



# Economic Viability of Industrial Hemp in the United States: A Review of State Pilot Programs

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## What is the Issue?

After a hiatus of almost 45 years, the Agricultural Act of 2014, Public Law 113-79 (the 2014 Farm Bill) reintroduced industrial hemp production in the United States through State pilot programs. Beginning in 2014, States with laws that allowed growth or cultivation of industrial hemp could establish a pilot program or conduct research on the crop. Production beyond the pilot programs was legalized in the Agricultural Improvement Act of 2018, Public Law 115-334 (the 2018 Farm Bill). This study documents outcomes and lessons learned from the State pilot programs and examines legal, agronomic, and economic challenges that may affect the transition from the pilot programs to economically viable commercial production.

## What Did the Study Find?

Under the pilot programs, United States industrial hemp acreage reported by States increased from zero in 2013 to over 90,000 acres in 2018, the largest U.S. hemp acreage since the 146,200 acres planted in 1943.

The State pilot programs restarted production of a crop that had not been grown in the United States for decades. Some challenges became apparent:

- establishing State legislation that allowed hemp to be grown or cultivated;
- acquiring critical production inputs (e.g., seeds, insecticides, herbicides) and credit;
- inconsistency between State requirements; and
- lack of basic data and information for decision-making.

The 2018 Farm Bill addressed many of the challenges identified in the pilot programs or authorized subsequent regulations to address them.

The pattern of establishment and expansion of industrial hemp was influenced by existing infrastructure, public sector support, relative profitability of alternative enterprises, and ultimately market development and economic returns. After the pilot programs, acreage continued to expand with 146,065 acres of hemp reported as planted to the U.S. Department of Agriculture's (USDA) Farm Service Agency in 2019.

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By December 2019, hemp could be grown legally in every State except Idaho, Mississippi, and South Dakota. As with other crops, it is not likely that hemp will be economically viable in every State. Even if barriers to entry are low, growers are not likely to plant or process hemp if more profitable options exist. States that moved quickly to establish pilot programs were not leading producers of competing major field crops.

Long-run economic viability will be affected by factors including

- competition from other domestic crops for acreage,
- global competitors in hemp and hemp products,
- market information and transparency, and
- the regulatory environment.

## **How Was the Study Conducted?**

This study is based on a collection of the available data drawn from State pilot program annual reports, website information, USDA's Farm Service Agency, unstructured discussions with State staff, and third-party information. Study results provide a detailed synthesis of the pilot programs established by the 2014 Farm Bill and identify lessons learned including factors that will affect economic viability of the industry moving towards commercial production. There is no systematic comprehensive data source regarding the emerging United States hemp industry or requirement to report a consistent set of data for the pilot programs. States collected data at various times and levels of aggregation. For example, some States report hemp data by intended end use (i.e., grain, fiber, cannabidiol (CBD) or other extracts) while others do not report data. Some States categorize applicants separately as processors or growers while other States report only total applicants. To provide the most complete information available on each pilot program, we have not tried to consolidate information about licensing and applications when categories are inconsistent. Since the data are from various sources, and reporting categories and definitions vary, caution should be used in adding State data from multiple sources to reach national or regional statistics.