

USDA FINAL HEMP RULE:

A Handbook for Hemp & CBD Businesses



**Quick reference guide on
the final USDA hemp rules
for cultivators**

INTRODUCTION



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Hemp Industry Daily

The mishmash of hemp rules is on its way out!

More than two years after Congress made hemp a legal agricultural commodity, farmers finally have one national set of rules for growing it—instead of a confusing, state-by-state patchwork of guidelines on how to grow and test low-THC cannabis plants.

When the U.S. Department of Agriculture suggested a set of nationwide hemp regulations in late 2019, the agency acknowledged it had some learning to do about how to regulate this new commodity.

The USDA collected roughly 5,900 comments on the proposed rules and used many of them to adjust the final set of regulations for growing and selling hemp.

This updated special report lays out the changes and highlights what the U.S. government has learned about hemp production after two legal growing seasons. Inside you'll find:

- Hemp acreage projections through 2025.
- How much hemp is being grown for flower, fiber and grain—with projections for production through 2025.
- Why the USDA is loosening sampling requirements to save farmers money.
- New predictions on how much hemp violates THC limits.
- Details on the first-ever plan to allow farmers to sell hemp that fails THC inspections.
- Which hemp rules aren't changing anytime soon.

Consider this report your essential reference guide for understanding the USDA's final hemp rules and how they will affect your business.

No doubt the agency will continue making changes to these regulations, especially as a new administration takes over. The day after these rules were published, President Joe Biden's White House announced plans to review recent federal agency actions—and potentially reopen them for public comment.

Still, these rules represent a major step toward the establishment of a national hemp market. Even with changes, these rules form the foundation of the legal hemp industry for years to come.

If you have any questions or want to provide feedback, please contact me at kristen.nichols@hempindustrydaily.com.

A handwritten signature in black ink that reads "Kristen Nichols".

WHAT'S NEW IN THE USDA'S FINAL HEMP RULE – AND WHAT'S NOT

WHAT'S CHANGING

Hemp producers have 30 days before harvest to get their plants tested for THC, up from 15 days.

Hemp that exceeds 0.3% THC (hot hemp) can be destroyed on the farm using common agricultural practices instead of taken off-site and destroyed under federal drug-disposal guidelines.

States, territories and tribes can adopt new risk-based THC testing protocols that won't require 100% of all hemp lots to be tested, as long as the governmental entity can demonstrate 95% confidence that the new protocols won't allow illegal marijuana to slip through. The change could lead to reduced testing on fiber and grain varieties or for producers with a record of compliance.

Farmers can salvage hot hemp by either destroying the flower material and selling other plant parts or by combining the entire plant into biomass that doesn't test above 0.3% THC.

Farmers have more breathing room before being considered "negligent" for producing hot hemp. The new negligence standard is 1% THC, up from 0.5% THC.

Farmers can't be cited for negligent hemp production more than once in a calendar year, addressing concerns that they could get multiple violations for growing in different areas and then lose licenses for five years.

States, territories and tribes have until 2022 to require THC testing be done in a lab certified by the U.S. Drug Enforcement Administration.

The USDA will accept hemp permit applications year-round.

WHAT'S NOT

THC tests must account for total THC, not just delta-9 THC. This complies with 2018 Farm Bill language requiring "post-decarboxylation or other similarly reliable methods" for testing.

Hemp producers must make in-person visits to a USDA Farm Service Agency office to report results and get information about federal conservation and other USDA farm programs.

Pre-harvest hemp samples must come from the plant's flowering tops.

Any flower portions of hemp plants in excess of 0.3% THC must be destroyed and can't be mitigated through manufacturing to reduce THC content.

Certified seeds and genetics are not required by the USDA, though producers are encouraged to use varieties tested for purity and performance.

Hemp samples must be collected by a third-party agent, instead by the farmer.

Hemp-testing labs do not need to be certified by the International Organization for Standardization, though so-called ISO certification is encouraged.

The DEA retains jurisdiction over any cannabis with THC above 0.3% THC. This is why hemp-testing labs must be certified by the DEA.

