



ARKANSAS DEPARTMENT OF AGRICULTURE

PLANT INDUSTRIES DIVISION

Sampling, THC Testing, & Disposal Guidelines

Arkansas Hemp Research Licensing Program– 2021 Season (FY22)

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I. Introduction & Purpose

Federal and state law charge the Arkansas Department of Agriculture (“Department”) with responsibility for managing Arkansas’s 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. Arkansas’s Hemp Research Licensing Program will continue to operate under 2014 Farm Bill requirements for the 2021 season.

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*, 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. 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 acceptable hemp THC level threshold set by Congress.

II. Definitions

- 1) “**Acceptable Hemp THC Level**” means the application of the Measurement of Uncertainty to the reported (decarboxylated) delta-9-THC concentration level on a dry weight basis to the 0.30% limit set forth in federal and state law.
- 2) “**Cannabis**” means the plant that, depending on its THC concentration level, is defined as either “hemp” or “marijuana.” Cannabis is a genus of flowering plants in the family Cannabaceae of which *Cannabis sativa* is a species, and *Cannabis indica* and *Cannabis ruderalis* are subspecies thereof. Cannabis includes all parts of the plant, whether growing or not, including its seeds, resin, compounds, salts, derivatives, and extracts; and does not include a “publicly marketable hemp product,” as defined by Program Rules.
- 3) “**CBD**” means cannabidiol.
- 4) “**Decarboxylated**” means the completion of the chemical reaction that converts THC-acid into delta-9-THC, the intoxicating component of cannabis. The decarboxylated value is also calculated using a conversion formula that sums delta-9-THC and eighty-seven and seven tenths (87.7) percent of THC-acid.
- 5) “**delta-9-THC**” means delta-9-tetrahydrocannabinol concentration (the primary intoxicating component of cannabis). For compliance purposes, all delta-9-THC concentrations must be measured post-decarboxylation or by another method which shall include both delta-9-THC and delta-9-THCA (also known as Total THC).
- 6) “**Department**” means the Arkansas Department of Agriculture.



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- 7) “**Disposal**” or “destruction” means an activity that transitions the noncompliant material or product into a non-retrievable or non-ingestible form. Such activities include plowing, tilling, or disking plant material into the soil; mulching, composting, chopping, or bush mowing plant material into green manure; burning plant material; burying plant material into the earth and covering with soil.
- 8) “**Handle**” means to harvest or store hemp plants or hemp plant parts prior to the delivery of such plants or plant parts for further processing. “Handle” also includes the disposal of such plants.
- 9) “**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.
- 10) “**Inspector**” means an employee or other representative of the Department sent to collect samples and perform inspections.
- 11) “**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.
- 12) “**Lot**” means a contiguous area in a field, greenhouse, or indoor growing structure containing the same variety or strain of hemp throughout the area. “Lot” may be used interchangeably with “plot.”
- 13) “**Measurement of Uncertainty**” means the parameter, associated with the result of a measurement that characterizes the dispersion of the values that could reasonably be attributed to the particular quantity subject to the measurement. For all official compliance samples collected and tested by the Department in 2021, the Measurement of Uncertainty shall be +/-0.06%.
- 14) “**Person**” means an individual or business entity.
- 15) “**Post-Harvest Sample**” means a sample taken from the harvested industrial hemp material from a particular lot’s harvest in accordance with these procedures developed under the program rules; the entire lot’s harvest must be in the same form (for example: intact-plant, flowers, ground materials, etc.), homogenous, and not mixed with non-hemp materials or hemp from another lot.
- 16) “**Pre-Harvest Sample**” means a composite, representative portion from plants in a hemp lot collected prior to harvest in accordance with these procedures developed under the program rules.
- 17) “**Program**” means the Arkansas Industrial Hemp Research Pilot Program as established by the Arkansas Industrial Hemp Act, A.C.A. 2-15-401 et seq. and associated program rules.
- 18) “**Prohibited Variety**” means a variety or strain of cannabis excluded from the Department’s Industrial Hemp Research Program.
- 19) “**Remediation**” refers to the process of rendering noncompliant cannabis, compliant. Remediation can occur by removing and destroying flower material, while retaining stalk, stems, leaf material, and seeds. Remediation can also occur by shredding the entire plant into a biomass like material, then re-testing the shredded biomass material for compliance via the Post-Harvest Sampling Procedures detailed within these procedures developed in accordance with program rules.
- 20) “**Variety of Concern**” means any variety of hemp in the program that tests above 0.3% total delta-9-THC in one (1) or more pre-harvest samples from diverse locations and production conditions. A hemp variety designated as a “Variety of Concern” may be subject to restrictions and additional testing.



