

**2-3901. Commercial industrial hemp act; citation; definitions.** (a) K.S.A. 2019 Supp. 2-3901 et seq., and amendments thereto, shall be known and may be cited as the commercial industrial hemp act.

(b) As used in the commercial industrial hemp act:

(1) "Commercial" means the cultivation or production of industrial hemp for purposes other than research as authorized under K.S.A. 2019 Supp. 2-3906, and amendments thereto.

(2) "Delta-9 tetrahydrocannabinol concentration" means the combined percentage of delta-9 tetrahydrocannabinol and its optical isomers, their salts and acids, and salts of their acids, reported as free THC:

(A) On a dry weight basis, of any part of the plant *cannabis sativa* L.; or

(B) on a percentage by weight basis in hemp products, waste or substances resulting from the production or processing of industrial hemp.

(3) "Effective disposal" includes, but is not limited to:

(A) Destruction; or

(B) any other method of disposing of industrial hemp or hemp products found to be in violation of this act that is permitted under the provisions of 7 U.S.C. § 1621 et seq. and any rules and regulations adopted thereunder.

(4) "Hemp products" means all products made from industrial hemp, including, but not limited to, cloth, cordage, fiber, food, fuel, paint, paper, particleboard, plastics, seed, seed meal and seed oil for consumption and authorized seed or clone plants for cultivation, if the seeds originate from industrial hemp varieties.

(5) "Hemp producer" means any individual, licensed or otherwise, engaging in the cultivation or production of industrial hemp for commercial purposes pursuant to K.S.A. 2019 Supp. 2-3906, and amendments thereto.

(6) "Hemp processor" means a person registered under K.S.A. 2019 Supp. 2-3907, and amendments thereto, to process and manufacture industrial hemp and hemp products.

(7) "Industrial hemp" means all parts and varieties of the plant *cannabis sativa* L., whether growing or not, that contain a delta-9 tetrahydrocannabinol concentration of not more than 0.3% on a dry weight basis.

(8) "Person" means an individual, corporation, partnership, association, joint stock company, trust, unincorporated organization or any similar entity or any combination of the foregoing acting in concert.

(9) "Seed research" means research conducted to develop or recreate better strains of industrial hemp, particularly for the purpose of seed production.

(10) "State educational institution" means the university of Kansas, Kansas state university, Wichita state university, Emporia state university, Pittsburg state university and Fort Hays state university.

(11) "Authorized seed or clone plants" means a source of industrial hemp seeds or clone plants that:

(A) Has been certified by a certifying agency, as defined by K.S.A. 2-1415, and amendments thereto;

(B) has been produced from plants that were tested during the active growing season and were found to produce industrial hemp having a tetrahydrocannabinol concentration that does not exceed 0.3% on a dry weight basis and has been certified in writing by the grower or distributor of such seeds or clone plants to possess such qualities; or

(C) meets any other authorized standards approved by the Kansas department of agriculture through rules and regulations, except that no seed or clone plants shall be considered authorized seed or clone plants if they do not meet any standard adopted by the United States department of agriculture pursuant to 7 U.S.C. § 1621 et seq.

**History:** L. 2018, ch. 62, § 1; L. 2019, ch. 37, § 7; Apr. 18.



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(B) on a percentage by weight basis in hemp products, waste or substances resulting from the production or processing of industrial hemp.

(3) "Effective disposal" includes, but is not limited to:

(A) Destruction; or

(B) any other method of disposing of industrial hemp or hemp products found to be in violation of this act that is permitted under the provisions of 7 U.S.C. § 1621 et seq. and any rules and regulations adopted thereunder.

(4) "Hemp products" means all products made from industrial hemp, including, but not limited to, cloth, cordage, fiber, food, fuel, paint, paper, particleboard, plastics, seed, seed meal and seed oil for consumption and authorized seed or clone plants for cultivation, if the seeds originate from industrial hemp varieties.

(5) "Hemp producer" means any individual, licensed or otherwise, engaging in the cultivation or production of industrial hemp for commercial purposes pursuant to K.S.A. 2019 Supp. 2-3906, and amendments thereto.

