



ARKANSAS DEPARTMENT OF AGRICULTURE

PLANT INDUSTRIES DIVISION

Arkansas Department of Agriculture Hemp Research Licensing Program

Procedures for Sampling Pre-Harvested and Post-Harvested Hemp

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I. Introduction & Purpose

Federal and state law charge the Arkansas Department of Agriculture (“Department”) with responsibility for managing the Arkansas Department of Agriculture Hemp Research Licensing Program. In 2014, Congress enacted legislation permitting state departments of agriculture to conduct research pilot programs with industrial hemp. Congress specifically limited its authorization of state-level industrial hemp research pilot programs as defined in 7 U.S.C. § 5940 (2014 Farm Bill). The 2018 Farm Bill removes hemp from the list of controlled substances and delegates the regulatory authority to the state departments of agriculture through a USDA-approved state plan.

To that end, the Department conducts a sampling and testing program to confirm compliance with state and federal law. A.C.A. § 2-15-403(5) defines industrial hemp as “all parts and varieties of the plant *Cannabis sativa* L., cultivated or possessed by a licensed grower, whether growing or not, that contain a tetrahydrocannabinol concentration of no more than that adopted by federal law in the Controlled Substances Act, 21 U.S.C. § 32 804 et seq.”

A.C.A. § 2-15-401 et seq. and the Department’s Industrial Hemp Research Program Rules directs the Department to establish a sampling and testing program that will ensure that THC levels in industrial hemp produced by the Department’s license holders do not exceed the 0.3% delta-9-THC threshold set by Congress. The Department intends to inspect and sample 100% of hemp plots to be harvested. All varieties will be tested for compliance with the 0.3% delta-9-THC threshold set by Congress.

II. Definitions

- 1) “**Delta-9-THC**” means delta-9-tetrahydrocannabinol concentration (the primary intoxicating component of cannabis).
- 2) “**Industrial Hemp**” shall be used interchangeably with “Hemp” and have the same meaning. Hemp means *Cannabis sativa* L. and any part of that plant, including the seeds thereof and all derivatives, extracts, cannabinoids, isomers, acids, salts, and salt of isomers, whether growing or not, with a delta-9-tetrahydrocannabinol concentration of not more than 0.3 percent on a dry weight basis, as defined in the Agricultural Improvement Act of 2018, 21 U.S.C. & 801 et seq. as it currently exists or as it may be subsequently amended.
- 3) “**Location ID**” means the unique identifier name established by the applicant or licensee for each unique set of GPS coordinates where industrial hemp will be grown, handled, stored, or processed, which may include a field name or building name.
- 4) “**Plot**” means a contiguous area in a field, greenhouse, or indoor growing structure containing the same variety or strain of hemp throughout the area.



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- 5) **“Post-Harvest Sample”** means a sample taken from the harvested industrial hemp material from a particular plot’s harvest in accordance with the procedures as defined in the policies developed under the program rules; the entire plot’s harvest must be in the same form (intact-plant, flowers, ground materials, etc.), homogenous, and not mixed with non-hemp materials or industrial hemp materials from another plot.
- 6) **“Pre-Harvest Sample”** means a composite, representative portion from plants in an industrial hemp plot collected prior to harvest in accordance with these procedures as defined in the policies developed under the program rules.
- 7) **“Program”** means the Arkansas Industrial Hemp Research Program as established by the Arkansas Industrial Hemp Act, A.C.A. 2-15-401 et seq. and the program rules.

III. Scope

Pre-Harvest and Post-Harvest Samples collected by Department inspectors are acceptable for submission to the Department’s Plant Industries Chemistry Lab for THC quantitation lab analysis. All sampled hemp “plots” (also referred to as “lots”) are hand-delivered to the Department’s Plant Industries Chemistry Lab from an authorized Department inspector. All representative samples for THC quantitation lab analysis for program-compliance become property of the Department and are non-returnable. The Department reserves the right to test all industrial hemp and other cannabis plant crops produced by any License Holder for THC compliance. The Department intends to inspect, sample, and test 100% of all industrial hemp and other cannabis plots to be harvested produced under the program.