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III. Scope

Pre-Harvest and Post-Harvest Samples collected by Department inspectors are acceptable for submission to the Department's Laboratory Services Division for delta-9-THC concentration lab analysis. All sampled hemp lots (may also be referred to as "plots") are hand-delivered to the Department's Laboratory Services Division from an authorized Department inspector. All representative compliance samples for delta-9-THC testing become property of the Department and are non-returnable. The Department reserves the right to test all hemp and other cannabis crops produced by any License Holder for THC compliance. The Department intends to inspect, sample, and test 100% of all hemp and other cannabis plots to be harvested produced under the Program. **The Department is the only entity authorized to collect official compliance samples and conduct official compliance testing for all hemp lots produced under the Department's Hemp Research Licensing Program.**

This guidance document is for informational purposes only and does not have the force and effect of law. Nothing in this guidance document should be construed as rulemaking, nor should it be construed as seeking to supersede existing law.

IV. Equipment & Supplies for Department Inspector

The Department inspector shall use the following equipment and supplies, provided to the inspector by the Program:

- 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 lot to be sampled cannot fit inside the standard paper bag, a larger paper bag provided by the Department's 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) Inspection Paperwork
 - a. Licensee and Location Information
 - b. Sampling lot(s) information
 - c. Sample Forms with Chain of Custody
 - d. Location IDs aerial map
 - e. GPS verification form
 - f. Planting Report(s)
 - g. Any other relevant documentation associated with inspection
- 8) Department issued cell phone or handheld GPS unit to verify GPS coordinates/Location IDs
- 9) Nitrile disposable gloves or sterilized scoop
- 10) 5-Gallon Bucket(s) with lid for transport
- 11) Metric rulers with 8 inches/20 centimeters marked for plant cuttings



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V. Harvest Sampling Procedures

a) **Grower Responsibilities prior to Harvesting a Lot**

- 1) No hemp plant shall be harvested from any lot before a Department inspector completes an inspection and sample-collection visit.
- 2) The Grower shall submit a completed **“Harvest Request Form”** via e-mail communication to industrialhemp@agriculture.arkansas.gov at least fifteen (15) days in advance of the expected harvest date. If no harvest will take place from a planted lot, a **“Destruction Request Form”** must be submitted to the Department at least fifteen (15) days in advance of the expected disposal date. Every lot planted by a license holder must have either a **Harvest Request Form** or **Destruction Request Form** submitted to the Department.
- 3) Receipt of a Harvest Request Form triggers a site inspection and sample collection by a Department Inspector.
- 4) Department inspectors shall contact the grower to confirm the harvest lot location and to schedule a specific time on a date that is not later than the grower’s expected harvest date.
- 5) The licensee or the grower’s designated responsible party shall accompany the Department inspector throughout the inspection and sampling process.
- 6) 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, and all locations listed in the Hemp Grower License.
- 7) The grower shall complete the harvest of the crop from a lot not more than fifteen (15) days following the date of the inspection and sample-collection visit, unless specifically authorized in writing by the Department; provided, however, that such authorization shall not exceed an additional 5 days and shall not be granted by the Department without its determination that the cause of delay was inclement weather or another circumstance beyond the licensed grower’s control.
- 8) If a licensed grower fails to complete the harvest of the crop from a lot within fifteen (15) days following the date of sample collection, then the licensed grower shall submit a new **Harvest Request Form** and may be required to pay additional sampling fees established by Program Rules.
- 9) Harvested materials shall not be comingled with other harvest lots without express permission from the Department.
- 10) 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 report indicating acceptable hemp THC levels from the Department’s Laboratory Services Division. The Department’s Laboratory Services Division is currently the only lab authorized to conduct official program THC compliance testing.
- 11) Once samples are received by the Department’s Laboratory Services Division, the Program will issue a “Sampling Invoice” via e-mail communication to the license holder. The number of pre-harvest and post-harvest samples requested by the licensed grower and collected by the Department determines the sampling fees due to the Program.
- 12) The licensed grower shall pay the “Sampling Invoice” within thirty (30) days of the Program issuing a Sampling Invoice. If a licensed grower fails to pay the Sampling Invoice in full within thirty (30) days, the Department may refer the license holder to the Department’s debt collection agency after given notice in-writing.



