

NASDA Survey Training

Hemp Production and Disposition Inquiry (HEMP PDI)



**United States Department of Agriculture
National Agricultural Statistics Service**

Workforce Performance and Staff Development Section
January 2023



General Survey Information

- Project Code: **947**
- Questionnaires:
 - Mailed out January 19
 - Web reporting option available
- Release:
 - *National Hemp Report*
 - April 19, 2023



What is Hemp?



- As defined in the 2018 Farm Bill, the term “hemp” means the plant species *Cannabis sativa* L. and any part of that plant, including the seeds thereof and all derivatives, extracts, cannabinoids, isomers, acids, salts, and salts of isomers, whether growing or not, with a delta-9 tetrahydrocannabinol (THC) concentration of not more than 0.3 percent on a dry weight basis.

A Little History of Hemp

- The use of hemp fiber for clothes dates back 10,000 years to ancient Mesopotamia
- Around 150 BC, the world's first paper was made from hemp by the Chinese
- Canvas sails and rope for ships were made of hemp as it is stronger than cotton and resistant to salt water
- Hemp seed oil is a byproduct of production and can be used to make paint and lacquer. DuPont and others using synthetics saw hemp as a threat and in 1937 successfully lobbied for the ban of hemp production across the US
- In 1942, the US lifted the ban on hemp to meet production demands of World War II
- After the war was over, the ban on hemp cultivation was reinstated
- The Controlled Substance Act of 1970 classified cannabis (including hemp) as a Schedule 1 drug preventing scientific research and production

There are
over 20,000
different
uses for
hemp!



Hemp Production

- Can be grown in the open like a field crop, or under protection like a horticulture crop
 - Broken out in this survey between hemp grown in open fields and then hemp grown under protection



Hemp in the Open



- Can be planted mechanically like other row crops, or transplanted from clones or nursery stock like tobacco
- Can be hand harvested, or mechanically harvested
- Post harvest processing differs by utilization
- Price and yield differ by utilization

Hemp Under Protection



- Special floral varieties
- Clones and transplants
- Seed stock
- Price differs by utilization

Screening

- Will screen for hemp planted for any purpose in 2022
 - If “No”, skips to conclusion
- If hemp was grown in 2022, additional screening for:
 - Hemp grown outdoors in open fields
 - If “No”, skips to page 9 to screen for hemp planted under protection

If it Appears to be a Retail Only Operation

- Do not assume the operation is retail only
- Allow the survey questionnaire to either screen them in or screen them out
- It is difficult to characterize 'types' of hemp growers because there is so much variability in their scale, technology, and production systems

Section 1 – Hemp Harvested from Open Fields

- Overall questions about open fields
 - How many acres did you plant? ←
 - How many acres did you harvest? ←
 - What hemp products did you harvest for?
 - The responses to this item route you to the appropriate products/uses within the section
- Subsequent questions are specific to specific hemp products/uses

Both to the nearest tenth of an acre

What was the hemp used for?

Products and/or Uses

4. Which of the following hemp products and/or uses did you harvest from OPEN FIELDS? Mark all that apply.

After answering this question, please complete the pages listed for the applicable hemp crop.
Each section should take between 2-5 minutes to complete.

106 Hemp flower for human consumption, such as: Page 4

- Smokable hemp
- Hemp harvested for CBD, CBG, CBN, and other cannabinoids and/or terpenes extracted and used in products such as oils, lotions, cleansers, bath products, and other nutraceutical or topical products

DO NOT INCLUDE:

- Hemp seed oil products made from hemp grain instead of hemp flower; check the box below for hemp grain and report those products on Page 5
- Hemp flower harvested from **under protection**; report that on Page 9

107 Hemp grain for human consumption, such as: Page 5

- Crushed seed oil (not CBD oil)
- Hemp hearts
- Protein supplements
- Other products for human consumption made from hemp grain or seed

DO NOT INCLUDE hemp oil products with significant cannabinoid content made from hemp flower; check the box for hemp flower and report those products on Page 4

108 Hemp fiber, used for: Page 6

- | | |
|--------------------|------------------|
| • Clothes | • Animal bedding |
| • Pressed plastics | • Paper |
| • Ropes | • Biofuel |

109 Hemp seed to sell to others: Page 7

DO NOT INCLUDE seed harvested from greenhouses, nurseries, or other protection; report that on Page 9

110 Other hemp, specify (111) _____ Page 8

Product-specific Questions

- Then for each products/use we will ask:
 - How many acres of this use did you harvest?
 - Processing questions
 - How did you acquire your seeds/plants?
 - Total pounds of product harvested?
 - What is the amount sold and price that you received?

