

This survey will take me 30-45 minutes to complete and has about 100 multiple choice and short answer questions. Now that I have started the survey, I must complete it to the end. If an emergency occurs while I am taking the survey and I cannot complete the survey, I understand that I may have to use a paper copy of the survey. In order to complete this survey accurately, make sure you have access to all production, crop sales, and labor information for your industrial hemp crop before you start. *

Yes

This survey represents the reporting requirements for the grower license. I understand that I must complete this survey completely and accurately to stay in compliance with the program. Failure to complete my survey, could cause me to lose my license or be ineligible for licensing in the future. *

Yes

Please enter your license number. *

On your application, you were asked to check at least one research purpose. Which research purpose/s did you check on your application? *

- (1) Studying and investigating marketplace opportunities for hemp products to increase the job base in the State by means of employment related to the production of industrial hemp.
- (2) Studying and investigating methods of industrial hemp cultivation that are best suited to soil conservation and restoration.
- (3) Overseeing and analyzing the growth of industrial hemp by licensed growers for agronomy research and analysis of required soils, growing conditions, and harvest methods relating to the production of various varieties of industrial hemp that may be suitable for various commercial hemp products.
- (4) Conducting seed research on various types of industrial hemp that are best suited to be grown in North Carolina, including seed availability, creation of North Carolina hybrid types, and in-the-ground variety trials and seed production
- (5) Studying the economic feasibility of developing an industrial hemp market in various types of industrial hemp that can be grown in the State, including by commercial marketing and sale of industrial hemp.
- (6) Reporting on the estimated value-added benefits, including environmental benefits, to North Carolina businesses of an industrial hemp market of North Carolina-grown industrial hemp varieties.
- (7) Studying the agronomy research being conducted worldwide relating to industrial hemp varieties, production, and use.
- (8) Researching and promoting on the world market industrial hemp and hemp seed that can be grown in the State.
- (9) Promoting research into the development of industrial hemp and commercial markets for North Carolina industrial hemp and hemp products.
- (10) Studying the feasibility of attracting federal or private funding for the North Carolina industrial hemp research program.
- (11) Studying the use of industrial hemp in new energy technologies, including electricity generation, biofuels, or other forms of energy resources; the growth of industrial hemp on reclaimed mine sites; the use of hemp seed oil in the production of fuels; and the production costs, environmental issues, and costs and benefits involved with the use of industrial hemp for energy.

Did you apply for a license using the electronic version or the paper version? *

Electronic/online application

Paper application

How can we improve the application or application process? *

Which county or counties did you grow in during 2019? *

Alamance	Alexander
Alleghany	Anson
Ashe	Avery
Beaufort	Bertie
Bladen	Brunswick
Buncombe	Burke
Cabarrus	Caldwell
Camden	Carteret
Caswell	Catawba
Chatham	Cherokee
Chowan	Clay
Cleveland	Columbus
Craven	Cumberland
Currituck	Dare
Davidson	Davie
Duplin	Durham
Edgecombe	Forsyth
Franklin	Gaston
Gates	Graham
Granville	Greene
Guilford	Halifax
Harnett	Haywood
Henderson	Hertford
Hoke	Hyde
Iredell	Jackson
Johnston	Jones
Lee	Lenoir
Lincoln	McDowell
Macon	Madison
Martin	Mecklenburg
Mitchell	Montgomery
Moore	Nash
New Hanover	Northampton
Onslow	Orange
Pamlico	Pasquotank
Pender	Perquimans
Person	Pitt
Polk	Randolph
Richmond	Robeson
Rockingham	Rowan
Rutherford	Sampson
Scotland	Stanly

Tyrrell
Vance
Warren
Watauga
Wilkes
Yadkin

Union
Wake
Washington
Wayne
Wilson
Yancey

Which agency did you primarily work with in 2017? (Choose one.) *

NC Cooperative Extension Services/County Agricultural Agents
North Carolina State University (NCSU)
North Carolina Agricultural and Technical State University (NC A&T)
The Department of Agriculture (NCDA&CS)

List the name of an extension agent, researcher, or employee who assisted you in 2017. (If you don't know, write N/A.) *

Where did your seeds, clones, transplants or propagules come from? (Check all that apply.) *

US- North Carolina	US- Kentucky
US- Colorado	US- Other
Canada	Italy
Netherlands	France
Finland	Hungary
Poland	Czech Republic
My own crop from last year	China