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(8) "Person" means an individual, corporation, partnership, association, joint stock company, trust, unincorporated organization or any similar entity or any combination of the foregoing acting in concert.

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(A) Has been certified by a certifying agency, as defined by K.S.A. 2-1415, and amendments thereto;

(B) has been produced from plants that were tested during the active growing season and were found to produce industrial hemp having a tetrahydrocannabinol concentration that does not exceed 0.3% on a dry weight basis and has been certified in writing by the grower or distributor of such seeds or clone plants to possess such qualities; or

(C) meets any other authorized standards approved by the Kansas department of agriculture through rules and regulations, except that no seed or clone plants shall be considered authorized seed or clone plants if they do not meet any standard adopted by the United States department of agriculture pursuant to 7 U.S.C. § 1621 et seq.

**History:** L. 2018, ch. 62, § 1; L. 2019, ch. 37, § 7; Apr. 18.



**2-3902. Same; industrial hemp research and cultivation; licensure; criminal history record checks; rules and regulations; fees; reports to the legislature.** (a) The Kansas department of agriculture, alone or in coordination with a state educational institution, may cultivate industrial hemp grown from authorized seed or clone plants and promote the research and development of industrial hemp, in accordance with 7 U.S.C. § 5940. This research may include:

(1) Oversight and analysis of growth of industrial hemp to conduct agronomy research and analysis of required soils, growing conditions and harvest methods relating to the production of various varieties of industrial hemp that may be suitable for various commercial hemp products;

(2) seed research on various types of industrial hemp that are best suited to be grown in Kansas, including seed availability, creation of hybrid types, in-the-ground variety trials and seed production;

(3) analysis on the economic feasibility of developing an industrial hemp market in various types of industrial hemp that can be grown in Kansas;

(4) analysis on the estimated value-added benefits, including environmental benefits, that Kansas businesses would reap by having an industrial hemp market of Kansas-grown industrial hemp varieties;

(5) a study on the agronomy research conducted worldwide relating to industrial hemp varieties, production and utilization;

(6) a study on the feasibility of attracting federal and private funding for industrial hemp research; and

(7) a pilot program in Russell county, and other counties as determined by the department, for the purpose of economic development, research, cultivation, market analysis, manufacturing and transportation of industrial hemp and industrial hemp products.

(b) In the event that the department acts alone to cultivate industrial hemp grown from authorized seed or clone plants and to promote the research and development of industrial hemp, the secretary of agriculture shall establish an advisory board within the department to review and recommend applications for pilot projects and research proposals to the secretary. The secretary shall not approve any such project or proposal without the recommendation of the advisory board.

(c) The department shall oversee and annually license all individuals participating in the cultivation, growth, research, oversight, study, analysis, transportation, processing or distribution of authorized seed or clone plants or industrial hemp pursuant to this section. The department shall establish fees for licenses, license renewals and other necessary expenses to defray the cost of implementing and operating the provisions of this section in this state on an ongoing basis. Any modification fee established by the department for any requested change to a license that was previously issued by the department under this section shall not exceed \$50.

(d) (1) The department shall require, as a qualification for initial or continuing licensure, all individuals seeking a license or license renewal under the research program established under this section to be fingerprinted and to submit to a state and national criminal history record check. The fingerprints shall be used to identify the individual and to determine whether the individual has a record of criminal history in this state or any other jurisdiction. The department is authorized to submit the fingerprints to the Kansas bureau of investigation and the federal bureau of investigation for a state and national criminal history record check. The department may use the information obtained from fingerprinting and the criminal history record check for purposes of verifying the identification of the individual and for making an official determination of the qualifications for initial or continuing licensure pursuant to this section and rules and regulations promulgated hereunder. Disclosure or use of any information received by the department for any purpose other than the purposes provided for in this section shall be a class A misdemeanor and shall constitute grounds for removal from office or termination of employment.

