

**WAC 314-55-102 Quality assurance testing.** A third-party testing lab must be certified by the WSLCB or the WSLCB's vendor as meeting the WSLCB's accreditation and other requirements prior to conducting quality assurance tests required under this section.

(1) **Quality assurance fields of testing.** Certified labs must be certified to the following fields of testing by the WSLCB or its designee and must adhere to the guidelines for each quality assurance field of testing listed below, with the exception of mycotoxin, heavy metal, or pesticide residue screening. Certification to perform mycotoxin, heavy metals and pesticides may be obtained but is not required to obtain certification as a testing lab. A lab must become certified in all fields of testing prior to conducting any testing or screening in that field of testing, regardless of whether the test is required under this section.

(a) **Potency analysis.**

(i) Certified labs must test and report the following cannabinoids to the WSLCB when testing for potency:

- (A) THCA;
- (B) THC;
- (C) Total THC;
- (D) CBDA;
- (E) CBD; and
- (F) Total CBD.

(ii) Calculating total THC and total CBD.

(A) Total THC must be calculated as follows, where M is the mass or mass fraction of delta-9 THC or delta-9 THCA:  $M \text{ total delta-9 THC} = M \text{ delta-9 THC} + (0.877 \times M \text{ delta-9 THCA})$ .

(B) Total CBD must be calculated as follows, where M is the mass or mass fraction of CBD and CBDA:  $M \text{ total CBD} = M \text{ CBD} + (0.877 \times M \text{ CBDA})$ .

(iii) Regardless of analytical equipment or methodology, certified labs must accurately measure and report the acidic (THCA and CBDA) and neutral (THC and CBD) forms of the cannabinoids.

(b) **Potency analysis for flower lots.**

(i) Certified labs must test and report the results for the required flower lot samples as described in WAC 314-55-101(3) for the following required cannabinoids:

- (A) THCA;
- (B) THC;
- (C) Total THC;
- (D) CBDA;
- (E) CBD; and
- (F) Total CBD.

(ii) Calculating total THC and total CBD.

(A) Total THC must be calculated as follows, where M is the mass or mass fraction of delta-9 THC or delta-9 THCA:  $M \text{ total delta-9 THC} = M \text{ delta-9 THC} + (0.877 \times M \text{ delta-9 THCA})$ .

(B) Total CBD must be calculated as follows, where M is the mass or mass fraction of CBD and CBDA:  $M \text{ total CBD} = M \text{ CBD} + (0.877 \times M \text{ CBDA})$ .

(c) Certified labs may combine in equal parts multiple samples from the same flower lot for the purposes of the following tests after the individual samples described in WAC 314-55-101(3) have been tested for potency analysis.

(i) **Moisture analysis.** The sample and related lot or batch fails quality assurance testing for moisture analysis if the results exceed the following limits:

(A) Water activity rate of more than 0.65  $a_w$ ; and

(B) Moisture content more than fifteen percent.

(ii) **Foreign matter screening.** The sample and related lot or batch fail quality assurance testing for foreign matter screening if the results exceed the following limits:

(A) Five percent of stems 3mm or more in diameter; and

(B) Two percent of seeds or other foreign matter.

(iii) **Microbiological screening.** The sample and related lot or batch fail quality assurance testing for microbiological screening if the results exceed the following limits:

	<b>Enterobacteria (bile-tolerant gram-negative bacteria)</b>	<b><i>E. coli</i> (pathogenic strains) and <i>Salmonella spp.</i></b>
<b>Unprocessed Plant Material</b>	10 <sup>4</sup>	Not detected in 1g
<b>Extracted or processed Botanical Product</b>	10 <sup>3</sup>	Not detected in 1g

(iv) **Mycotoxin screening.** The sample and related lot or batch fail quality assurance testing for mycotoxin screening if the results exceed the following limits:

(A) Total of Aflatoxin B1, B2, G1, G2: 20 µg/kg of substance; and

(B) Ochratoxin A: 20 µg/kg of substance.

