

2020 Hemp Grower Survey Results

At the end of the 2020 growing season the Iowa Department of Agriculture and Land Stewardship surveyed Iowa Hemp Licensees. Twenty-five licensees responded, survey results below:

DID YOU PLANT HEMP IN 2020?

- Yes - 25
- No - 0

WHAT KIND OF HEMP DID YOU PLANT IN 2020? AND HOW MUCH?

PLEASE INDICATE IN ACRES, SQ. FT. (IF INDOORS) OR NUMBER OF PLANTS. YOU CAN ANSWER FOR MULTIPLE TYPES, BUT PLEASE INDICATE THE AMOUNT WITH A QUALIFIER. EXAMPLE: 1,000 SQ. FT, OR 100 PLANTS, OR 40 ACRES.

- **Cannabidiol flower - 9**
 - About 2 acres
 - .5 acre, 1,000 plants
 - 1,500 sq feet (2 responses)
 - 600 plants
 - .25 acres and 25 sq feet
 - ~8,500 plants
- **Biomass for extraction - 16**
 - 4 acres/320 plants
 - 5 acres/4,000 plants
 - .5 acres/4,000 plants
 - 8,000 plants outdoor; 130 indoor
 - 1,500 sq feet
 - 600 plants
 - 1 acre (2 responses)
 - 2 acres (2 responses)
 - 3,300 plants
- **Grain - 2**
 - 6 acres
- **Seed - 3**
 - 1,500 sq feet
- **Fiber - 4**
 - 1,500 sq feet

WHAT PLANT/SEED SPACING DID YOU USE IN 2020?

- <24" - 3
- 24 - 30" - 3
- 31 - 36" - 2
- 37 - 42" - 2
- 43 - 48" - 5
- 49 - 54" - 4
- 55 - 60" - 2
- >60" - 2

IN 2020, DID YOU PLANT USING (check all that apply):

- Direct seeding - 11
- Transplants/seed starts - 15
- Clones - 4

DID YOU HARVEST HEMP IN 2020?

- Yes - 21
- No - 3

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IF YOU HARVESTED HEMP IN 2020, WHAT KIND (ENTER AS MANY AS APPLY) AND HOW MUCH, PLEASE INDICATE IN ACRES, SQ.FT, (IF INDOORS) OR NUMBER OF PLANTS. YOU CAN ANSWER FOR MULTIPLE TYPES, BUT PLEASE INDICATE THE AMOUNT. EXAMPLE: 1,000 SQ. FT, OR 100 PLANTS, OR 40 ACRES.

- **Cannabidiol flower – 5**
 - About 2 acres
 - .15 acre
 - ~8,500 plants
 - 1,000 plants
- **Biomass for extraction – 12**
 - ~3 acres/320 plants
 - .86 acres/1,500 plants
 - 15 (units?)
 - 5 acres/4,000 plants
 - 1 acre/1,350 plants
 - 10 acres but mowed about 1 acre down
 - 300 CBG plants
 - 1 acre (1 responses)
 - 2 acres (2 responses)
- **Grain – 2**
 - 6 acres
 - 1 acre
- **Seed – 0**
- **Fiber – 0**

IN 2020, DID YOU FERTILIZER YOUR HEMP CROP AND IF SO, CAN YOU PLEASE LIST YOUR FERTILIZER RATES AND SOURCES OF FERTILIZER? (FEEL FREE TO PROVIDE AS MANY DETAILS AS YOU CAN):

