



Biochemistry Laboratory SOP No.: PT-LBOP-014		Page 1 of 3
Title: Hemp Sample Preparation		
Revision: Original	Replaces: n/a	Effective: 09/05/2014

1. Purpose:

To provide a standard operating procedure (SOP) for the homogenization of industrial hemp samples. This SOP describes the drying, sorting, and grinding of hemp samples.

2. Scope, Responsibilities, and Authorities:

This SOP applies to and shall be followed by staff members performing hemp sample analysis in the Chemical Sciences and Pesticides Unit at the CDA-BCL. Non-compliance shall be reported to the Quality Assurance Officer (QAO) and/or the Laboratory Manager. The Laboratory Manager and QAO are authorized to request and review records.

3. Outline of Procedure:

- 6.1 Safety Precautions and General Requirements
- 6.2 Resources: Equipment, Chemicals, Supplies
- 6.3 Hemp Sample Drying
- 6.4 Hemp Sample Sieving
- 6.5 Hemp Sample Homogenization
- 6.6 Records
- 6.7 Sample Storage, Disposal and Clean-up

4. References, Related Procedures, and Forms:Forms

PTL014A Moisture in Hemp Worksheet, v01.

External Documents

ED643 8 CCR 1203-23 Rules Pertaining to the Administration and Enforcement of the Industrial Regulatory Hemp Act, CDA, Plant Industry Division

5. Definitions:

- 5.1 Homogeneous – having a uniform composition or structure.
- 5.2 Sieve – a utensil consisting of a round frame surrounding a mesh that is used to separate large particles from small particles

6. Specific Procedures:

- 6.1 Safety Precautions and General Requirements.
 - 6.1.1 Per ED643, THC content shall be analyzed on a “dry weight basis.” Dry weight has been established as the weight of the hemp at $\leq 15\%$ moisture.
- 6.2 Resources: Equipment, Chemicals, Supplies
 - 6.2.1 Food Service Aluminum Foil
 - 6.2.2 Sieve - #8 mesh
 - 6.2.3 Polypropylene specimen containers with caps
 - 6.2.4 Analytical Mill, Tekmar A-10 or equivalent
 - 6.2.5 Hand-operated cutters and shears
 - 6.2.6 Drying Oven



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6.2.7 Large desiccator

6.3 Hemp Sample Drying

6.3.1 Fold up the edges of a flat piece of foil to form a tray

6.3.2 Spread a small portion of the hemp sample onto the foil tray. Record the weight of the sample + the foil tray on PTL014A.

6.3.3 Dry the sample at $90 \pm 5^\circ \text{C}$ for approximately 2 hours.

6.3.4 Record the time in and out of the oven on PTL014A.

6.3.5 Allow the sample to cool for at least 30 minutes in a desiccator.

6.3.6 Record the weight of the sample and the foil tray on PTL014A.

6.3.7 Dry the sample for an additional 15 minutes at $90 \pm 5^\circ \text{C}$, allow to cool for at least 30 minutes in a desiccator, and record the weight of the sample and the foil tray on PTL014A. Repeat this step until a constant weight is achieved.

6.3.8 The remaining sample can be dried to the desired moisture content using the calculations on PTL014A.

6.4 Hemp Sample Sieving

6.4.1 Stems and seeds shall be sorted from the hemp samples prior to homogenization.

6.4.2 Gently work the entire dried and cooled hemp sample through a #8 mesh screen sieve.

6.4.3 Place the sieved sample back on the foil tray, including any leaves or flower pieces that were too large to work through the mesh.

6.4.4 Discard the seeds and stems.

6.5 Hemp Sample Homogenization

6.5.1 Place the sample into the grinding chamber of the analytical mill and grind for approximately 30 seconds or until a fine, even texture is achieved.

6.5.2 Using the foil tray to catch any spilled sample, pour the sample directly from the analytical mill into a pre-labeled specimen cup.

6.5.3 Repeat the previous two steps until the entire sample has been ground.

6.6 Records

6.6.1 Document that the sample has been prepared by initialing the PREP column in the Pesticide Sample Logbook on the line corresponding to the specific sample number.

6.6.2 Form PTL014A shall be completed and maintained for each batch of samples dried in an oven.

6.6.3 Records shall be made available for internal and external audits, assessments, reviews and inspections.



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6.7 Sample Storage, Disposal and Clean-up

- 6.7.1 Samples (original and prepared) shall be stored at room temperature in designated container in locked room 201.
- 6.7.2 Violative samples shall be retained and investigators notified for immediate pick up.
- 6.7.3 Non-violative samples may be retained for method development work or disposed in a trash receptacle.

7. **Revisions:**

NA – Original Version

8. **Approvals:**

Original Author: Daya Mitchell



Approved By: Keith Wegner
Laboratory Manager, CDA-BCL



Date



Approved By: Ellen LaRiviere
Quality Assurance Officer, CDA-BCL



Date



COLORADO
 Department of Agriculture
 Inspector & Compliance Services Division

Title: Moisture in Hemp Worksheet
Number: PTL014A
Version: 01
Equipment/Instrument No.: N/A
Related Procedure No.: PT-LBOP-014
Revision: Original

HEMP % Moisture

Date	Sample Number	Container Weight (g)	A Sample + Container (g)	B Harvest Sample Weight (g)	C Dry Sample + Container (g) 1st Drying	D Dry Sample + Container (g) 2nd Drying	E Dry Sample + Container (g) Final	F Sample Weight (g) 1st Drying	G Sample Weight (g) 2nd Drying	H Sample Weight (g) Final	I % Dry Matter H/B*100	J % Moisture 100-I
				0				0.00	0.00	0.00	#DIV/0!	#DIV/0!
				0				0.00	0.00	0.00	#DIV/0!	#DIV/0!
				0				0.00	0.00	0.00	#DIV/0!	#DIV/0!
				0				0.00	0.00	0.00	#DIV/0!	#DIV/0!
				0				0.00	0.00	0.00	#DIV/0!	#DIV/0!
				0				0.00	0.00	0.00	#DIV/0!	#DIV/0!
				0				0.00	0.00	0.00	#DIV/0!	#DIV/0!
				0				0.00	0.00	0.00	#DIV/0!	#DIV/0!
				0				0.00	0.00	0.00	#DIV/0!	#DIV/0!
				0				0.00	0.00	0.00	#DIV/0!	#DIV/0!
				0				0.00	0.00	0.00	#DIV/0!	#DIV/0!
				0				0.00	0.00	0.00	#DIV/0!	#DIV/0!
				0				0.00	0.00	0.00	#DIV/0!	#DIV/0!
				0				0.00	0.00	0.00	#DIV/0!	#DIV/0!

OVEN:	1st Drying	2nd Drying	3rd Drying	4th Drying
TEMP.:				
T-IN				
T-OUT				

Total Drying Time 0:00



COLORADO
Department of Agriculture
Inspection and Compliance Division

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Equipment/Instrument No.: N/A

Verify that samples are dried to an appropriate moisture with the table below:

Sample Number	Harvest Weight (g)	Initial % Moisture	Expected Weight (g)	Desired % Moisture
0		#DIV/0!	#DIV/0!	10
0		#DIV/0!	#DIV/0!	10
0		#DIV/0!	#DIV/0!	10
0		#DIV/0!	#DIV/0!	10
0		#DIV/0!	#DIV/0!	10
0		#DIV/0!	#DIV/0!	10
0		#DIV/0!	#DIV/0!	10
0		#DIV/0!	#DIV/0!	10
0		#DIV/0!	#DIV/0!	10
0		#DIV/0!	#DIV/0!	10

Analyst: _____ Date: _____