

Standard Practice for Field Sampling of Hemp



ALABAMA DEPARTMENT OF AGRICULTURE & INDUSTRIES

Food Safety/Ag Compliance Division Industrial Hemp Program

Scope

- a) This practice applies to field sampling of hemp.
- b) Samples collected under this procedure are acceptable for submitting to a qualified laboratory for determination of Total Delta-9-Tetrahydrocannabinol (Δ^9 THC) in hemp.
- c) The samples collected are intended to be representative of the THC content in a stand of hemp growing in the cultivated growing area.

This practice does not purport to address all of the safety concerns, if any, associated with its use. The user of this standard shall exercise caution and follow applicable safety and health practices.

Terminology

Definitions:

- a) *sample* – a composite, representative portion of plants in a hemp plot.
- b) *department* – the Alabama Department of Agriculture and Industries
- c) *growing area* - the land area on which hemp is grown
- d) *plot* – a continuous area in a field, greenhouse, or indoor growing structure containing the same variety or strain of hemp throughout the area.
- e) *licensee* – an applicant that has been approved to grow hemp as defined in Code of Alabama 80-10-21
- f) *sample specimen* – the top 20 cm (8 inches) of the hemp plant, including inflorescence, stem, and leaves.
- g) *stand* - a group or growth of hemp
- h) *THC* – Total Delta-9-Tetrahydrocannabinol (Δ^9 THC) as defined by federal law.

Summary of Practice

This practice provides procedures for entering a growing area and collecting the minimum number of plant specimens necessary to represent a homogeneous composition of the plot that is to be sampled. An authorized representative of the Alabama Department of Agriculture and Industries (ADAI) enters a growing area, strategically examines the growing area, establishes an approach for navigating the growing area and collects individual specimens of representative plants in order to obtain a representative sample of hemp in the growing area. Because test methodology requires small amounts of material, care must be taken to provide samples that accurately reflect the entirety of the growing area.

Interferences

The time of the growing season selected for collecting the samples will impact the concentration of THC.

Equipment and Supplies

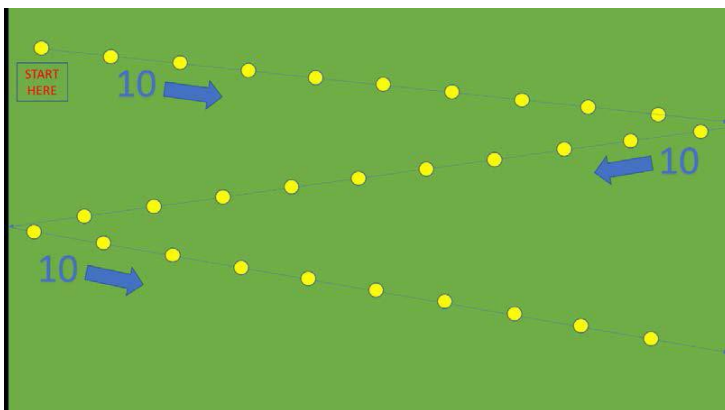
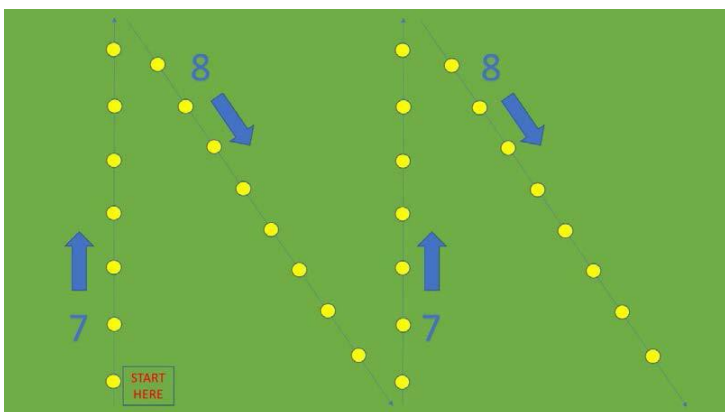
- a) Garden pruners
- b) Alcohol wipes to sanitize pruners before sampling each plot
- c) Paper sample bags
- d) 8" rule
- e) Stapler
- f) Ball point pen to write on bag(s)
- g) Bar code stickers
- h) Smartphone or tablet
- i) Pre-filled notice of inspection forms, chain-of-custody forms, and blank sample collection forms
- j) Portable printer
- k) Disposable gloves
- l) Container to transport bagged samples