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13) The Department shall notify the grower of lab test results from the Department's Laboratory Services Division as soon as reasonably practical. Lab results shall be reported to the license holder **via e-mail communication.**

a) **NOTE:** The Department shall make every effort to return an analysis within thirty (30) days of sample receipt, however, turnaround times will be affected by Program and laboratory staff workload. Lab results shall be sent to the Grower's business email on-file. It is the Grower's responsibility to make sure this e-mail is monitored, valid and current, as originally agreed upon within the signed Terms & Conditions of the Program's Application. **Waiting for the Department's lab analysis report is NOT a valid reason to delay harvest beyond fifteen (15) days following the Department's date of inspection and sample-collection visit.**

b) Verification of Licensed GPS Coordinates by Department Inspector

- 1) The Department inspector shall verify the GPS Coordinates and Location IDs of the production area(s) as compared with the GPS coordinates and Location ID information provided 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 Field Location IDs, as prompted by Section 3(F) of the Program Rules.
- 3) The Department inspector shall look for evidence that hemp plants or other cannabis plants were harvested without authorization prior to the inspector's inspection and sample-collection visit.
- 4) During the inspection, the Department inspector shall notify Hemp Program Staff of any discrepancies associated with Location IDs where hemp is produced, handled, and/or stored. The Department inspector will record updated GPS Coordinates for a specific Location ID on the GPS Verification Form.

c) Pre-Harvest Sampling Procedure by Department Inspector

- 1) The Program will e-mail the Department inspector the harvest inspection paperwork associated with the ***Harvest Request Form*** submitted by the licensed grower.
- 2) No earlier than fifteen (15) days prior to the grower's expected harvest date, a Department inspector will collect a representative sample from the lot to be harvested.
- 3) Assemble all necessary forms, Personal Protective Equipment (PPE), supplies and sampling equipment. Make sure sampling equipment is clean, dry, and in good working condition.
- 4) The Department inspector shall identify the lot to be harvested and 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 Department's harvest inspection paperwork.
- 5) The inspector shall visually establish the homogeneity of the lot to be harvested in order to establish that the growing area is of like variety. The inspector shall note any oddities or anomalies.
- 6) 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 lot.

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- 7) Identify lot of hemp to be sampled and label paper bag with the following information:
 - a) **Licensee Name & License Number**
 - b) **The statement: “Pre-Harvest Sample”**
 - c) **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
 - d) **Lot Information**
 - i. Location ID name
 - ii. Variety name
 - iii. Representative Lot Size in Acres (outdoors) or Square Feet (indoors)
- 8) First divide the lot into four (4) equal quadrants. Refer to **Figure 2 (Page 15 of these procedures)**.
- 9) The Department inspector will collect five (5) cuttings from five (5) plants at random throughout the entire lot, taking one cutting from each of the four equal quadrants, and the remaining fifth cutting from any plant anywhere in the lot.
- 10) The Department inspector may use appropriate discretion in determining whether more or less than five (5) cuttings should be taken from a lot.
- 11) 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. This is usually the tallest, most prominent part of the plant. Do not remove any stalks, stems, flowers, seeds, or leaves from the clipping. Refer to **Figure 1 (Page 15 of these procedures)**.
- 12) Place the plant clippings collected from the lot into the properly labeled paper bag. This is the representative sample.
- 13) Seal the paper bag shut by folding over the top twice and by using the heavy-duty stapler or security tape.
- 14) Use single use/disposable equipment or thoroughly clean sampling equipment and change disposable gloves after taking each representative sample collection from each lot.
- 15) A separate representative sample must be taken from each non-contiguous lot of a given variety.
- 16) A separate representative sample must be taken from each variety.
- 17) Representative sample(s) may be placed within provided 5-gallon bucket with locking lid during transport back to the Department.
- 18) Representative sample(s) shall be delivered to the Department’s Laboratory Services Division the same day as sample collection or within one (1) business day. Keep the sample dry and warm to avoid degradation of the plant material. The Department’s Laboratory Services Division will not accept damaged, torn, or unlabeled paper bags. Representative samples that do not have a completed Sample Form with Chain of Custody will not be accepted.

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d) Post-Harvest Sampling Procedure by Department Inspector

- 1) The Program will e-mail the Department inspector the harvest inspection paperwork associated with the **Harvest Request Form** received from the licensed grower.
- 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 lot selected for sampling shall be designated by the Pre-Harvest Sample lab results. The material selected for Post-Harvest Sampling from this lot will be determined by the Department, not the grower. All Post-Harvest Samples of floral material shall be taken from the designated harvested lot 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 6), 7) and 8) below.