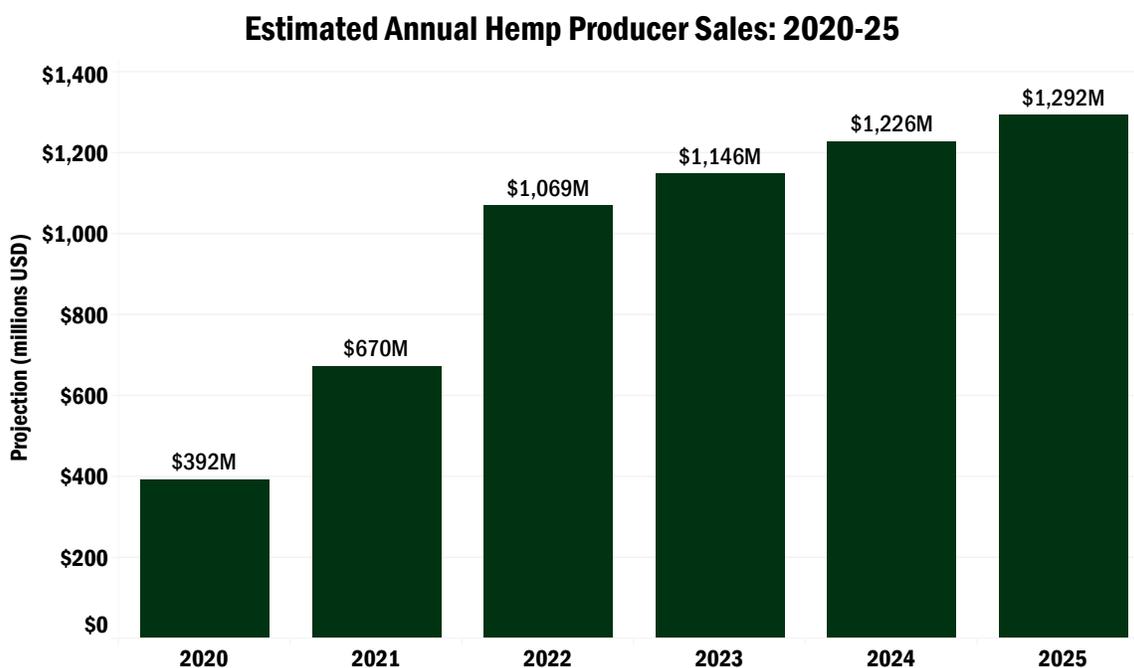
The USDA will not issue labels or stamps to verify that cargo hemp is compliant with a USDA-approved production plan. The agency encourages anyone transporting hemp to carry lab reports and copies of their hemp grower licenses.

The federal agriculture department will not set any kind of hemp quota system to prevent oversupply.

The USDA continues to put off rules for hemp exporting but says it will work on rules if exporting interest materializes.

MARKET PROJECTIONS

Chart: Estimated Annual Hemp Producer Sales: 2020-25



Source: Nielsen, U.S. Department of Agriculture and Hemp Industry Daily
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Hemp Industry Daily projects retail sales of hemp products total \$3.9 billion in 2021—an increase of \$1.6 billion over 2020. In 2022, retail sales are expected to make an even bigger leap to nearly \$6.3 billion. Our estimates vary from the USDA’s because the agency relied on multiple sources—including *Hemp Industry Daily*—to determine its projections.

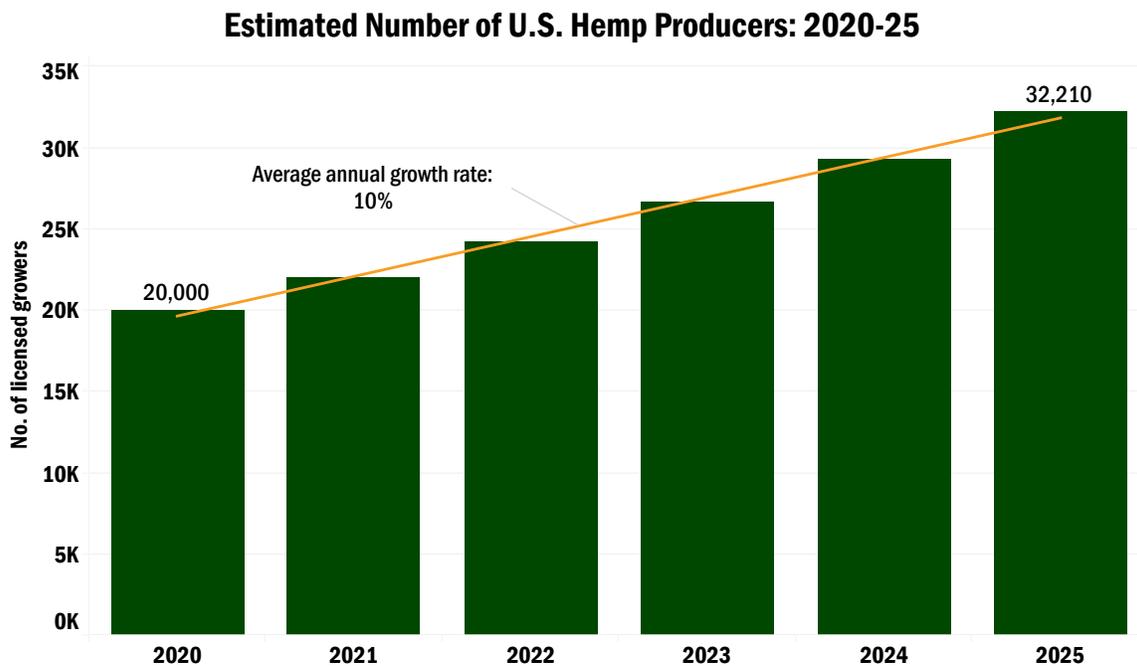
Hemp producers’ share of retail sales, including imports from foreign producers, is expected to grow to \$788 million in 2021, an increase of more than \$300 million over 2020. In 2022, the producers’ share of retail sales is expected to be nearly \$1.3 billion.