IV. Equipment & Supplies

The following supplies are included within all Department inspector “hemp kits”:

- 1) Garden pruners/shears
- 2) Rubbing alcohol disposable wipes
- 3) Paper sample bags
 - a. The standard paper bags for sample collection are heavy duty evidence bags and can withstand up to 12 pounds of plant material.
 - b. If a plot to be sampled cannot fit inside the standard paper bag, a larger paper bag provided by the Plant Industries Chemistry Lab will be utilized, as determined on a case-by-case basis.
- 4) Heavy-duty stapler with extra staples
- 5) Security tape
- 6) Permanent markers and Ink pens
- 7) Harvest Request Inspection Packet
 - a. Licensee Information
 - b. Requested harvest plot(s) information for sampling
 - c. Hemp Individual Sample Form with Chain of Custody
 - d. Aerial map of Location IDs for cultivation
 - e. Location ID verification form
 - f. Planting Report(s) associated with Harvest plot(s) request
- 8) Department issued cell phone or handheld GPS unit to verify GPS coordinates/Location IDs



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- 9) Nitrile disposable gloves
- 10) 5-Gallon Bucket(s) with lid for transport
- 11) Metric rulers with 8 inches/20 centimeters marked for plant cuttings

V. Sampling Procedures

a) Grower Responsibilities

- 1) A completed “Harvest Request Form” shall be submitted to the Department by the grower at least fifteen (15) days in advance of the expected harvest date.
- 2) Receipt of a Harvest Request triggers a site inspection and sample collection by an authorized Department Plant Industries Inspector.
- 3) Department inspectors shall contact the grower to confirm the location of the plot (“Location ID”) and to schedule a time for inspection and sample collection prior to harvest.
- 4) The licensee or designated responsible party shall accompany Department inspector staff throughout the sampling process.
- 5) The inspector shall be provided with complete and unrestricted access to all industrial hemp plants, whether harvested or not, all land, buildings or other structures used for the cultivation, handling and storage of industrial hemp plants or plant parts.
- 6) The grower shall harvest the crop not more than fifteen (15) days following the date of sample collection by the Department, unless specifically authorized in writing by the Department.
- 7) Harvested materials shall not be comingled with other harvest plots without express permission from the Department.
- 8) Harvested material shall not be removed from the Licensed Grower or Processor/Handler’s property, nor comingled, nor extracted, until the Department releases the material based on a satisfactory laboratory analysis from the Department’s Plant Industries Chemistry Lab. The Plant Industries Chemistry Lab is currently the only lab authorized to issue a valid compliance quantitation of hemp materials for the Program.
- 9) The Department shall notify the Licensee of lab test results as soon as reasonably practical, **via email**. The Department shall make every effort to return an analysis within two weeks of sample receipt, however, turnaround times will be affected by Program workload and laboratory sample load. Lab results shall be sent to the Grower’s business email on-file. It is the Grower’s responsibility to make sure this email is monitored, valid and current.

b) Verification of Licensed GPS Coordinates/Location IDs

- 1) The Department inspector shall verify the GPS Coordinates/Location IDs of the growing area(s) as compared with the GPS coordinates/Location IDs submitted by the licensee within an approved application or Site Modification Request Form.
- 2) The Department inspector shall verify that proper field plot signage is posted on all registered Field Location IDs, as prompted by Section 3(F) of the Program Rules.
- 3) The Department inspector shall notify Program Staff of any discrepancies associated with registered Location IDs where hemp is grown, handled, and/or stored.



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- 4) The Department inspector shall estimate average plant height, appearance, approximate density, condition of the plants, and degree of maturity of the flowering material, and document these observations within the Harvest Inspection Packet.
- 5) The inspector shall visually establish the homogeneity of the stand to be harvested in order to establish that the growing area is of like variety. The inspector shall note any oddities or anomalies within the notes section of the Harvest Inspection Packet. The inspector has the right to sample areas of concern separately at no cost to the Grower.

