tons of CO₂ per hectare annually, which is significantly more than traditional crops and even some trees. This ability to sequester carbon has made hemp a popular choice for carbon farming initiatives aimed at reducing greenhouse gas emissions.

In addition to its environmental benefits, hemp requires less water than many other crops, such as cotton, making it an attractive option for regions facing water scarcity. This reduction in water use is particularly important in areas like Texas, where droughts are frequent, and water resources are limited.

USDA and Hemp Research

The U.S. Department of Agriculture has been heavily involved in promoting hemp research, investing millions into programs that explore hemp's role in sustainable agriculture and climate solutions. Since the launch of the Hemp Production Program, the USDA has supported a range of research projects designed to maximize the crop's potential benefits, from industrial applications to environmental impact.

As part of this initiative, the USDA has certified 19 varieties of hemp, adding to its growing germplasm collection. Texas A&M's drought-resistant hemp strains will soon join this national collection, providing even more options for farmers looking to cultivate hemp in extreme conditions.

These certified varieties help ensure that hemp growers have access to robust, resilient strains capable of thriving in diverse climates, from arid regions like Texas to more temperate zones.

Future Implications for Farmers and the Hemp Industry

The development of drought-resistant hemp strains is a game-changer for farmers in Texas and other arid regions. These resilient strains not only make it possible to cultivate hemp in areas that were once considered too hostile for farming, but they also offer a sustainable alternative to water-intensive crops.

With climate change continuing to exacerbate weather extremes, the demand for crops that can withstand harsh conditions is growing. Texas A&M's research contributes significantly to meeting that demand by offering farmers new tools to adapt to changing climates and reduce the environmental impact of agriculture.

Furthermore, as hemp's economic and environmental potential becomes more widely recognized, it is likely to play an increasingly important role in both local and global efforts to address climate change. The addition of drought-resistant varieties to the USDA's national collection marks a major step forward in the evolution of hemp as a sustainable and versatile crop.

Texas A&M's hemp breeding program, led by Dr. Russell Jessup, has made a groundbreaking contribution to agricultural sustainability by developing drought-resistant hemp strains capable of thriving in extreme conditions. This innovation promises to transform hemp farming in Texas and other arid regions, while also contributing to larger efforts to combat climate change through sustainable agriculture.

By adding these resilient strains to the USDA's national germplasm collection, Texas A&M is helping to ensure that farmers across the country have access to the tools they need to grow hemp successfully, even in the most challenging environments.

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