For U.S. hemp producers, total sales are estimated to be \$392 million in 2020 and \$670 million in 2021. A larger increase is expected in 2022, when total producer sales are projected to top \$1 billion.

Producer sales estimates are in the aggregate because, as the USDA points out, the size of those businesses varies greatly, so attempting to project sales by individual producer “would likely result in false conclusions and misleading information.”

Harvested hemp might also take years to enter the retail market after it passes through the supply chain, the USDA notes. However, the total producer sales estimates in this chart represent producer sales for the same year as the retail sales.

Chart: Projected Number of Hemp Producers 2020-25



Source: U.S. Department of Agriculture
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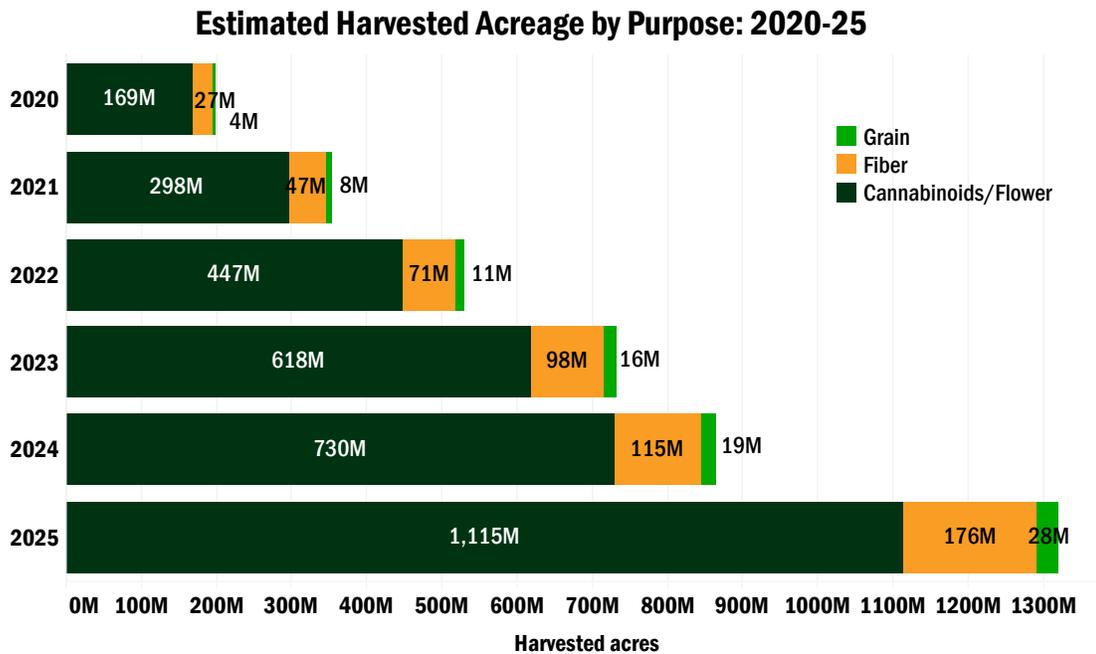
Despite an ongoing glut of hemp biomass and cooling prices for the crop, interest in producing hemp is expected to keep growing through 2025, according to the USDA.

Estimates place the number of licensed hemp producers at roughly 20,000 in 2020, and the USDA anticipates that figure will grow 10% each year through 2025. By then, the U.S. will have 32,210 licensed hemp farmers.

The USDA says more farmers will be attracted to growing hemp because of:

- The novelty of hemp as a commercial agricultural commodity.
- Resolutions of uncertainty surrounding regulations.
- Growth in demand for existing and new hemp products.

Chart: Estimated Harvested Acreage by Purpose: 2020-25



Source: U.S. Department of Agriculture
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The cannabinoid hemp boom isn't going anywhere, according to the USDA. The agency projects that the nation's total harvest of hemp flower will jump nearly seven times from 2020 through 2025, from about 169 million pounds to more than 1.1 billion pounds.

As part of this projection, the U.S. flower harvest is expected to be:

- 297.8 million pounds in 2021.
- 447.5 million pounds in 2022.
- 618.1 million pounds in 2023.
- 720 million pounds in 2024.
- 1.1 billion pounds in 2025.

The USDA anticipates similar growth in hemp grain and fiber harvests between 2020 and 2025, though these products are expected to remain a fraction of the size of the flower harvests.