(2) An individual who has been convicted of a felony violation of article 57 of chapter 21 of the Kansas Statutes Annotated, and amendments thereto, or a substantially similar offense in another jurisdiction, within the immediately preceding 10 years, shall be disqualified from initial or continuing licensure under this section.

(3) The Kansas bureau of investigation may charge a reasonable fee for conducting a criminal history record check.

(4) The individual seeking a license or license renewal under this section shall pay the costs of fingerprinting and the state and national criminal history record checks.

(e) The secretary of agriculture shall promulgate rules and regulations to carry out the provisions of this section on or before December 31, 2019, except that no such promulgated rule or regulation shall concern the recording of license plates. Such rules and regulations shall include, but not be limited to, a requirement that license holders shall have a current license in their possession at all times that they are engaged in the cultivation, growth, research, oversight, study, analysis, transportation, processing or distribution of authorized seed or clone plants or industrial hemp pursuant to this section.

(f) The department shall submit a report to the legislature outlining the steps and timeline to implement a process that would allow individuals and business entities to grow and process industrial hemp in Kansas and to sell industrial hemp in other states. Such report shall be submitted to the senate standing committee on agriculture and natural resources and the house standing committee on agriculture on or before January 14, 2019. The department shall send such committees an annual supplemental report on the continued progress of such process at the beginning of each regular legislative session for the following three years.

(g) Nothing in this section shall be construed to authorize any individual to violate any state or federal law.

(h) The legislature shall review the provisions of this section prior to July 1, 2022.

**History:** L. 2018, ch. 62, § 2; L. 2019, ch. 37, § 8; July 1.



**2-3903. Same; commercial industrial hemp act licensing fee fund.** (a) The alternative crop research act licensing fee fund created in the state treasury shall be renamed the commercial industrial hemp act licensing fee fund and continue to be administered by the secretary of agriculture. All expenditures from the commercial industrial hemp act licensing fee fund shall be made in accordance with appropriation acts upon warrants of the director of accounts and reports issued pursuant to vouchers signed by the secretary of agriculture or the secretary's designee.

(b) Licensing and renewal fees shall be established pursuant to rules and regulations adopted by the secretary under the commercial industrial hemp act. The amounts received for such fees shall be deposited in the state treasury in accordance with K.S.A. 75-4215, and amendments thereto, and shall be credited to the commercial industrial hemp act licensing fee fund.

**History:** L. 2018, ch. 62, § 3; L. 2019, ch. 37, § 9; Apr. 18.



**2-3904. Research program licenses; application deadline extension for 2019 growing season.** The secretary of agriculture shall continue to accept any applications for licensure submitted under the provisions of K.S.A. 2019 Supp. 2-3902, and amendments thereto, for the 2019 growing season from March 1, 2019, through June 1, 2019.

**History:** L. 2019, ch. 37, § 3; Apr. 18.



**2-3905. Commercial industrial hemp act; legislative intent.** (a) It is the intent of the legislature of the state of Kansas that the implementation of the commercial industrial hemp act by the Kansas department of agriculture shall be conducted in the least restrictive manner allowed under federal law.

(b) This section shall be a part of and supplemental to the commercial industrial hemp act, K.S.A. 2019 Supp. 2-3901 et seq., and amendments thereto.

**History:** L. 2019, ch. 37, § 1; Apr. 18.



**2-3906. Commercial industrial hemp plan; requirements for hemp producers; violations by hemp producers; criminal history record checks; license modification fee limit.** (a) The Kansas department of agriculture, in consultation with the governor and attorney general, shall submit a plan to the United States department of agriculture under which the Kansas department of agriculture will monitor and regulate the commercial production of industrial hemp within the state in accordance with 7 U.S.C. § 1621 et seq. and any rules and regulations adopted thereunder.