c) Pre-Harvest Sampling Procedure

- 1) No earlier than fifteen (15) days prior to harvest, a Department inspector will collect a representative sample from the plot to be harvested.
- 2) Assemble all necessary forms, Personal Protective Equipment (PPE), supplies and sampling equipment. Make sure sampling equipment is clean, dry, and in good working condition.
- 3) The material selected for Pre-Harvest Sampling will be determined by the Department inspector, not the grower. Cuttings will be collected to make one representative sample of the harvest plot.
- 4) Identify plot of hemp to be sampled and label paper bag with the following information:
 - a) Licensee Name and Hemp Grower License Number
 - b) Sample ID number
 - i. The Sample ID number shall include the licensee's license number, Date (YYYYMMDD), and a two-digit sequential sample number assigned by the Department inspector.
Example: License# H00, Sample Date October 1, 2020, Sample 02
Translates to Sample ID#: H00-20201001-02
 - c) Location ID name
 - d) Variety name
 - e) Representative plot size in acres or square feet
- 5) First identify the plot requested for harvest by the license holder.
- 6) The Department inspector will collect five (5) cuttings at random throughout the harvest plot. The Department inspector reserves the right to determine if more or less cuttings are necessary from the harvest plot. The inspector must ensure a minimum sample size for lab analysis.
- 7) Each plant clipping must be eight (8) inches (or 20 centimeters) long and must be taken from the plant's primary/apical stem, including floral material. Do not remove any stalks, stems, flowers, seeds, or leaves from the clipping. Refer to **Figure 1 (Page 8 of these procedures)**.
- 8) Place the plant clippings collected from the plot into the properly labeled paper bag. This is the representative sample.
- 9) Seal the paper bag shut by folding over the top twice and by using the heavy-duty stapler or security tape.
- 10) Staple a completed "Hemp Individual Sample Form" to the paper bag containing the representative sample.
- 11) A separate representative sample must be taken from each non-contiguous plot of a given variety.
- 12) A separate representative sample must be taken from each variety.
- 13) Representative sample(s) may be placed within provided 5-gallon bucket with locking lid during transport back to the Department.



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- 14) Representative sample(s) shall be delivered to the Department the same day or within one business day. Keep the sample dry and warm to avoid degradation of the plant material. The Department's Plant Industries Chemistry Lab will not accept damaged, torn, or unlabeled paper bags. Representative samples that do not have the "Hemp Individual Sample Form" with Chain of Custody will not be accepted.
- 15) Use single use/disposable equipment or thoroughly cleaned sampling equipment and change disposable gloves between each representative sample collection.

d) Post-Harvest Sampling Procedure

- 1) Assemble all necessary forms, Personal Protective Equipment (PPE), supplies and sampling equipment. Make sure sampling equipment is clean, dry, and in good working condition.
- 2) The plot selected for sampling shall be designated by the Pre-Harvest Sample results. The material selected for Post-Harvest Sampling from this plot will be determined by the Department inspector, not the grower. All Post-Harvest Samples of floral material shall be taken from the designated harvested plot materials in the form (intact-plants, flowers, ground materials, etc.) in which the material will be sent to the processor. A Department inspector must inventory the entire harvest to determine the form in which it exists and follow the protocol as appropriate in parts 5), 6) and 7) below.

If, upon inventory, the Department inspector determines that the entire harvest is not in a homogenous form (intact-plants, flowers, ground materials, etc.), the Department inspector shall notify the Department's Hemp Program Manager. A license holder who refuses to complete post-harvest processing preparations waives the right to a post-harvest test and the pre-harvest test results shall stand, and the plot materials shall be ordered destroyed.

- 3) Identify plot of hemp to be sampled within the storage or drying area and label paper bag with the following information:
 - a) Licensee Name and Hemp Grower License Number
 - b) "Post-harvest Sample"
 - c) Sample ID number
 - d) Storage Location ID name
 - e) Variety name
 - f) Representative Plot size in acres or square feet
- 4) For intact-plant post-harvest samples, go to **part 5**. For chopped or ground hemp post-harvest sample collection, go to **part 6**. For post-harvest hemp material in other forms, go to **part 7**.
- 5) **For Intact-Plant Post-Harvest Samples:**
 - a) Ensure the entire harvest is accounted for and in the same form (i.e., intact-plants).
 - b) If the plant plot is intact, a representative sample would consist of clippings from non-adjacent plants within the storage or drying area. Each clipping consists of the top eight (8) inches of hemp plant, taken from the plant's primary stem, including floral material. Do not remove any stalks, stems, flowers, seeds, or leaves from the clipping. Refer to **Figure 1 (Page 8 of these procedures)**.
 - c) The Department inspector will collect five (5) cuttings at random throughout the post-harvested plot. The Department inspector reserves the right to determine if more or less cuttings are necessary from the post-harvested plot.