The USDA projects:

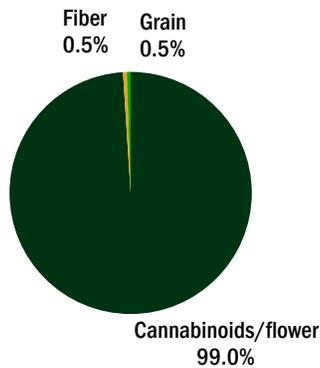
- Hemp-fiber production to go from 26.7 million pounds in 2020 to 176.3 million pounds in 2025, an increase of 561%.
- Hemp-grain production to increase from 4.3 million pounds in 2020 to 28.6 million pounds in 2025, growth of 567%.

In making its projections, the USDA assumed that yields per acre stay about the same for all three products between now and 2025. The agency also assumes consistency in the portion of planted acreage harvested each year.

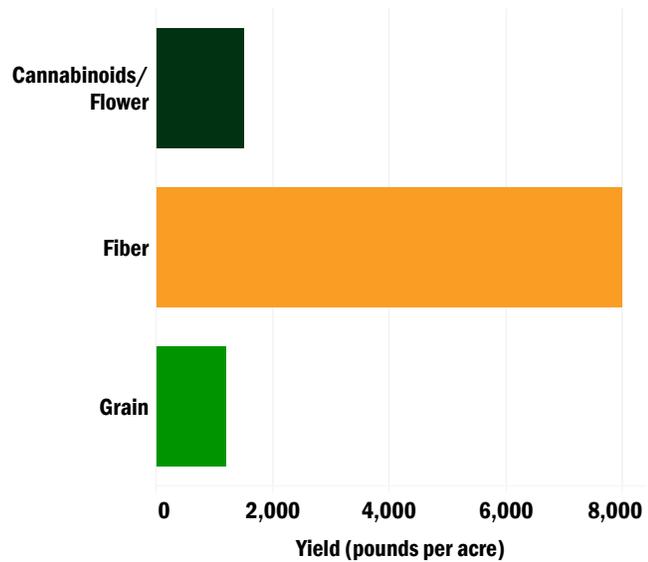
Chart: Hemp Production by Intended Use

Hemp Production by Intended Use

Intended Uses for Harvested Hemp



Estimated Hemp Yield per Acre by Intended Use



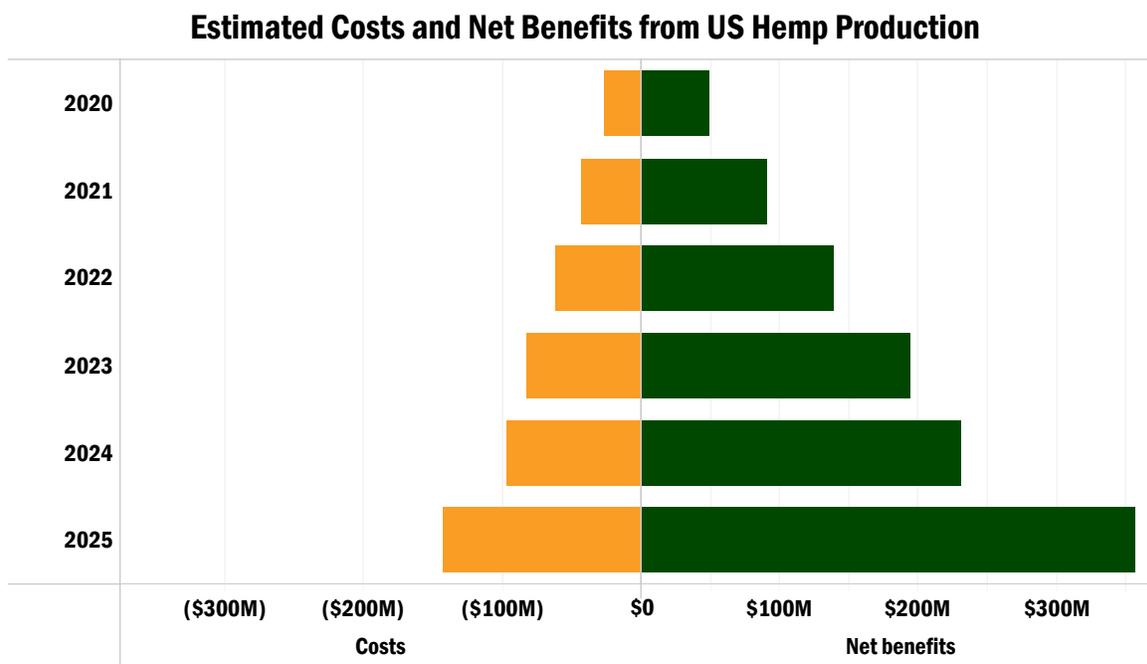
Source: U.S. Department of Agriculture
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How much does an acre of hemp yield? Turns out, more than the USDA initially believed, at least when it comes to flower varieties. In its updated figures for the final rule, the agency said flower varieties yield approximately 1,500 pounds per acre—more than the 1,000-1,200 pounds per acre estimated in 2019.