- Yes
- No (3 responses)
- Cattle feces and urine
- 100 lbs nitrogen
- 1. Good soil health; 2. liquid nutrients at various rate depending on the plant stage and growth rate (fish, feathermeal, seaweed extracts, chelated minerals) added in irrigation only when plants needed water; 3. humic/fulvic foliar; and 4. compost tea foliar.
- 28% liquid nitrogen and 10/34/1/liquid kelp, etc.
- Cattle manure, 12 ton per acre
- Cattle manure, ~ 4 ton per acre
- 500 gallons of Bokashi. It's an organic probiotic that helps the soil create its own nutrients when the plant wants it.
- Compost manure
- Organic fertilizer, tea
- Organic fertilizer shipped from Oregon as specified by hemp professional at NW Concentrates. Gypsum, feather meal, Sulphur to lower pH, oceanic hydrolysate with crab and shrimp mixed with Kind Roots soil balance pro microbes.
- Used fish hydrolysate with water
- Npk 30-10-10 of mendocino grow during veg and 3-9-12 of a bio flores liquid nutrients by canna. Different micronutrients during the entire process along with silica. And a very, very heavy 0-50-30 NPK last two weeks. Used molasses throughout as well. Sometimes Epsom salts.
- Only fertilization was I mixed in miracle grow at a 10% recommended rate while seedlings were in trays.

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PLEASE CHOOSE YOUR WEED CONTROL METHODS, CHECK ALL THAT APPLY:

- Mulch, plastic, straw or other - 7
- Mowing - 11
- Cultivation - 7
- Hand weeding - 15
- Cover crop - 5
- Other, please describe - 3
 - Lots and lots and lots of prayer
 - None
 - Indoor

BASED ON WHAT YOU LEARNED THIS YEAR, HOW DO YOU PLAN TO CONTROL WEEDS IN 2021?

- Same (4 responses)
- Plastic mulch, cover crop, mowing
- Mulch
- Mowing
- Plastic and mulch
- Heavy mulch layer, mowing and hand weeding
- Cover crop of white clover
- Cover crop
- Mowing, hand weeding and cover crop
- Mowing and cover crop; and hand weeding; essentially the same but better spacing and planting design to allow mower to do a better job; for less hand weeding.
- This year I used a weed barrier from Home Depot, a thin breathable material, for the rows with crops and in-between the planted rows I used a heavy weed barrier like that in a greenhouse that is non-breathable, moisture resistant. (both kinds in black) I had used the heavier, non-breathable and moisture resistant plastic material last year in Minnesota, but the clear version, and it seemed to hold in too much heat and moisture and practically cooked some of the plants. That's why this year I did the breathable stuff on the planted rows, I learned that I will just be able to use the heavier duty stuff and cut bigger holes where I initially transplant in to be safe the cloth barrier does not work at all. It disintegrates and rips so easily.
- Animal grazing, ducks and geese
- I would like to modify a row cultivator to work with our row spacing, then come back through and hand weed the remaining weeds that are close to the plants.
- Move to greenhouse production, primarily.
- Quit
- Repeat dense planting, hand weeding for the first month until canopied.
- Mark the rows with corn planter so I can use the cultivator when plants are young. Then hand weed.

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DID YOU EXPERIENCE INSECT PESTS THIS YEAR? IF SO, PLEASE LIST WHAT INSECTS WERE NOTED:

- None (7 responses)
- Aphids
- A few corn borers, they didn't create a huge problem, Root aphids during harvest, my guess would be the cold, damp weather brought them out.
- Some, not sure what kind
- Aphids, mites and worms
- White fly, corn borer, Eurasian borer
- Aphids were controlled by releasing ladybugs. Third hatch of the Eurasian hemp borers started to become a problem toward the end, damaging flowers and allowing botrytis an entering point.
- Hemp borer
- Very small spider mite infestation and a very large European corn borer problem. The corn borer problem started at the very beginning of the season in the young transplants and lasted throughout, but hit initially around July 1st and then again in August in the flowering plants, I don't think I ever got rid of all of them 100%. And they lasted throughout the year but hit the strongest those two times.
- Grasshoppers and corn rootworm beetles
- A borer caterpillar was most damaging. Two different species found at different times.
- We experienced flea beetles early on, mid-season had some bean leaf beetles on the plants but not too many. During harvest we had quite a few whiteflies on the bottom side of the fan leaves.
- When I first transplanted there were crickets, grasshoppers, aphids – learned to quickly stay away from the plants.
- Applied AzaMax and others

DID YOU EXPERIENCE AN INSECT PEST INFESTATION LEVEL THAT CAUSED ECONOMIC DAMAGE TO YOUR HEMP CROP?