Sampling Procedures

- a) The Licensee or designated employee shall accompany the state inspector throughout the sampling process.
- b) The inspector shall present credentials and have the licensee or designated employee sign a notice of inspection. (The inspector should print out this form prior to the sampling visit.)
- c) The inspector shall verify the GPS coordinates of the growing area as compared with the GPS coordinates submitted by the licensee.
- d) The inspector shall estimate the average height, appearance, approximate density, condition of the plants, and degree of maturity of the inflorescences.
- e) The inspector shall visually establish the homogeneity of the stand to establish that the growing area is of like variety.
- f) Any concerns of stand homogeneity shall be immediately reported to Montgomery hemp staff. Samples and photos shall be taken of individual plants differing from the norm.
- g) Individual plants that appear significantly different from the plot average shall be sampled individually. The sample shall be put in a separate bag and labeled as a plant of concern. Seal and label the bag as directed in p) through u) below.
- h) Time of Sampling

The licensee shall notify ADAI of the selected harvest date 14 calendar days prior to harvest by submitting a completed Harvest/Destruction Request. The ADAI hemp program staff will assign an inspector to that licensee. The inspector shall schedule the sample date as close to the designated harvest date and notify the licensee of the designated sample date and time. The licensee shall verify that they will be present at their hemp plot on that day and time.
- i) Each variety or cultivar will be sampled separately.
- j) The pruners used to clip samples must be cleaned with alcohol wipes between plots.

- k) Disposable gloves shall be worn to take hemp samples. These shall be discarded after each plot is sampled.
- l) When feasible, avoid sampling plants within 3 meters (10 feet) of the plot edge.
- m) The sampler must choose one of the patterns most suitable for the field to be sampled (Figure 1 and Figure 2). The sampler must sample according to the pattern to the extent possible but may deviate from the pattern as necessary to account for particular field conditions and to ensure that all parts of the field are adequately and proportionately sampled to produce a representative sample.



These are typical sawtooth survey patterns starting in a corner of the field. The yellow dots indicate the approximate locations to collect samples.

n) The sample size (number of clippings) to be taken according to the plot size, in acres:

<i>N</i> - Growing Area, in acres	<i>number of plants</i>
1	4
2	4
3	4
4	4
5	6
6	6
7	8
8	8
9	10
10	10
15	16
20	18
25	24
30	28
35	32
40	36
45	40
50	44
75	60
100	76
160 and over	104

- o) No matter how small the plot is, take cuttings from at least four (4) hemp plants within the plot.
- p) Clip the entire top 20 cm (8 inches) of the hemp plant's primary stem.
- q) Samples shall be secured in a paper bag.
- r) Place the entire composite sample in a paper bag. Seal the bag by folding over the top once and stapling the bag shut with at least two staples.
- s) A separate sample must be taken from each non-contiguous plot of a given variety.
- t) A separate sample must be taken of each variety.
- u) Place a bar code sticker on the sample bag. The number shown on the sticker is the field sample number. Enter bar code number on the Chain of Custody form.

- v) In large fields from which the entire composite sample will not fit in one bag, label additional sample bags with the number for the bar code assigned to that field, and the number of bags. Use a ballpoint pen (NO permanent markers!). Enter bar code number on the Chain of Custody form.

Example: In a 20-acre field, you will take 18 cuttings per the table above. It will require 3 bags to contain that many samples. On the first sample bag, place the bar code sticker (Number xxxxx), and write 1 of 3 with a ballpoint pen. On the other two bags, write xxxxx (number from bar code) and 2 of 3, and xxxxx and 3 of 3.

- w) The inspector shall review the hemp sample form with the responsible party and obtain signatures of responsible party. The completed form will automatically upload to Plant Protection in Montgomery. The signed form will be emailed to the inspector, lab, and licensee or designated employee.
- x) Samples must be stored in a cool, dry area that is locked and secure.
- y) The sample shall be transported to ADAI for drying and analysis within 24 hours.
- z) Samples should be taken to the ADAI Food and Drug Lab. To maintain the chain of custody, inspectors will need to drive their samples to the lab within 24 hours. Samples should be delivered to the lab weekdays between 8:30 a.m. and 4:00 p.m.
- aa) Use the chain of custody form when passing samples off to another ADAI staff member for transport. Draw a single diagonal line through empty fields and put your initials and the date on the line.