The USDA also updated its yield estimates for fiber and grain varieties. Fiber varieties are estimated to yield 8,000 pounds per acre, while grain varieties yield an estimated 1,200 pounds per acre.

The USDA said it believes its updated analysis represents “the state of the hemp industry to the greatest extent practicable.”

Chart: Estimated Costs and Net Benefits from US Hemp Production



Source: U.S. Department of Agriculture
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When a federal agency starts crunching the numbers on a new law, it provides analysis of the law’s possible overall costs and benefits.

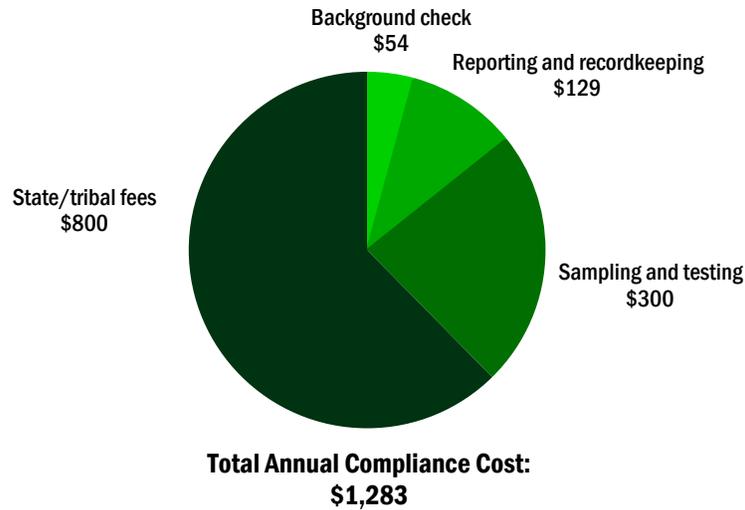
This chart summarizes the USDA’s predictions on how its rules for a legal hemp industry will benefit the nation.

The USDA predicts the net benefits of its hemp rules to range from \$49 million in 2020 to \$357 million in 2025.

The predictions are made by taking estimated hemp-producer sales and subtracting the aggregate fees those farmers will pay each year. The USDA also builds in an “opportunity cost” based on how many hemp crops will replace how much corn would have been grown instead. The USDA concedes this assumption is imperfect, but it reflects the fact that most of the land devoted to hemp in coming years likely would not sit empty if hemp farming were not allowed.

Chart: Estimated Annual Compliance Costs for Hemp Growers

Estimated Annual Compliance Costs for Hemp Farmers



Source: U.S. Department of Agriculture
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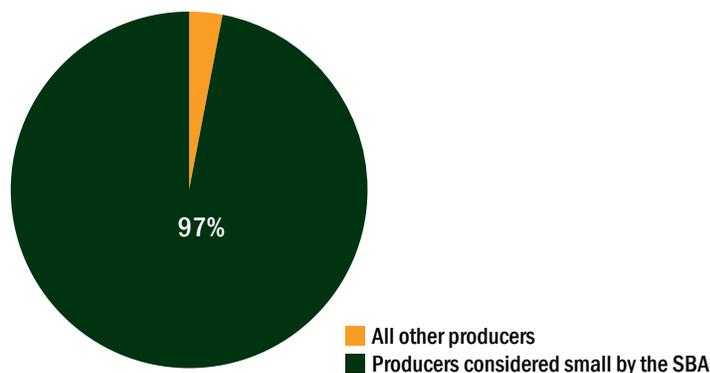
On average, hemp growers can expect to pay roughly \$300 per lot to comply with testing and sampling requirements under the USDA’s final rules. This does not include any mileage compensation. In addition, cultivators will pay \$800 on average for licenses and other fees under state and tribal programs.

Throw in recordkeeping and background checks, and a grower can expect to pay nearly \$1,300 in all compliance-related costs for one lot.

The federal agency noted, however, that performance-based sampling could reduce the overall cost hemp growers can expect to pay. Performance-based testing was not an option under the interim rule.

Chart: Hemp Producers as Small Agricultural Businesses**Hemp Producers Meeting Small Business Administration
Definition of 'Small Agricultural Business'**

SBA definition: Annual receipts of less than \$1 million



Source: U.S. Department of Agriculture
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The Small Business Administration (SBA) defines small agriculture producers as those having annual receipts not exceeding \$1 million. By that measure, the USDA estimates that 97% of hemp growers qualify for SBA benefits.

SBA eligibility triggers enhanced opportunities to borrow money at reasonable rates and access to free business counseling from the government, including help:

- Managing cash flow.
- Budgeting to meet payroll.
- Establishing credit history.
- Applying for tax incentives.