If, upon inventory, the Department inspector determines that the entire harvest is not in 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 lot materials shall be ordered destroyed.

NOTE: 2021 may be the final season the Program's Post-Harvest Sampling Procedures will allow the post-harvest resampling and retesting of harvested intact-plants due to the USDA-AMS Hemp Production Final Rule remediation and disposal guidelines. Refer to the Program definition of "remediation" within these guidelines in Section II.

- 4) Identify lot of hemp to be sampled within the storage or drying area and label paper bag with the following information:
 - a) **Licensee Name & License Number**
 - b) **The statement: "Post-harvest Sample"**
 - c) **Sample ID number**
 - d) **Lot Information**
 - i. Location ID
 - ii. Variety Name
 - iii. Representative Lot Size in Acres (outdoors) or Square Feet (indoors)
- 5) For intact-plant post-harvest samples, go to **part 6)** of these procedures. For chopped, ground, or remediated post-harvest sample collection, go to **part 7)**. For post-harvest hemp material in other remediated forms, go to **part 8)** of these procedures.
- 6) **For Intact-Plant Post-Harvest Samples** (see note mentioned in **part 3)** above):
 - a) Ensure the entire harvest is accounted for and in the same form (i.e., intact-plants).
 - b) If the plant lot 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 15 of these procedures)**.
 - c) Divide the lot into four (4) equal quadrants. Refer to **Figure 2 (Page 15 of these procedures)**.
 - d) The Department inspector will collect five (5) cuttings from five (5) plants at random throughout the entire lot, taking one cutting from each of the four equal quadrants, and the remaining fifth cutting from anywhere in the lot.

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- e) The Department inspector may use appropriate discretion in determining whether more or less than five (5) cuttings should be taken from a lot.
 - f) Place the plant clippings collected from the lot into the properly labeled paper bag. This is the representative sample.
 - g) Seal the paper bag shut using the heavy-duty stapler or security tape.
 - h) Use single use/disposable equipment or thoroughly clean sampling equipment and change disposable gloves after taking each representative sample collection.
 - i) Representative sample(s) may be placed within provided 5-gallon bucket with locking lid during transport back to the Department.
 - j) Representative sample(s) shall be delivered to the Department's Laboratory Services Division the same day as sample collection or within one business day. Keep the sample dry and warm to avoid degradation of the plant material. The Department's Laboratory Services Division will not accept damaged, torn, or unlabeled paper bags. Representative samples that do not have a completed Sample Form with Chain of Custody will not be accepted.
- 7) **For Chopped, Ground, or Remediated Post-Harvest Samples:**
- 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) Divide the lot evenly into four (4) quadrants. A representative sample would consist of five (5) draws from non-adjacent areas. Each draw should consist of a handful or sterile scoop of biomass (approximately one cup by volume). The draws should be taken evenly from each equal quadrant. Refer to **Figure 2 (Page 15 of these procedures)**.
 - 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.
 - iii. **Note:** The Department inspector may use appropriate discretion in determining whether more or less than five (5) draws should be taken from a lot.
 - 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) Use single use/disposable equipment or thoroughly clean sampling equipment and change disposable gloves after taking each representative sample collection.
 - 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's Laboratory Services Division the same day as sample collection or within one business day. Keep the sample dry and warm to avoid degradation of the plant material. The Department's Laboratory Services Division will not accept damaged, torn, or unlabeled paper bags. Representative samples that do not have a completed Sample Form with Chain of Custody will not be accepted.

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- 8) **For Post-Harvest Material in other remediated 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, otherwise known as *homogenized*).
 - b) Divide the lot into four (4) equal quadrants. A representative sample would consist of five (5) draws from non-adjacent areas. Each draw should consist of a handful or sterile scoop of biomass (approximately one cup by volume). The draws should be taken evenly from each quadrant. Refer to **Figure 2 (Page 15 of these procedures)**.
 - 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) Use single use/disposable equipment or thoroughly clean sampling equipment and change disposable gloves after taking each representative sample collection.
 - 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's Laboratory Services Division the same day as sample collection or within one business day. Keep the sample dry and warm to avoid degradation of the plant material. The Department's Laboratory Services Division will not accept damaged, torn, or unlabeled paper bags. Representative samples that do not have a completed Sample Form with Chain of Custody will not be accepted.