How many different varieties or strains were you able to import into North Carolina in 2018? *

Enter a whole number

Did you use seed certified by seed certification agency? (Also called "blue tag" seed.) *

Yes, certified by AOSCA
Yes, certified by OECD
Yes, certified by a different state or country agency
Some of my seed was "blue tag" and some was only verified for THC content.
No, it was only certified for THC content.
No, I grew from clones or transplants, not from seed.
I don't know

What is the company name [REDACTED] and [REDACTED] location of the seed supplier/breeder or clone supplier/breeder who supplied you with industrial hemp seed, clones, or propagules in 2018? *

List additional varieties here.

For which end-market purpose/s did you grow industrial hemp in 2018? (Check all that apply.) *

- Fiber
- Grain for hemp hearts
- Grain for SEED oil
- Floral material (extracts, cannabinoids, CBD, terpenoids, etc.)
- Replication of seeds (for sale)
- Replication of clones (for sale)

If you moved your seed, clones or propagules from another US state, did you encounter any problems? *

- Yes, shipping issues
- Yes, supply problems
- Yes, business transaction problems
- Yes, confiscated in another state
- Yes, DEA intervention
- Yes, OTHER
- No
- Did NOT move from another US state.

If you grew in the field in 2018, how many acres did you plant with industrial hemp?

If you grew in the greenhouse in 2018, how many square feet did you plant with industrial hemp?

Approximately which week(s) did you plant your industrial hemp in 2018? *

1st week of April
2nd week of April
3rd week of April
4th week of April
1st week of May
2nd week of May
3rd week of May
4th week of May
1st week of June
2nd week of June
3rd week of June

4th week of June
1st week of July
2nd week of July
3rd week of July
4th week of July
August
September
October
November
December

What date(s) did you plant your industrial hemp crop? *

Based on your experience when is the best time to plant industrial hemp outdoors? *

If you planted from seed, at what depth did you plant? *

Describe the space(s) used to grow your industrial hemp. *

Cultivated Field (not bedded)
Plasticulture
No-till field
Open-tobacco beds (no plastic)
Other outdoor space

Traditional Greenhouse
Modified Shipping Container
Hoophouse
Other indoor space

What nitrogen fertilizer rate did you apply? *

Use pounds of nitrogen per acre if possible. If you enter in some other unit, please include the units along with the rate.

If you used fertilizer, when did you apply it? *

Before planting	1-2 weeks after planting
During flowering	3-4 weeks after planting
Right before flowering	5-6 weeks after planting
Did not apply	7-8 weeks after planting

If you used other fertilizers besides nitrogen, please list them here along with the rates and timings you used, if known. *

If you grew outdoors, did you use any of the following: *

- Tractor
- Combine
- Planter/seeder
- Transplanter
- Mechanical harvester
- Irrigation systems
- Farm equipment specialized for hemp
- Grain Drill
- Other farm equipment
- None
- Grew indoors

If you grew indoors, what type of lighting did you use? *

- | | |
|------------------------|---------------------|
| Natural lighting (sun) | Artificial lighting |
| Both | Not Applicable |

If you grew for floral parts/CBD, did you use plastic for your beds? *

- Yes, white plastic
- Yes, black plastic
- Yes, other plastic
- No, but I used raised beds
- No. I grew indoors or using another method
- Did not grow for floral parts/CBD

If you grew for floral parts/CBD, did you start your crop in the greenhouse? *

- Yes
- No
- Did not grow for floral parts/CBD

If you grew for floral parts/CBD, did you have root-binding issues? *

- Yes
- No
- Unsure
- Did not grow for floral parts/CBD

If you grew for floral parts/CBD, did you prune or pinch plants to encourage more branching? *

- Yes
- No
- Did not grow for floral parts/CBD

If you grew for floral parts/CBD and you pruned/pinched your plants, what were your results? *

- My plants produced more flowers.
- I did not pinch or prune my plants.
- My plants produced the same amount of flowers as un-pinched/un-pruned plants
- My plants produced less flowers.
- My plants produced more cannabinoids (CBD).
- My plants produced the same amount of cannabinoids (CBD).
- My plants produced less cannabinoids (CBD).
- My results were unclear or mixed.
- Did not grow for floral parts/CBD.