Small businesses also have greater opportunities to sell to the federal government. While it's far from clear how much hemp the U.S. government could possibly buy, government agencies have historically been large purchasers of industrial products made from the plant and might become large customers once again.

To arrive at its 97% estimate, the USDA used data on acreage by intended use from the Kentucky Department of Agriculture and the Montana Department of Agriculture, saying both states "make up a large amount of domestic acreage and represent diversity in hemp planted by intended use." The federal agency then calculated a price per acre for each intended use and found that, of the 922 unique producers in Kentucky and Montana, 97% reported acreage that is insufficient to reach \$1 million.

Lack of consistent and complete reporting on hemp acreage and use across the country led to a need for the USDA to develop a sampling estimate to make this determination.

THC SAMPLING AND TESTING PROTOCOLS

The USDA's updated guidelines for sampling and testing protocols give states and tribal governments greater flexibility, including a longer window of time to collect samples and allowing for performance-based testing.

Growers have up to 30 days before harvest to collect crop samples, instead of the 15 days initially required by the USDA. The government agency said 30 days "is the most balanced approach," recognizing that 15 days could present logistical challenges for growers. The USDA also noted that "THC concentration in hemp generally increases the longer the plant is in the ground."

Starting Dec. 31, 2022, testing must be conducted at a DEA-registered lab. Until then, crop samples must be submitted to a "qualified testing laboratory" for THC concentration.

According to **USDA guidelines**: "The cut should be obtained from the flowering tops of plants when flowering tops are present, and shall be approximately five to eight inches in length from the 'main stem' (that includes the leaves and flowers), 'terminal bud' (that occurs at the end of a stem), or 'central cola' (cut stem that develops into a bud) of the flowering top of the plant."

Perhaps the most substantial change to the USDA's interim rule is the addition of performance-based testing, which takes into consideration whether a particular cultivar has ever tested hot. States and tribes can develop guidelines for performance-based sampling, as long as the protocols ensure, with 95% confidence, that the crops will test under the 0.3% THC limit.

The USDA said it was persuaded to make this change in part because state officials made "compelling" arguments noting "that there are different risk factors for hemp used for fiber and grain versus hemp used for cannabinoids."

Samples are collected by "lot," which could include a field, greenhouse or indoor structure designated by the producer and reported to and identified by the USDA's Farm Service Agency. For sampling purposes, the lot must be a contiguous area that contains the same variety or strain of cannabis. A lot also refers to a batch of contiguous, homogenous product being sold to a single buyer.

Cuttings from plants must be taken by a trained sampling agent, not a hemp producer. The agent must be accompanied by the licensed producer, and the producer is responsible for the sampling and testing costs, which the USDA estimates at roughly \$565 per lot, including mileage compensation.

The size of the growing area is used to determine the number of plants to select for sampling. For less than 1 acre, including greenhouses, the agent will select a minimum of one plant, then take a cutting from that plant as a sample. For lots of 2-10 acres, including greenhouses, agents will select a minimum of one plant per acre, taking cuttings from each plant and combining the cuttings to form a composite sample. Samples from different lots must be kept separate and not be commingled.

For lots larger than 10 acres, the USDA's separate sampling guidelines suggest a formula for determining the number of samples taken based on lot size. First, the agent must estimate the number of plants to be sampled, then the agent will adjust the estimate of plants by the acreage.

NEW DISPOSAL PROTOCOLS

One of the big changes in the national hemp rules concerns disposal and destruction of hot hemp, plants that test higher than 0.3% THC content.

In its interim rules, the USDA required legal hemp farmers to treat any hot plants as illegal drugs. That meant farmers had to enlist law enforcement officers (or federal agents licensed to destroy Schedule 1 substances) to exterminate those plants at an off-farm location.

In traditional agriculture, unwanted plants are simply plowed under or thrown away. Plants that contain dangerous pathogens are commonly burned in the field to prevent the spread of disease.

In response to numerous complaints from farmers about the burden this rule created, the USDA's final rules allow states, territories and tribes to permit "common on-farm practices for the disposal of noncompliant plants."

Those practices could include:

- Plowing, tilling or disking hot hemp into the soil.
- Mulching, composting, chopping or bush-mowing plant material into green manure.
- Burning.
- Burying hot hemp by covering it with soil.

The USDA concluded that the change would "minimize, to the extent possible, the resource impact" to local regulators.

"We are confident that any disposal options make the product unusable and therefore is not at risk for entering any streams of commerce," federal regulators said.

States still must keep records of how their farmers dispose of the hot hemp and share the information with federal authorities within 30 days.