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- d) Place the plant clippings collected from the plot into the properly labeled paper bag. This is the representative sample.
- e) Seal the paper bag shut using the heavy-duty stapler or security tape.
- f) Staple a completed “Hemp Individual Sample Form” to the paper bag containing the representative sample.
- g) Representative sample(s) may be placed within provided 5-gallon bucket with locking lid during transport back to the Department.
- h) Representative sample(s) shall be delivered to the Department the same day or within one business day. Keep the sample dry and warm to avoid degradation of the plant material. The Department’s Plant Industries Chemistry Lab will not accept damaged, torn, or unlabeled paper bags. Representative samples that do not have the “Hemp Individual Sample Form” with Chain of Custody will not be accepted.
- i) Use single use/disposable equipment or thoroughly cleaned sampling equipment and change disposable gloves after taking each representative sample collection.

6) For Chopped or Ground Hemp Material:

- a) Ensure the entire harvest is accounted for and in the same form (i.e., all harvested material, whether whole plant or floral material only, must be ground with no intact plants or whole flowers remaining from that harvest).
- b) The Department inspector will take five (5) random draws from the post-harvested plot. A representative sample would consist of five (5) random draws from non-adjacent areas. Each draw should consist of a handful or sterile scoop of biomass (approximately one cup by volume).
 - i. **Note:** Draws should not just be from the top of bulk containers, depths should vary. Utilize Tyvek or similar disposable sleeves if reaching deep into container.
 - ii. **Note:** Take care not to spill or drop portions of the sample. If spillage does occur return all spillage to the container being sampled – do not include spillage into the sample itself.
- c) Place draws into properly labeled paper bag. This is the representative sample.
- d) Seal the paper bag shut using the heavy-duty stapler or security tape.
- e) Staple a completed “Hemp Individual Sample Form” to the paper bag containing the representative sample.
- f) Representative sample(s) may be placed within provided 5-gallon bucket with locking lid during transport back to the Department.
- g) Representative sample(s) shall be delivered to the Department the same day or within one business day. Keep the sample dry and warm to avoid degradation of the plant material. The Department’s Plant Industries Chemistry Lab will not accept damaged, torn, or unlabeled paper bags. Representative samples that do not have the “Hemp Individual Sample Form” with Chain of Custody will not be accepted.
- h) Use single use/disposable equipment or thoroughly cleaned sampling equipment and change disposable gloves after taking each representative sample collection.



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- 7) **For Post-Harvest Hemp Material in other forms (e.g., trimmed floral material, or floral material and stems, etc.):**
- a) Ensure that the entire harvest is accounted for and in the same form (i.e., all harvested material must be uniform).
 - b) The Department inspector will take five (5) random draws from the post-harvested plot. A representative sample would consist of random draws from non-adjacent areas. Each draw should consist of a handful or sterile scoop of biomass (approximately one cup by volume).
 - i. **Note:** Draws should not just be from the top of bulk containers, depths should vary. Utilize Tyvek or similar disposable sleeves if reaching deep into container.
 - ii. **Note:** Take care not to spill or drop portions of the sample. If spillage does occur return all spillage to the container being sampled – do not include spillage into the sample itself.
 - c) Place draws into properly labeled paper bag. This is the representative sample.
 - d) Seal the paper bag shut using the heavy-duty stapler or security tape.
 - e) Staple a completed “Hemp Individual Sample Form” to the paper bag containing the representative sample.
 - f) Representative sample(s) may be placed within provided 5-gallon bucket with locking lid during transport back to the Department.
 - g) Representative sample(s) shall be delivered to the Department the same day or within one business day. Keep the sample dry and warm to avoid degradation of the plant material. The Department’s Plant Industries Chemistry Lab will not accept damaged, torn, or unlabeled paper bags. Representative samples that do not have the “Hemp Individual Sample Form” with Chain of Custody will not be accepted.
 - h) Use single use/disposable equipment or thoroughly cleaned sampling equipment and change disposable gloves after taking each representative sample collection.



FIGURE 1: Illustration showing where cut should be made below flowering material from the plant's main (top) apical stem. Cuttings should be eight (8) inches or 20 centimeters, including the mature plant's inflorescence.