Hemp for Flower

- Also called floral hemp
- Hemp buds for processing into essential oils like CBD (Cannabidiol) or CBG (Cannabigerol)
 - These oils are broadly called cannabinoids
- Oil is extracted from female flower and leaf material, not seed
- Cannabinoid concentration in the flower stops after pollination
 - For efficient oil production, all plants should be female

Hemp for Flower

- After harvesting, hemp can be immediately delivered to the processor fresh, but is usually dried
 - Can be hung up to dry like tobacco
 - Can be kept in a forage box
 - Can be baled
- Once the hemp is dried, it must be bucked
 - Bucking removes the leaves and flowers from the stems
- The hemp must also be trimmed, removing the leaves from around the buds and flowers
- Once only the dried buds and flowers are left, the essential oil can be extracted.

Hemp for Grain

- Hemp seed hearts for human consumption like granola, crushed for seed oil, or ground into meal
- Hemp seed oil does not contain any cannabinoids
- Can be harvested from male or female plants
- Cannot be fed to livestock
- Typically dried for storage

Hemp for Fiber

- Hemp stalk can be processed into rope or cloth
- Cut and left to dry in the field like hay, but dries much longer
 - This process is called retting, and helps separate the bast from the woody core of the stem
- The same hemp plants can be harvested for fiber and for grain or flower
- If the crop tests higher than 0.3% THC, the crop may be eligible to be remedied, reducing the THC below the legal threshold and allowing it to be sold for fiber

Hemp for Fiber and for Grain or Seed



Can harvest as flower or for seed
and leave the stalks to dry in the field

After drying, the stalks
can be baled for fiber



Hemp for Seed

- Hemp can also be grown for seed, usually under protection
- Essential oil can only be distilled from female plants, so seeds for oil need to be feminized before being planted and tend to have a much higher price

Transplants and Clones

- Transplant – Hemp grown from seed under protection to be transplanted into the field
- Clone – Hemp grown from a cutting of a parent plant with the same genetics as the original plant.

Processing Questions

- Differ for each product/use (different processing steps depending on the product/use)
- Processing questions all consist of “Yes” or “No” answers
- Different steps of processing done by the grower will add value to the product
 - One less step that needs to be done before sale to the end user
- Hemp flower has the most processing steps listed

Example of Processing Questions

Hemp Flower for Human Consumption

Note for Questions 2-5: Answer "yes" if you did so yourself, or if someone did so on your behalf.

2. For your 2022 hemp flower crop, did you dry your hemp flower crop prior to sale? This includes drying in the field, hang drying, machine drying, or any other type of drying to remove moisture from the plant. 114 ₁ Yes ₃ No
3. For your 2022 hemp flower crop, did you use a machine to remove your hemp flower from the stem prior to sale? This may be called "bucking," "de-budding," or "de-stemming." 115 ₁ Yes ₃ No
4. For your 2022 hemp flower crop, did you, or will you, hand trim your hemp flower prior to sale? 116 ₁ Yes ₃ No
5. For your 2022 hemp flower crop, did you, or will you, extract the cannabinoids and/or terpenes from your hemp prior to sale? 117 ₁ Yes ₃ No

Acquisition of Plants/Seeds

- Measuring the same concept as production contracts on other commodities
- Asking whether the seed was provided by someone else to grow, or they bought the seeds themselves
- Given vs. owned will impact the price (growers who bought or produced the seeds themselves are likely to report higher sale prices)