If you grew for floral parts/CBD, how did you dry your crop? *

Modern tobacco barn
Burley tobacco barn
Empty poultry house
Peanut drier
Other industrial dryer
Other indoor drying location
Sent floral materials to processor not dried
I contracted the drying with a 3rd party
Did not grow for floral parts/CBD

If you grew for floral parts/CBD, and a processor would NOT buy some portion of your crop, what reason did they give for not buying your crop? *

I grew for research only and did not sell any portion of my crop.
Mold contamination
Mycotoxin contamination
Pesticide residue contamination
Heavy metal contamination
CBD content too low
Did not honor the contract
Already met their quota for the year
I was able to sell all my crop
Did not grow for floral parts/CBD
Other

If you irrigated your industrial hemp, what type of irrigation did you use? *

Pivot	Rill/furrow
Sprinkler (industrial)	Sprinkler or hose (garden)
Micro-irrigation	Drip irrigation
Fogging or misting systems	Traveling Gun on a hose wheel
Graded-border irrigation	I didn't water my industrial hemp (only rain water)

If your crop suffered hurricane damage, what did you experience? *

- Wash-outs
- Crop loss due to flooding
- Crop bent or damaged by winds
- Harvested early and lost money on crop
- Theft while I was evacuated
- Structural damage to greenhouses, barns, etc., used for hemp
- Damage to farm equipment used for hemp
- Did not suffer any hurricane related damage in 2018

Did you have a soil test performed on your field before the industrial hemp was planted? *

- Yes
- No
- Grew in a greenhouse/indoors

Did you get a THC concentration test performed through an independent or private lab? *

- Yes, I sent a sample to a lab in-state
- Yes, I sent a sample to a lab out of state
- Yes, I tested a sample using my own equipment
- My processor obtained the independent testing
- No

Did you get a Cannabinoid (CBD, CBN, Terpinoids, etc.) profile assessment or testing performed through an independent or private lab? *

- Yes, I sent a sample to a lab in-state
- Yes, I sent a sample to a lab out-of-state
- Yes, I tested a sample using my own equipment
- My processor obtained the independent testing
- No

In 2018, did all your fields or greenhouses pass the official THC test administered by the NCDA&CS? *

- Yes
- No
- The NCDA exempted me from THC testing this year.

If you grew in 2017, did all your industrial hemp pass the official THC test administered by the NCDA&CS? *

Yes

No

The NCDA exempted me from THC testing in 2017.

I did not grow hemp in 2017.

If one or more of your crops failed the official THC test, how many weeks after your industrial hemp began to flower was the THC sample taken for official analysis? *

The sample was collected within the week my industrial hemp began to flower

The sample was collected three weeks after my industrial hemp began to flower

Longer than one month after my industrial hemp began to flower

None of my crop failed the THC test in 2018

The sample was collected two weeks after my industrial hemp began to flower

The sample was collected one month after my industrial hemp began to flower

Unsure

Did you test your seed for any of the following before planting? *

Germination

Purity analysis

I did not grow from seed

Tetrazolium (TZ)

Other seed test

No, I did not test my seed.

Did you use the services of the NCDA&CS seed lab? *

Yes

No, I did not need them

No, I did not know those services were available to me

Did you use the services of the NCDA&CS Agronomic Services lab (soil testing, fertility analysis, nematode testing, etc.)? *

Yes

No, I did not need them

No, I did not know those services were available to me

I used them for soil testing

I used them for tissue testing

I used them for water testing

I used them for nematode testing

Did you use the services of the NCSU Plant Disease and Insect Clinic? *

- Yes, for insect samples
- Yes, for disease samples
- No, I did not need them
- No, I did not know those services were available to me

How many acres OR square feet of industrial hemp did you harvest in 2018? *

What equipment did you use to harvest your industrial hemp? *

- Combine
- Cut to be baled for fiber
- Other mechanical method
- Harvested by hand, cutting whole plants
- Harvested by hand, cutting buds only
- Other by hand method
- Did not harvest in 2018

How many employees did you use to complete harvest of industrial hemp in 2018? *

If you grew for fiber, how were your industrial hemp stalks "retted"? *

- The field-retting method
- A mechanical method (i.e. Decorticator)
- Used another method
- Did not ret my crop this year
- I do not know which method because I sold the raw stalks to a processor.
- Did not grow for fiber