VI. **THC Testing Procedure**

- 1) Testing for the acceptable Hemp THC level shall be completed by the Department's Laboratory Services Division. The Department is currently the only entity authorized to conduct the official THC compliance testing for the acceptable Hemp THC level for all lots produced in Arkansas.
- 2) Quantitative determination of Total delta-9-THC levels will be measured using High-Performance Liquid Chromatography with ultraviolet detection (HPLC-UV) as the primary regulatory lab method. The Department reserves the right to conduct Total THC level testing using similar quantitative laboratory instruments and methods, including but not limited to the use of gas chromatography with mass spectrometry detection (GC-MS), gas chromatography with flame ionization detection (GC-FID), or both.
- 3) The Program shall issue the licensee a "Sampling Invoice" **via e-mail communications** detailing the applicable program sampling fee(s) associated with the total number of pre-harvest or post-harvest samples collected by the Department at the time of inspection and sample-collection.
- 4) The issued Sampling Invoice shall be paid in full by the licensee and post-mailed to the Department within thirty (30) days of issuance. Total payment **MUST** accompany the Sampling Invoice within the mailing envelope. Post-mail total payment **and** Sampling Invoice to 1 Natural Resources Drive, Little Rock, AR 72205 ATTN: Hemp Program.
- 5) If a licensed grower fails to pay the Sampling Invoice in full within thirty (30) days, the Department may refer the license holder to the Department's debt collection agency after given notice in-writing.



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- 6) Test results shall be reported by the Program to license holders as soon as reasonably practical **via e-mail communications**. Program Staff shall make every effort to report test results within thirty (30) days of sample receipt, however, turnaround times will be affected by Program workload and laboratory sample load. Lab results shall be sent to the Licensed Grower’s business email on-file. It is the Licensed Grower’s responsibility to make sure this e-mail is monitored, valid and current, as originally agreed upon with then the Program’s Terms & Conditions.
- 7) Test results and disposal of noncompliant plant lots may be reported to the USDA or state/federal law enforcement entities.

VII. Post-Testing Actions

The total delta-9-THC content for hemp produced in Arkansas shall not exceed the acceptable Hemp THC level established within these procedures in accordance with state and federal law. In the interest of furthering research efforts and in recognition of variances due to growing conditions, weather, and varieties, the Department shall report the details of the test results to at least two decimal places where reasonably practical.

Table 1 (Page 10 of these procedures) provides a summary of the post-testing actions detailed in the following numbered points in this Section. **Table 1 (Page 10 of these procedures)** accounts for the Department’s Laboratory Services Division’s calculated “Measurement of Uncertainty” (MOU) value.

Once lab results are received from the Department, please refer to **Table 1 (Page 10 of these procedures)** to determine whether the tested lot material is considered compliant or noncompliant by the Department.

Please note that the MOU value is intended only for the Department’s Laboratory Services Division and is not the MOU value for ALL laboratories in Arkansas conducting THC analysis on cannabis material. Private laboratories will be required to calculate their own individual lab’s MOU value.

The Department Laboratory Services Division’s calculated MOU for the 2021 growing season is: **± 0.06% THC.**

Pre-Harvest Test Results	Material allowed to market; acceptable Hemp THC level	Material not allowed to move -- triggers Post-Harvest Sampling and testing or verification of leaf and floral destruction	Material Ordered Destroyed
	≤ 0.36% Total THC	≥ 0.37% — 0.99% Total THC	≥ 1.0% Total THC
Post-Harvest Test Results	Material allowed to market; acceptable Hemp THC level		Material Ordered Destroyed
	≤ 0.30% Total THC	≤ 0.36% Total THC	≥ 0.37% Total THC

NOTE: Calculated measurement of uncertainty value is derived from the “Guide to Expression of Uncertainty in Measurement (GUM)” (JCGM 100:2008, *Evaluation of Measurement Data.*)

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1) Pre-Harvest Test Results of less than or equal to 0.36% (Total) delta-9-THC:

- a. The Program will report results to the licensed grower via e-mail as soon as reasonably practicable.
- b. The Department designates the material as compliant; the lot is at the acceptable Hemp THC level and material is authorized for use or distribution in a manner consistent with the Program Rules. To that end, The Program Rules and the Arkansas Industrial Hemp Act do not allow the sale of leaf and/or floral material in any form to unlicensed entities, including the public consumer or retail shops.
- c. Material allowed to market to licensed Hemp Growers or Hemp Processors that are licensed with either 1) a state's department of agriculture, 2) USDA's Hemp Production Program, or 3) a USDA-approved Hemp Program.