Price and Amount Sold

- Total amount sold is broken out into 3 different groups:
 - How much have you sold, and what price did you receive?
 - How much do you expect to sell, and what price do you expect to receive?
 - How much did you harvest that you do not expect to sell?
- Questions developed in response to cognitive interviews; much uncertainty about ability to sell hemp

Section 2 – Hemp Under Protection

- Many of the same questions as previous section
- Main differences are:
 - Area planted/harvested reported in square feet
 - Fewer/different products and/or uses to chose from
 - Fiber and Grain are only asked in Section 1 (open fields)
 - Clones/transplants are only asked in Section 2 (under protection)
 - For Clones/Transplants we ask for number of plants harvested instead of pounds harvested

Section 2 – Hemp Under Protection

Section 2 - Hemp Under Protection

1. In 2022, did you plant or seed hemp under protection, with the intent to harvest the hemp from **UNDER PROTECTION**?
INCLUDE anything grown in:

- Greenhouses
- Hoop houses
- Any other type of protection
- Low or high tunnels
- Indoors with climate and/or light control

DO NOT INCLUDE any clones, transplants, seeds, or seedlings grown under protection that you then moved outdoors to continue growing until harvest; this should be reported on Page 3.

180 Yes - Continue

No - Skip to page 15

2. In 2022, how many square feet were **seeded or planted** under protection, including square feet that were abandoned?
Note: If you planted or seeded multiple times under the same space, count the square footage only once.

181

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square feet

3. In 2022, how many square feet were **harvested from** under protection?
Note: If you completed multiple harvests under the same space, count the square footage only once.

182

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square feet

Area grown under protection should be reported in square feet

Section 2 – Hemp Under Protection

Clones/Transplants reporting unit is “plants”

4. In 2022, how many TOTAL hemp clones and/or transplants did you produce under protection?

207	Plants
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INCLUDE clones or transplants that were sold to a buyer who used them to grow their own hemp.
 DO NOT INCLUDE clones or transplants that YOU then planted and harvested for other purposes; that hemp should be reported under the category that the hemp was ultimately harvested for.

5. The questions below are about hemp clones and/or transplants produced under protection in 2022.

	Plants	Average Price per Plant (Dollars and cents)	OR	Total Dollars
5a. Of the clones/transplants produced in 2022, how many plants have you sold as of today, and what is the price you received?	208	209 \$ _ _ _		210 \$
5b. Of the clones/transplants produced in 2022, how many plants do you expect to sell within the next year, and what is the price you reasonably expect to receive?	211	212 \$ _ _ _		213 \$
5c. Of the clones/transplants produced in 2022, how many plants have you harvested that you expect will remain unsold for the next year or longer?	214			



Section 3: Operator Characteristics

Typical demographic questions to help determine:

- Who is growing hemp?
- How can we focus research and programs to best benefit/further this industry?

Please answer the following for the person who makes decisions for this operation:

1. Sex:

- 926 ₁ Male
₂ Female

2. Year of Birth:

927 _____

3. Is the operator of Hispanic, Latino, or Spanish origin?

- 1219 ₁ Yes
₂ No

4. Race, select all that apply:

- 913 White
914 Black or African American
915 American Indian or Alaska Native, specify tribe _____
916 Asian
917 Native Hawaiian or Other Pacific Islander

5. In what year did the operator begin to operate any farm or ranch operation?

907 _____

6. At which occupation did the operator spend the majority (50 percent or more) of his/her time in 2021?

- 974 ₁ Farm or ranch work
₂ Work other than farming or ranching

7. Is the operator retired from farming or ranching?

- 921 ₁ Yes
₂ No

Things to remember

- Referring to 2022 crop year production
- Hemp acreage/square footage should be reported for each product/use it was harvested for (example: flower and fiber both reported for same acreage)
- Looking for sales to date, expected sales within next year, and amount expected to remain unsold



More things to remember

- Notes are VERY important
 - Statisticians *depend* on your notes as they review the data, set their estimates and communicate with HQ
 - Weather, diseases, markets, labor, THC testing, etc

Conclusion

- Practice, get familiar with the survey/questionnaire
- Please contact your supervisor or the Regional Field Office with any questions