(d) **Residual solvent screening.** Except as otherwise provided in this subsection, a sample and related lot or batch fail quality assurance testing for residual solvents if the results exceed the limits provided in the table below. Residual solvent results of more than 5,000 ppm for class three solvents, 50 ppm for class two solvents, and 2 ppm for class one solvents as defined in *United States Pharmacopoeia, USP 30 Chemical Tests / <467> - Residual Solvents (USP <467>)* not listed in the table below fail quality assurance testing. When residual solvent screening is required, certified labs must test for the solvents listed in the table below at a minimum.

<b>Solvent*</b>	<b>ppm</b>
Acetone	5,000
Benzene	2
Butanes	5,000
Cyclohexane	3,880
Chloroform	2
Dichloromethane	600
Ethyl acetate	5,000
Heptanes	5,000
Hexanes	290
Isopropanol (2-propanol)	5,000
Methanol	3,000
Pentanes	5,000
Propane	5,000
Toluene	890
Xylene**	2,170

\*And isomers thereof.

\*\*Usually 60% *m*-xylene, 14% *p*-xylene, 9% *o*-xylene with 17% ethyl benzene.

(e) **Heavy metal screening.** A sample and related lot or batch fail quality assurance testing for heavy metals if the results exceed the limits provided in the table below.

<b>Metal</b>	<b>µ/daily dose (5 grams)</b>
Inorganic arsenic	10.0
Cadmium	4.1
Lead	6.0
Mercury	2.0

(2) **Quality assurance testing required.** The following quality assurance tests are the minimum required tests for each of the following marijuana products, respectively. Licensees and certified labs may elect to do multiple quality assurance tests on the same lot or testing for mycotoxin, pesticides, or heavy metals pursuant to chapter 246-70 WAC.

(a) **General quality assurance testing requirements for certified labs.**

(i) Certified labs must record an acknowledgment of the receipt of samples from producers or processors in the WSLCB seed to sale traceability system. Certified labs must also verify if any unused portion of the sample was destroyed or returned to the licensee after the completion of required testing.

(ii) Certified labs must report quality assurance test results directly to the WSLCB traceability system when quality assurance tests for the field of testing are required within twenty-four hours of completion of the test(s).

(iii) Certified labs must fail a sample if the results for any limit test are above allowable levels regardless of whether the limit test is required in the testing tables in this section.

(b) **Marijuana flower lots and other material lots.** Marijuana flower lots or other material lots require the following quality assurance tests:

<b>Product</b>	<b>Test(s) Required</b>
Lots of marijuana flowers or other material that will not be extracted	1. Moisture content 2. Potency analysis 3. Foreign matter inspection 4. Microbiological screening 5. Mycotoxin screening

(c) **Intermediate products.** Intermediate products must meet the following requirements related to quality assurance testing:

(i) All intermediate products must be homogenized prior to quality assurance testing;

(ii) For the purposes of this section, a batch is defined as a single run through the extraction or infusion process;

(iii) A batch of marijuana mix may not exceed five pounds and must be chopped or ground so no particles are greater than 3 mm; and

(iv) All batches of intermediate products require the following quality assurance tests:

<b>Product</b>	<b>Test(s) Required Intermediate Products</b>
Marijuana mix	1. Moisture content* 2. Potency analysis 3. Foreign matter inspection* 4. Microbiological screening 5. Mycotoxin screening
Concentrate or extract made with hydrocarbons (solvent based made using n-butane, isobutane, propane, heptane, or other solvents or gases approved by the board of at least 99% purity)	1. Potency analysis 2. Mycotoxin screening* 3. Residual solvent test
Concentrate or extract made with a CO <sub>2</sub> extractor like hash oil	1. Potency analysis 2. Mycotoxin screening* 3. Residual solvent test
Concentrate or extract made with ethanol	1. Potency analysis 2. Mycotoxin screening* 3. Residual solvent test
Concentrate or extract made with approved food grade solvent	1. Potency analysis 2. Microbiological screening* 3. Mycotoxin screening* 4. Residual solvent test
Concentrate or extract (nonsolvent) such as kief, hash, rosin, or bubble hash	1. Potency analysis 2. Microbiological screening 3. Mycotoxin screening
Infused cooking oil or fat in solid form	1. Potency analysis 2. Microbiological screening* 3. Mycotoxin screening*

\* Field of testing is only required if using lots of marijuana flower and other plant material that has not passed QA testing.