2) Pre-Harvest Test Results of greater than or equal to 0.37%, but less than 0.99% (Total) delta-9-THC:

- a. The Program will report results to the licensed grower via e-mail as soon as reasonably practicable.
- b. The Department designates the material as noncompliant.
- c. The Department may report noncompliant results to the USDA an applicable state or federal law enforcement agencies.
- d. The License Holder shall not transfer the harvested lot from the registered growing, storage/drying, or processing site. The noncompliant lot in question must remain labeled and segregated from other harvested hemp lots until released in writing by the Department.
- e. License Holder is permitted to complete harvest activities, which may include drying, chopping, or grinding, in preparation for transfer to a processor or storage location.
- f. Within seven (7) days of e-mail receipt notice of a measured THC concentration exceeding the acceptable hemp THC level, a licensed grower shall decide between either: **(1) a post-harvest sample/retest OR (2) complete destruction of all leaf and floral material**. License Holder must complete all harvest activities, which may include drying, chopping, grinding, or remediating of the entire harvest before the material is eligible for post-harvest sample collection by the Department.
- g. If the License Holder wishes to dispose of the entire lot with no Post-Harvest retest, a "***Destruction Request Form***" shall be submitted to the Department via e-mail communication to industrialhemp@agriculture.arkansas.gov. If the License Holder wishes to opt for a Post-Harvest retest, an additional "***Harvest Request Form***" shall be submitted to the Department via e-mail communication to industrialhemp@agriculture.arkansas.gov, indicating "Post-Harvest Resample" in question 1. The street address in Question 2 of the ***Harvest Request Form*** shall match the actual street address location where the noncompliant lot is presently stored, pending resampling and retesting by the Department.
- h. If harvesting only grain, seed or fiber from the lot, the Department shall verify the complete destruction of all leaf and floral material from the lot. The grain or seed must be processed and cannot remain as a viable seed for planting. Bare stalk for fiber that is free of leaf, seed, or floral material is eligible for processing.

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- i. The hemp variety in question may become designated as a Variety of Concern and the Department may run additional tests on the samples collected from other lots of this variety.
- j. If more than 50% of Pre-Harvest Samples' test results for a given Variety of Concern are above 0.30%, then the variety may be designated as a Prohibited Variety and excluded from the program.
- k. If a variety is designated as a Prohibited Variety in the program, all material, including viable seed, live plants, stock plants, and all germplasm, shall be destroyed in the presence of a Department representative, law enforcement, or both.

3) Pre-Harvest Test Results equal to or greater than 1.0% (Total) delta-9-THC:

- a. The Program will report results to the licensed grower via e-mail as soon as reasonably practicable.
- b. The Department designates the material as noncompliant and ordered mandatorily destroyed.
- c. The Department may report noncompliant results to the USDA and applicable state or federal law enforcement agencies.
- d. The License Holder shall not transfer the harvested lot from the registered growing, storage/drying, or processing site. The noncompliant lot in question must remain segregated and labeled from other harvested hemp lots.
- e. The License Holder shall mandatorily dispose of the entire harvested lot without compensation and any unharvested crop of this variety from the lot. Within seven (7) days of receiving notice of a measured THC concentration exceeding the acceptable hemp THC level, a License Holder shall file a "***Destruction Request Form***" to be submitted to the Department **via e-mail communication to industrialhemp@agriculture.arkansas.gov** to request the disposal of the noncompliant material.
- f. Materials testing equal to or greater than 1.0% total delta-9-THC from a Pre-Harvest test result shall be destroyed in the presence of a Department representative, law enforcement, or both.
- g. The Department may collect samples of and test harvest material, but a Post-Harvest retest is not required.
- h. The variety may be labeled a Prohibited Variety and excluded from the Program.
- i. The Department may initiate proceedings to suspend or revoke the License and exclude the License Holder from future participation with the Department's Program.

4) Post-Harvest Test Results of less than or equal to 0.30% (Total) delta-9-THC:

- a. The Program will report results to the licensed grower via e-mail as soon as reasonably practicable.
- b. The Department designates the material as compliant; the lot is at the acceptable Hemp THC level and material is authorized for use or distribution in a manner consistent with the Program Rules. To that end, The Program Rules and the Arkansas Industrial Hemp Act do not allow the sale of leaf and/or floral material in any form to unlicensed entities, including the public consumer or retail shops.
- c. Material allowed to market to licensed Hemp Growers or Hemp Processors that are licensed with either 1) a state's department of agriculture, 2) USDA's Hemp Production Program, or 3) a USDA-approved Hemp Program.