- Yes – 2
- No – 17
- I don't know – 4

DID YOU EXPERIENCE ANY PLANT DISEASES THIS YEAR? IF SO, PLEASE LIST WHICH DISEASES WERE PRESENT IN YOUR HEMP?

- No – (13 responses)
- I'm not sure – (3 responses)
- Some septoria leaf spot but nothing catastrophic
- Powdery mildew and yellow/brown spot

DID YOU EXPERIENCE PLANT DISEASES THAT CAUSED ECONOMIC DAMAGE TO YOUR HEMP CROP?

- Yes – 1
- No – 20
- I don't know – 2

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DID YOU EXPERIENCE POOR SEED GERMINATION?

- Yes - 10
- No - 13
- I don't know - 1

DID YOU SEND FLORAL SAMPLES TO A PRIVATE LAB TO TRACK THE THC LEVEL IN YOUR CROP?

- Yes - 10
- No - 12

WHAT WAS YOUR BIGGEST CHALLENGE, OR CHALLENGES, IN GROWING A SUCCESSFUL HEMP CROP IN 2020?

- The drought was a major challenge. Finding organic fertilizers and figuring out a fertilization program that was suited to bud development was also very difficult.
- Trying to determine when to have it tested so it would be mature at the time of harvest. It was a big challenge to Trying to get it harvested in the 15 day period after testing - we need a much bigger window.
- Watering
- Remaining state compliant was the biggest stressor. Then weeding.
- The farming and all the countless hours of manual labor were actually quite easy, also enjoyable. It's the inability to sell a crop which was legally grown within the state that I see as a challenge. It's as if this was all done by design to hinder farmers such as myself, coming from the statehouse. Due to the fact there still seems to be a complete lack of education between hemp and its cousin marijuana.
- Keeping animals away from the crop.
- Pollen drift
- Controlling THC levels, and cross pollination from Iowa hemp. (2 responses)
- Drought, water and weeding
- Weed control
- Germination and lack of moisture allowed weed pressure to prosper.
- Regulations and fear/risk
- We had many challenges, everything we did this year was done by hand and our biggest challenge was finding time in between corn and beans. Aside from that we also had challenges with monitoring our THC content within a reasonable timeline. Sending samples out of state requires overnight shipping and then the most expensive testing for a quick turnaround time. Something in the state would help immensely.
- Labor
- Learning
- Getting the crop inspected in time for an ideal harvest. It came too late, and our crop had degraded somewhat.
- Drought and inexperience with direct seeding
- Government rules were late
- Harvest, selling/market
- Seed to start had a 75% fail

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▶ IF YOU INTEND TO GROW IN 2021, WHAT WILL YOU DO DIFFERENTLY?

- Nothing (2 response)
- Develop a fertilization program
- Have it tested periodically by private labs to monitor the THC
- I don't know
- I'm going to grow less acres. I'd rather do a better job on fewer plants, than a hallway job on a lot of plants.
- Hopefully have the ability to sell my crop locally as so many other companies from out of state are already flooding the Iowa market.
- Build some type of fencing around the crop.
- Don't second guess myself.
- Grow only one variety so I do not have to pay \$500 for each testing time. Have a private lab test my plants for THC prior to the state coming to test!
- Cover crop for weed control; larger and more automated and capable irrigation/fertigation system.
- Fewer acres; better spacing; better labor management.
- I have grown both indoor and outdoor, large (13 acres) and small scale (500 plants outdoor, 1,000+ in greenhouse and 450 indoor) and if I was growing on a small scale, like I was this year, never again would I do outdoors in Iowa. There are too many variables. I would have either a greenhouse or do indoor.
- Indoor and outdoor
- Plant earlier and have a cover crop to burn down prior to planting.
- Continue with the methods that worked best for me in 2020. Vertically integrate or put less into the crop and depend on limited market values.
- I plan on having a mechanical means to do every step; then also with testing have samples collected on a regular schedule to monitor the THC content better.
- Bigger team, co-farms, greenhouse partners
- Try new planting machinery, change our genetics, change our planting method, change our weed control program, add a fertilization program, and harvest much earlier with more appropriate machinery.
- ID a buyer, which will also help to determine harvest process.
- Maybe only go with seed starts.