Did you experience any pest pressures in your industrial hemp in 2018? *

- | | |
|---------------------|-------------|
| Insects | Deer damage |
| Diseases | Bird Damage |
| Other Animal damage | Weeds |
| None | |

How did you manage weeds in your industrial hemp crop in 2018? *

- I did not have any weeds
- Hand Weeding
- Chemical burndown prior to planting
- Cultivation
- Chemical application during the season (synthetic)
- Chemical application during the season (organic)
- I had weeds but did not manage them

How did you manage insects in your industrial hemp crop in 2018? *

- I did not have any insects
- Hand removal
- Chemical application during the season (synthetic)
- Chemical application during the season (organic)
- I had insects but did not manage them
- I released beneficial insect predators

How did you manage diseases in your industrial hemp crop in 2018? *

- I did not have any diseases
- Hand removal of portions of infected plants
- Hand removal of whole infected plants
- Managing canopy moisture in some way
- Managing soil moisture in some way
- Broadcast chemical application during the season (synthetic)
- Soil drench chemical application during the season (synthetic)
- Broadcast chemical application during the season (organic)
- Soil drench chemical application during the season (organic)
- I had diseases but did not manage the disease

Did you have problems with any of the following: *

- | | |
|------------------|-----------------------------------|
| Seed germination | Wash-outs unrelated to hurricanes |
| Heat stress | Flooding unrelated to hurricanes |
| Drought stress | Nutrient deficiencies |
| None | |

What other crops have you grown in the past three (3) years? *

Wheat

Corn

Peanuts

Tobacco

Cotton

Soybean

Sweet potatoes

Forages for hay

Tomatoes

Blueberries

Other crops

I haven't grown any other crops in the past 3 years

If you selected Other Crop in the previous question, please enter all other crops you have grown in the past three years here.

Did you sell any of the industrial hemp you grew in 2018? *

Yes

No

Not yet, but I plan to

List the company name and location of the processor(s) you sold your industrial hemp materials or crop to in 2018. *

Example: Criticality, Hobgood NC

What was your average ~~average~~ yield ~~of hemp~~ for floral material (CBD, CBN, terpenoids, etc.)? *

What was the ~~average~~ price ~~of hemp~~ per pound you received for selling floral material (for CBD, CBN, terpenoids, etc.)? *

What was your average ~~price~~ yield ~~price~~ per acre for FIBER? *

What was the ~~price~~ price ~~price~~ per pound you received for FIBER? *

What was your average ~~price~~ yield ~~price~~ per acre for seed or grain? *

What was the price per pound you received for seed or grain? *

Do you currently own or are you leasing any of the following equipment for processing industrial hemp? *

- Seed oil press
- Fiber decorticator
- CBD extraction equipment
- Molds for manufacturing hemp-crete or similar products
- Other Textile processing equipment
- Seed cleaner
- Optical seed sorter
- Equipment for manufacturing hemp-based plastics
- None

In 2018, what was your intended end-market for your industrial hemp? *

Unable to sell any of the hemp I grew in 2018.
Animal bedding
Bio-fuel
Bio-plastics
Building materials/Hempcrete
Cannabinoids/Extracts/CBD
Cosmetics/beauty
Compost
Hemp SEED oil
Hemp hearts
Dietary Supplements
DNA Sequencing/Genetics
Fiber clothing, fabric, textiles
Fiber for industrial uses (petroleum, auto industries, etc.)
Fiber- other
Food/Drink additive
Phytoremediation
NONE or Research production only

If you had a contract for your hemp, was it honored? *

Yes, the buyer honored the contract.
No, the buyer did NOT honor the contract.
The contract was partially honored, but I am satisfied with the result.
The contract was partially honored, but I am NOT satisfied with the result.
The terms of the contract are not complete yet, so I do not know if the contract will be honored or not.
I did not have a contract in 2018.

What types of equipment are you considering purchasing or building in 2019 for use in industrial hemp? *

Have you utilized a company, product or service you found on the Hemp Connections Want-Ads page? *

Yes

No

Did not know about the hemp Want Ads page

Are there any questions on this survey that we did ~~strong~~ NOT ~~strong~~ ask, but you feel would be useful for us to ask in the future? *

What was your number one problem producing industrial hemp in 2018? *

Please provide any additional information or thoughts about your experience in 2018 that you feel would be helpful for the Industrial Hemp Commission OR other growers to know. *