Example:

	Variety Name	Number of Cuttings	Number of Bags
Variety 1	Franklin	8	1
Variety 2		<i>JLS 6/25/19</i>	
Variety 3			

- bb) The samples will be turned over to;
 - Food and Drug Lab Personnel
 - Food and Drug Laboratory
 - Alabama Department of Agriculture and Industries
 - 1445 Federal Drive
 - Montgomery AL 36107
 - Office (334) 240-7267

EXHIBIT A

ALABAMA DEPARTMENT OF AGRICULTURE AND INDUSTRIES FOOD SAFETY/AG COMPLIANCE DIVISION INDUSTRIAL HEMP PROGRAM

STANDARD PRACTICE FOR FIELD SAMPLING OF HEMP

PERFORMANCE-BASED SAMPLING PROTOCOL ADDENDUM – HEMP MICROGREENS

The Alabama Department of Agriculture and Industries' ("Department") Standard Practice for Field Sampling of Hemp Protocol, established June 25, 2019, adopts USDA performance sampling approach where the method of sampling ensures a confidence level of 95 percent that no more than one percent of the plants in each lot would exceed the acceptable hemp THC level and ensures that a representative sample is collected that represents a homogeneous composition of the lot. The performance-based sampling methods in this protocol meet the following criteria as described in 7 CFR §990.3 (a)(2)(iii)(A) and (B). These are:

- A. The alternative sampling methods described in this protocol are included as an addendum to the State's Hemp Plan (Exhibit A) and will be reviewed and approved by USDA prior to implementation.
- B. The alternative methods will ensure, at a confidence level of 95 percent, that the cannabis plants produced under the guidelines of an alternative method will not test above the acceptable hemp THC level. The alternative methods in this protocol include the following:
 1. **Production of Hemp Microgreens.** A producer who grows immature plants including microgreens and greens, who will not have flowering plants, and where the Hemp Sampling Protocol would not be applicable; and

Performance-based sampling does not prevent the state from conducting random records inspections or sampling and testing of any hemp crops from licensed producers of the hemp program pursuant to regulatory requirements outlined in USDA Rules 7 CFR Part 990 and the Alabama Hemp Rules set forth in Administrative Code 80-10-21 et seq. The Department reserves the right to conduct a records inspection, sample, and test any hemp lot at any time to ensure compliance with the acceptable hemp THC level. Based on testing data for a period of two years, the Department will reassess all performance-based sampling.

Performance based sampling will include different sampling frequencies and requirements for the following categories of hemp producers:

A. Production of Hemp Microgreens

Hemp Microgreens (definition): Immature hemp seedlings for human consumption that are cut-off above the soil or substrate line and harvested prior to flowering and not more than 14 calendar days after germination. Hemp microgreens are typically between two (2) and three (3) inches in height, but not taller than five (5) inches.

1. Due to extremely low levels of cannabinoids in the very immature plants, the sampling and testing of every harvest lot is impractical and unnecessary.
2. With the short nature of producing hemp microgreens, a grower must indicate to the Department when filing an Industrial Hemp Microgreens Production Report as required by the Alabama Hemp Rules set forth in Administrative Code 80-10-21 et seq, the purpose of the planting is to produce hemp microgreens. A Harvest/Destruction Request must be filed at the same time an Industrial Hemp Microgreens Production Report is filed so any necessary performance-based compliance activities can be scheduled.
3. The Department may grant an exception to sampling under the Department's Hemp Sampling Protocol and if the Department is notified as indicated in (1.) and (2.) above.
4. An alternative compliance and sampling protocol under this exception will include:
 - a. A producer shall provide documentation to the Department, prior to planting, that demonstrates the seeds that are used to produce a hemp microgreen crop originated from a hemp variety that meets the definition of hemp by having been produced under compliance by a licensed hemp producer under a state, tribal, or federal authorized program, or from a foreign supplier that meets USDA import requirements regulatory requirements outlined in USDA Rules 7 CFR Part 990 and the Alabama Hemp Rules set forth in Administrative Code 80-10-21 et seq.
 - b. Visual verification by the Department that hemp microgreen crops are being harvested within 14 calendar days of planting and that the crops do not contain flowering material.
5. Any hemp microgreen crop that produces any floral material, is taller than five (5) inches, or has not been harvested within 14 calendar days of planting must be either sampled and tested, or disposed of, pursuant to USDA Rules 7 CFR Part 990 and the Alabama Hemp Rules set forth in Administrative Code 80-10-21 et seq.
6. An exception granted under these conditions does not exempt a producer from following all reporting and notification requirements outlined in USDA Rules 7 CFR Part 990 and the Alabama Hemp Rules set forth in Administrative Code 80-10-21 et seq.
7. The Department reserves the right to conduct a records inspection, sample, and test any hemp lot at any time to determine hemp THC levels.
8. The Department's policy on the performance-based sampling in this section is found as an addendum in the Standard Practice for Field Sampling of Hemp.