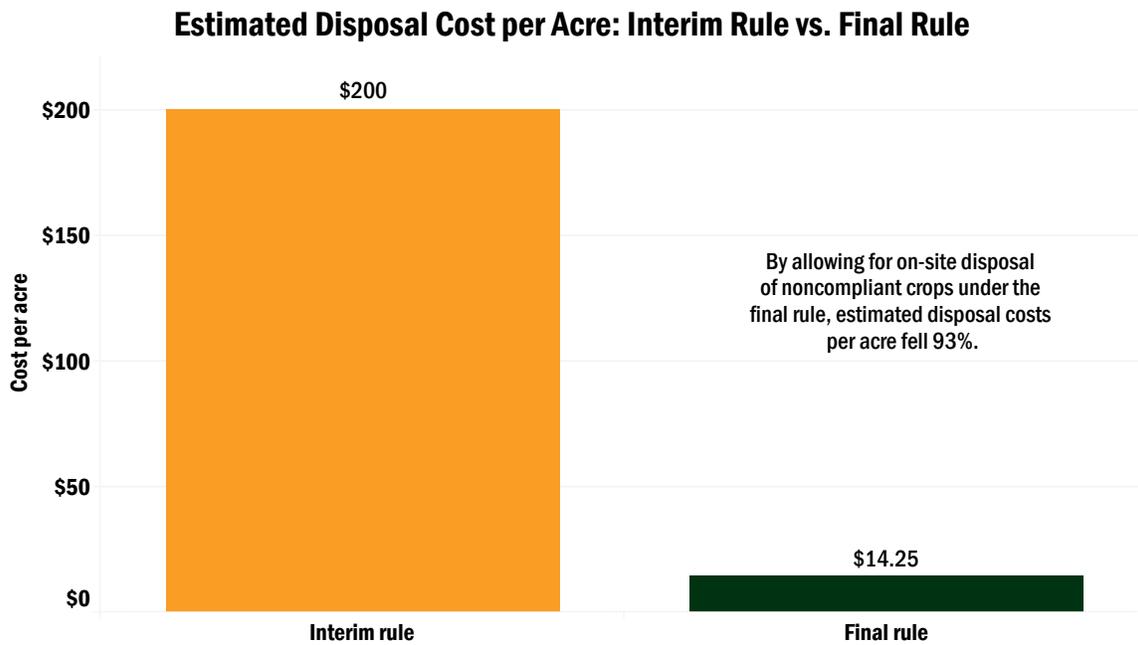
The new disposal protocols don't apply to hemp material destroyed by a farmer because of:

- Poor plant health.
- Pests.
- Disease.
- Weather events.
- Removal of male or hermaphrodite plants as part of a cross-pollination-prevention plan.

In these cases, farmers remain free to use any disposal methods they prefer.

The new disposal protocols also do not apply to growers directly licensed by the USDA, rather than by a state, tribe or territory. USDA-licensed farmers must follow the complicated drug protocols of having law enforcement or DEA-registered agents destroy hot hemp off-site.

Chart: New Estimates for Disposal Cost per Acre

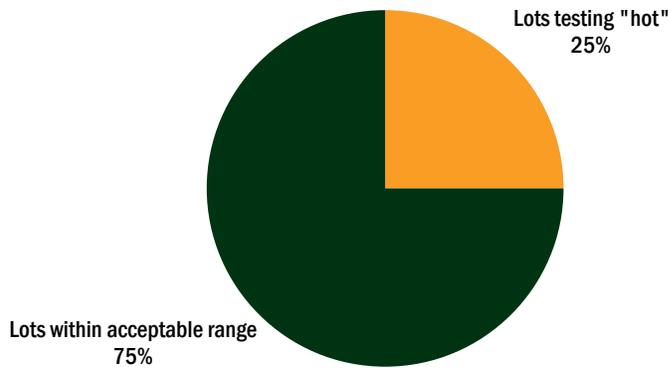


Source: U.S. Department of Agriculture
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The USDA estimates the savings from its new disposal protocols for destroying hot hemp will drop from \$200 per acre to \$14.25 per acre when farmers are allowed to use common disposal methods instead of sending the plants off-site for destruction by registered agents. That’s a decrease of 93%.

Chart: Hemp Lots Testing Hot by Use

Estimated Annual Proportion of Hemp Lots Testing 'Hot'



Source: U.S. Department of Agriculture
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The USDA projects 25% of total hemp acres will violate THC limits and need to be mitigated or destroyed in coming years. While the agency acknowledges throughout its final rules that flower varieties are more likely to exceed THC limits, it projects that all varieties of hemp will test hot at the same rate for its estimates.

Below are the USDA's estimates for how much hemp of each variety will exceed federal THC limits:

Year	Flower	Grain	Fiber
2021	13,772 acres	10,828 acres	775 acres
2022	15,212 acres	11,961 acres	856 acres
2023	16,139 acres	12,689 acres	908 acres
2024	16,544 acres	13,008 acres	931 acres
2025	17,377 acres	13,633 acres	977 acres

CROP INSURANCE, CAPITAL LOANS AND CONSERVATION PROGRAMS

Licensed hemp farmers have the same access to federal loans, crop insurance, disaster assistance and conservation programs as farmers of other commodities such as corn or soybeans.