(d) **End products.** All marijuana, marijuana-infused products, marijuana concentrates, marijuana mix packaged, and marijuana mix infused sold from a processor to a retailer require the following quality assurance tests:

<b>Product</b>	<b>Test(s) Required End Products</b>
Infused solid edible	Potency analysis
Infused liquid (like a soda or tonic)	Potency analysis
Infused topical	Potency analysis
Marijuana mix packaged (loose or rolled)	Potency analysis
Marijuana mix infused (loose or rolled)	Potency analysis
Concentrate or marijuana-infused product for inhalation	Potency analysis

(e) End products consisting of only one intermediate product that has not been changed in any way are not subject to potency analysis.

(3) No lot of usable flower, batch of marijuana concentrate, or batch of marijuana-infused product may be sold or transported until

the completion and successful passage of quality assurance testing as required in this section, except:

(a) Business entities with multiple locations licensed under the same UBI number may transfer marijuana products between the licensed locations under the same UBI number prior to quality assurance testing; and

(b) Licensees may wholesale and transfer batches or lots of flower and other material that will be extracted and marijuana mix and nonsolvent extracts for the purposes of further extraction prior to completing required quality assurance testing. Licensees may wholesale and transfer failed lots or batches to be extracted pursuant to subsection (5) of this section.

(4) **Samples, lots, or batches that fail quality assurance testing.**

(a) Upon approval by the WSLCB, failed lots or batches may be used to create extracts. After processing, the extract must pass all quality assurance tests required in this section before it may be sold.

(b) **Retesting.** At the request of the producer or processor, the WSLCB may authorize a retest to validate a failed test result on a case-by-case basis. All costs of the retest will be borne by the producer or the processor requesting the retest. Potency retesting will generally not be authorized.

(c) **Remediation.** Producers and processors may remediate failed harvests, lots, or batches so long as the remediation method does not impart any toxic or deleterious substance to the usable marijuana, marijuana concentrates, or marijuana-infused product. Remediation solvents or methods used on the marijuana product must be disclosed to a licensed processor the producer or producer/processor transfers the products to; a licensed retailer carrying marijuana products derived from the remediated harvest, lot, or batch; or consumer upon request. The entire harvest, lot, or batch the failed sample(s) were deducted from must be remediated using the same remediation technique. No remediated harvest, lots or batches may be sold or transported until the completion and successful passage of quality assurance testing as required in this section.

(5) **Referencing.** Certified labs may reference samples for mycotoxin, heavy metals, and pesticides testing to other certified labs by subcontracting for those fields of testing. Labs must record all referencing to other labs on a chain-of-custody manifest that includes, but is not limited to, the following information: Lab name, certification number, transfer date, address, contact information, delivery personnel, sample ID numbers, field of testing, receiving personnel.

(6) Certified labs are not limited in the amount of usable marijuana and marijuana products they may have on their premises at any given time, but a certified lab must have records proving all marijuana and marijuana-infused products in the certified lab's possession are held only for the testing purposes described in this section.

(7) Upon the request of the WSLCB or its designee, a licensee or a certified lab must provide an employee of the WSLCB or their designee samples of marijuana or marijuana products or samples of the growing medium, soil amendments, fertilizers, crop production aids, pesticides, or water for random compliance checks. Samples may be screened for pesticides and chemical residues, unsafe levels of heavy metals, and used for other quality assurance tests deemed necessary by the WSLCB.

[Statutory Authority: RCW 69.50.342 and 69.50.345. WSR 17-12-032, §  
314-55-102, filed 5/31/17, effective 8/31/17; WSR 16-11-110, §  
314-55-102, filed 5/18/16, effective 6/18/16; WSR 15-11-107, §  
314-55-102, filed 5/20/15, effective 6/20/15; WSR 14-07-116, §  
314-55-102, filed 3/19/14, effective 4/19/14. Statutory Authority: RCW  
69.50.325, 69.50.331, 69.50.342, 69.50.345. WSR 13-21-104, §  
314-55-102, filed 10/21/13, effective 11/21/13.]