▶ DID YOU SIGN A CONTRACT WITH A PROCESSOR OR BUYER PRIOR TO PLANTING A HEMP CROP IN 2020?

- Yes - 3
- No - 19

▶ DID YOU SIGN A CONTRACT WITH A PROCESSOR OR BUYER AFTER PLANTING BUT BEFORE HARVEST?

- Yes - 2
- No - 20

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DID YOU SIGN A CONTRACT WITH A PROCESSOR OR BUYER AFTER YOUR HEMP HARVEST WAS COMPLETED?

- Yes - 0
- No - 22

WHAT STATE DID YOUR HEMP CROP GO TO FOR PROCESSING?

- Not processed yet, Will go to Oregon or Wisconsin.
- Colorado
- Michigan, I would have preferred to process myself but can't legally do so.
- Nowheresville use
- Wisconsin
- Colorado - vertically integrated so we used the crop ourselves, no contract.
- Haven't yet this year but looking mostly at Minnesota.
- Iowa
- It did not get processed.
- Indiana
- N/A, stayed in Iowa to buck/shuck/trim the raw flower
- N/A
- Looking at Wisconsin.

SO YOU STILL HAVE YOUR HEMP HARVEST ON SITE, WAITING TO SELL?

- Yes - 12
- No - 8

WHAT PRICE WOULD YOU NEED TO BE PAID THIS YEAR AT THE FARM GATE TO CASH FLOW YOUR OPERATION?

- Don't know yet. (3 responses)
- \$10/pound
- \$100
- Close to \$20,000 for 2020, but significantly less per acre going forward.
- N/A
- Still don't know my intended use other than getting it processed into isolate, was waiting for the restrictions on retail sale to be finalized.
- \$800/pound
- \$8/pound
- \$15,000 or \$60,000/acres to cover inputs.
- ~\$30,000
- \$300
- Approximately \$5,000
- \$2,000
- HA HA. 4* current prices

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▶ ARE YOU INTERESTED IN HEMP PRODUCTION FOR CBD?

- Yes - 20
- No - 1
- Maybe - 2

▶ WHAT INFORMATION WOULD BE USEFUL TO YOU FROM A CBD HEMP VARIETY TRIAL? CHECK ALL THAT APPLY.

- Plant seeding rates or spacing - 9
- Plant growth rate (height, diameter measured throughout the growing season) - 9
- Disease information - 12
- Insect information - 12
- Anticipated flowering dates by varieties - 12
- THC/CBD levels throughout the growing season - 13
- THC/CBD levels at harvest - 14
- Anticipated harvest dates - 11
- Bulk weight - 12
- Flower weight - 11
- Other, please Identify - 6
 - Processing hemp
 - Novel cannabinoids
 - Not sure as we do all this now
 - Would like to be able to do my own trials cost effectively without \$1,000 cost per variety to be able to harvest in order to help cover lab testing costs.
 - Effective herbicides
 - Water needs

▶ WOULD YOU BE INTERESTED IN GAINING MORE INFORMATION ON LOCATIONS AND CONTACT INFORMATION ON CBD EXTRACTION COMPANIES/FACILITIES?

- Yes - 16
- No - 3
- Maybe - 4

▶ ARE YOU INTERESTED IN HEMP GRAIN PRODUCTION?

- Yes - 7
- No - 9
- Maybe - 7

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▶ ARE YOU INTERESTED IN HEMP FIBER PRODUCTION?

- Yes - 10
- No - 8
- Maybe - 6

▶ ARE YOU PLANNING TO GROW HEMP IN IOWA IN 2021?

- Yes - 16
- No - 1
- Maybe - 7

▶ QUESTIONS

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After hours law enforcement questions, Robin Pruisner, (515) 231-4481