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5) Post-Harvest Test Results of greater than 0.30%, but less than 0.36% (Total) delta-9-THC:

- a. The Program will report results to the licensed grower via e-mail as soon as reasonably practicable.
- b. The Department designates the material as compliant; the lot is at the acceptable Hemp THC level and material is authorized for use or distribution in a manner consistent with the Program Rules. To that end, The Program Rules and the Arkansas Industrial Hemp Act do not allow the sale of leaf and/or floral material in any form to unlicensed entities, including the public consumer or retail shops.
- c. Any marketing of materials testing between 0.30% and 0.36% is at the License Holder's risk.
- d. Material allowed to market to licensed Hemp Growers or Hemp Processors that are licensed with either 1) a state's department of agriculture, 2) USDA's Hemp Production Program, or 3) a USDA-approved Hemp Program.

6) Post-Harvest Test Results equal to or greater than 0.37% (Total) delta-9-THC:

- a. The Program will report results to the licensed grower via e-mail as soon as reasonably practicable.
- b. The Department designates the material as noncompliant and ordered mandatorily destroyed.
- c. The Department may report noncompliant results to the USDA an applicable state or federal law enforcement agencies.
- d. The License Holder shall not transfer the harvested lot from the registered growing, storage/drying, or processing site. The noncompliant lot in question must remain segregated and labeled from other harvested hemp lots.
- e. The License Holder shall mandatorily dispose of the entire harvested lot without compensation and any unharvested crop of this variety from the lot. Within seven (7) days of receiving notice of a measured THC concentration exceeding the acceptable hemp THC level, a License Holder shall file a "***Destruction Request Form***" to be submitted to the Department **via e-mail communication to industrialhemp@agriculture.arkansas.gov** to request the disposal of the noncompliant material.
- f. Materials testing equal to or greater than 0.37% total delta-9-THC from a Post-Harvest test result shall be destroyed in the presence of a Department representative, law enforcement, or both.
- g. The Department reserves the right to run additional tests on post-harvest samples of that variety from the lot in the interest of furthering research efforts.
- h. Variety may be labeled a Prohibited Variety and excluded from the Program.
- i. The Department may initiate proceedings to suspend or revoke the License and exclude the License Holder from future participation with the Department's Program.

7) Varieties determined to be a Prohibited Variety:

- a. Determined from lab data from previous growing seasons, the Department may develop a list of hemp varieties prohibited to plant, grow, harvest or market under the Program. This list is known as a "Summary of Varieties List," located on the Department's Hemp Program website.
- b. The Department may report the existence of a Prohibited Variety to relevant state and federal law enforcement agencies.
- c. If a variety is designated as a Prohibited Variety in the program, all material, including viable seed, live plants, stock plants, and all germplasm, shall be destroyed in the presence of a Department representative, law enforcement, or both.



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VIII. Disposal of Noncompliant Harvested Material with Department Witness Present

- 1) If a lot is designated for mandatory disposal, a license holder shall submit to the Department within seven (7) days of receiving a mandatory destruction order a ***“Destruction Request Form”*** via e-mail communication to industrialhemp@agriculture.arkansas.gov.
- 2) The Department or law enforcement shall ensure that all leaf material and floral material from the noncompliant lot is disposed of using one of the approved destruction methods listed in **Table 2 (Page 16 of these procedures)**. The costs of disposal, if any are incurred by the Department, shall be charged to the license holder.
- 3) Disposals shall occur on-site at the licensed storage or growing location where the noncompliant harvest lot is presently stored. A Department inspector or representative shall personally observe the harvested material’s destruction without removing the harvested material from the license holder’s premises. Destruction shall occur using one of the approved disposal methods listed in **Table 2 (Page 16 of these procedures.)**
- 4) If special circumstances arise and do not allow for a disposal on-site at the licensed storage or growing location by the license holder, the Department may approve a license holder’s request to dispose of the material by vehicle transport to a Department-approved location for destruction.
- 5) If the Department approves a license holder’s request to dispose of the material by vehicle transport to a Department-approved location:
 - a. Prior to transport, a Department inspector shall load, or observe the loading, of the harvested material until the material is completely secured on or in the vehicle.
 - b. During transport, a Department inspector shall accompany the harvested material as it moves in a vehicle directly to a Department-approved location. The vehicle shall constantly move towards its final destination without unnecessary stops, stops for reasons unrelated to transport task, or stops of an extended duration.
 - c. After transport and upon arrival at the Department-approved location, a Department inspector shall unload, or observe the unloading, of the harvested material until the material is completely removed from the vehicle.
 - d. After the material’s removal from the vehicle, a Department inspector shall personally observe the harvested material’s destruction using one of the approved disposal methods listed in **Table 2 (Page 16 of these procedures)**.