Those programs are administered by three offices within the USDA:

- Farm Service Agency (FSA).
- Natural Resources Conservation Service (NRCS).
- Risk Management Agency (RMA).

INSURANCE SPECIFICS

Hemp's relatively new status as a legal commodity means there isn't a lot of historical data about yields—a big obstacle when it comes to establishing crop-insurance rates. Insurers need years of good data to determine the value of a crop being covered.

But farmers are eligible to buy federal crop insurance through the RMA's Whole Farm Revenue Protection (WFRP) program.

The WFRP provides coverage for agricultural commodities up to a total insured revenue of \$8.5 million. These plans are common for specialty crops, organic commodities and nontraditional crops.

However, USDA crop-insurance programs will not cover hemp that must be destroyed for exceeding the 0.3% THC limit, even if a failure stemmed from environmental factors such as temperature fluctuations.

And hemp will not qualify for replant payments under the policy.

Farmers looking to buy WFRP policies must meet one of three criteria:

- A five-year history of farm income.
- A three-year history of farm income if they are beginning farmers or military veterans.
- A **contract for the purchase** of their insured industrial hemp crop.

Hemp producers who cannot access crop insurance might be able to purchase the FSA's Noninsured Crop Disaster Assistance, which will offer insurance coverage in the event of adverse weather conditions.

ACCESS TO CAPITAL

The FSA offers a wide variety of loans for hemp producers, including:

- Operating loans.
- Ownership loans.
- Beginning farmer loans.
- On-farm storage loans.

APPLYING FOR PROGRAMS

To take advantage of USDA programs, hemp producers must file an acreage report with their local FSA office, which is typically done after spring plantings are complete.

In filing required acreage reports, farmers must:

- Provide their USDA, state or tribal production license or authorization number.
- Identify each field, subfield, lot, greenhouse or structure where hemp is grown.
- Detail the intended use of the reported hemp acreage, whether it's fiber, flower, grain or seed.

CONSERVATION INCENTIVES

The USDA also provides money and technical assistance to help farmers promote natural resources, protect and restore land as well as deliver environmental benefits.

Hemp producers that meet state and federal requirements will be eligible to participate in four NRCS conservation programs:

- Environmental Quality Incentives Program
- Conservation Stewardship
- Regional Conservation Partnership Program
- Agricultural Conservation Easement Program

More details on the USDA programs and reporting crop acreage are [available here](#).

TRANSPORTATION RULES FOR HEMP

The USDA's final rules reiterate the 2018 Farm Bill language regarding interstate commerce and transportation of hemp, which explicitly says such shipments are allowed in the United States.

“No state or Indian tribe may prohibit the transportation or shipment of hemp produced in accordance with the interim final rule and with section 7606 of the 2014 Farm Bill through the state or territory of the Indian tribe, as applicable.”

However, the final rules do not adopt any requirements to facilitate interstate transportation or to protect producers transporting lawfully produced hemp. The USDA appears to consider regulation of hemp transportation to be outside its jurisdiction, because the 2018 Farm Bill does not provide specific authority to the agency to adopt any transportation rules.

The USDA is working on a database to comply with legal requirements that the agency share information about licensed hemp producers with law enforcement in real time, but it's unclear when that will be available. The USDA “strongly encourages” hemp producers and transporters to have the following documents accompany hemp cargo:

- Copies of laboratory testing report(s).
- Hemp grower license, invoice/bill of lading.
- Contact information of buyer and seller.

EXPORTING HEMP

The USDA's final rules state that if there is “sufficient interest” in exporting hemp in the future, the agency will work with the industry and other federal agencies to facilitate the process. Until that point, the agency has taken no position to advance hemp exports.

APPEALS

The USDA laid out two kinds of appeals for the hemp industry:

- Appeals for individuals denied a federal license to grow hemp.
- Appeals for states and tribes whose hemp regulations don't pass USDA approval.

Individuals wanting to appeal a license rejection have 30 business days to file an appeal to the USDA:

- Appeals must be sent in writing to the USDA's Agricultural Marketing Service.
- Appeals must explain why the license rejection is "not justified or is improper."
- Appeals decisions are final unless the rejected applicant requests a "formal adjudicatory proceeding" within 30 business days to review the rejection.

The rules are different for states or tribes appealing a USDA rejection. In those cases:

- States or tribes have the option to let hemp growers use the federal rules if they don't wish to appeal.
- States or tribes that wish to appeal have 30 days to appeal in writing to the USDA's Agricultural Marketing Service.
- If the state or tribe's appeal is rejected, farmers in the jurisdictions have the option to use the federal rules to apply for a hemp license.

The USDA rules do not provide any procedure for hemp producers to appeal failed THC tests.