(Continued on next page)



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

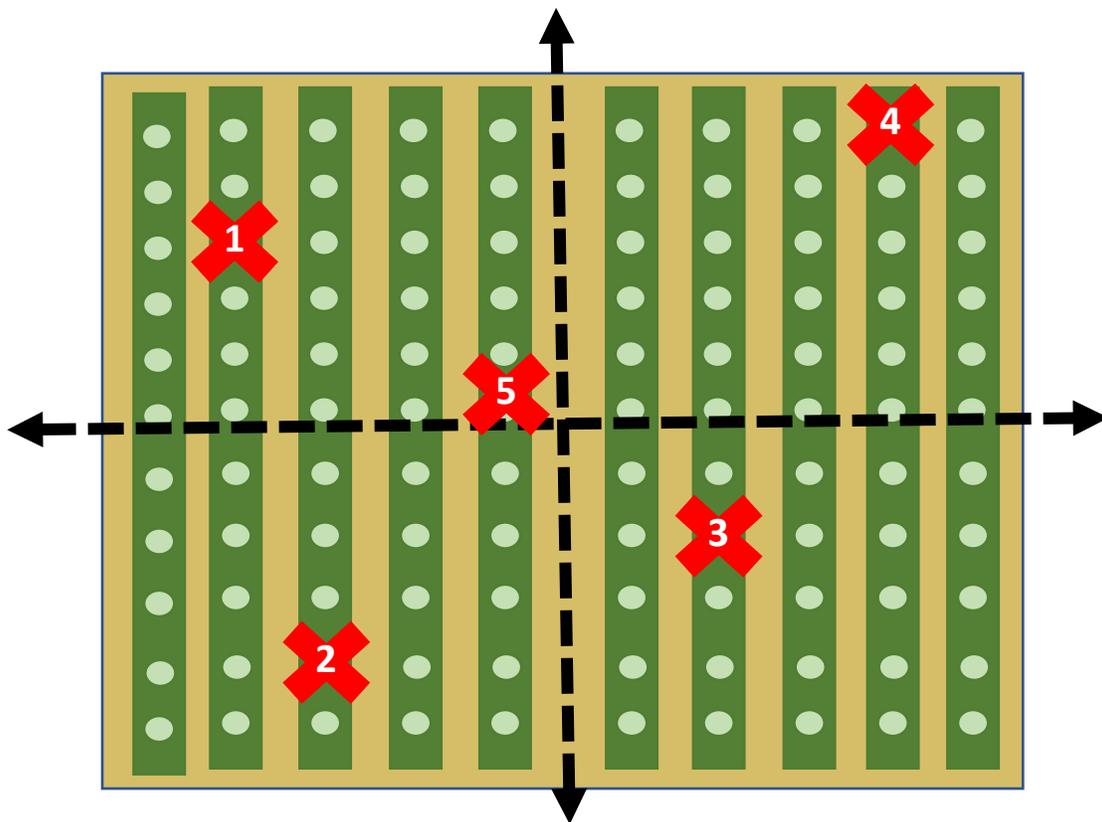


FIGURE 2. Illustration of four (4) quadrant representative lot sampling. Example illustration representing a Field Plot with planted rows and individual plants. Dotted lines indicate the four-quadrant grid used for Pre-Harvest and Post-Harvest lot sampling. In this example, red X's represent where five (5) cuttings were collected for the Pre-Harvest compliance sample from five (5) plants.



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Table 2: Approved Methods of Disposal/Destruction Activities from USDA, rendering materials non-retrievable or non-ingestible			
Photo Example	Ag Production Activity	Compliant Outcome	Photo Example
	Plowing Under: Curved plow blades rotate subsoil to surface and bury crop below	Plowing Under: - "Green Manure" - Amends soil directly from crop	
	Mulching / Composting: Fields crops cut and blended with manure or other biomass material	Mulching / Composting: - "Green Manure" - Mulch mixed with manure or other biomass	
	Disking: Leveling of field using tow-behind disk implement	Disking: - "Green Manure" - Amends soil directly from crop while leveling field	
	Bush Mower / Chopper: Commercial lawn mower used to shred and mix thick vegetation	Bush Mower / Chopper: - "Green Manure" - Shredded biomass decomposes into soil	
	Deep Burial: Fields are trenched, surface soil is buried at depth of at least 12"	Deep Burial: - Field biomass buried in trenches and covered with soil	
	Burning: Setting fire to specific production fields or biomatter piled on the field	Burning: - Fields are cleared of all plant material	