(b) Such plan shall include the following:

(1) A procedure to maintain relevant information regarding land on which industrial hemp is produced, including a legal description of the land, for a period of not less than three calendar years;

(2) a procedure for testing, using post-decarboxylation or other similarly reliable methods, the delta-9 tetrahydrocannabinol concentration levels of industrial hemp produced;

(3) a procedure for the effective disposal of industrial hemp and hemp products that are found to be in violation of this act;

(4) any licensing requirements or other rules and regulations deemed necessary by the Kansas department of agriculture for the proper monitoring and regulation of industrial hemp cultivation and production for commercial purposes, including, but not limited to, fees for licenses, license renewals and other necessary expenses to defray the cost of implementing and operating the plan on an ongoing basis;

(5) a procedure for the creation of documentation that any person in possession of unprocessed industrial hemp may use to prove to any law enforcement officer that such industrial hemp was lawfully grown under this section;

(6) a procedure for conducting annual inspections of, at a minimum, a random sample of hemp producers to verify that industrial hemp is not produced in violation of this act; and

(7) any other procedures necessary to meet the requirements set forth in 7 U.S.C. § 1621 et seq. and any rules and regulations adopted thereunder.

(c) (1) A hemp producer who negligently violates this section or any rules and regulations adopted hereunder shall not be subject to any state or local criminal enforcement action, but shall comply with the following corrective actions as applicable:

(A) A reasonable date by which the hemp producer shall correct the negligent violation; and

(B) a requirement that the hemp producer shall periodically report to the Kansas department of agriculture on the hemp producer's compliance with this section and rules and regulations adopted hereunder, for a period of not less than the next two calendar years.

(2) A hemp producer who negligently violates this section or any rules and regulations adopted hereunder three times in a five-year period shall be ineligible to produce industrial hemp for a period of five years beginning on the date of the third violation.

(3) The Kansas department of agriculture shall immediately report any violation by a hemp producer with a greater culpable mental state than negligence to the attorney general and such hemp producer shall not be subject to the exemption in subsection (c)(1).

(d) Any individual otherwise eligible to become a licensed hemp producer shall not be eligible to produce industrial hemp if such individual has submitted any materially false information in any application to become a licensed hemp producer.

(e) (1) The department shall require, as a qualification for initial or continuing licensure, all individuals seeking a license or license renewal as a hemp producer under this section to be fingerprinted and to submit to a state and national criminal history record check. The fingerprints shall be used to identify the individual and to determine whether the individual has a record of criminal history in this state or any other jurisdiction. The department is authorized to submit the fingerprints to the Kansas bureau of investigation and the federal bureau of investigation for a state and national criminal history record check. The department may use the information obtained from fingerprinting and the criminal history record check for purposes of verifying the identification of the individual and for making an official determination of the qualifications for initial or continuing licensure as a hemp producer pursuant to this section and rules and regulations promulgated hereunder. Disclosure or use of any information received by



the department for any purpose other than the purposes provided for in the commercial industrial hemp act shall be a class A misdemeanor and shall constitute grounds for removal from office or termination of employment.

(2) An individual who has been convicted of a felony violation of article 57 of chapter 21 of the Kansas Statutes Annotated, and amendments thereto, or a substantially similar offense in another jurisdiction, within the immediately preceding 10 years, shall be disqualified from initial or continuing licensure as a hemp producer under this section.

(3) The Kansas bureau of investigation may charge a reasonable fee for conducting a criminal history record check.

(4) The individual seeking a license or license renewal as a hemp producer under this section shall pay the costs of fingerprinting and the state and national criminal history record checks.

(f) The secretary of agriculture shall promulgate rules and regulations to implement the plan submitted to the United States department of agriculture and to otherwise effectuate the provisions of this section.

(g) Upon the repeal of 7 U.S.C. § 5940 or either the adoption of a federal plan by the United States department of agriculture that allows for the cultivation and production of industrial hemp for commercial purposes within the state or upon the adoption of rules and regulations by the Kansas secretary of agriculture that establish the cultivation and production of industrial hemp for commercial purposes within the state, the Kansas department of agriculture may discontinue the industrial hemp research program established pursuant to K.S.A. 2019 Supp. 2-3902, and amendments thereto.

(h) Any modification fee established by the department for any requested change to a license that was previously issued by the department under this section shall not exceed \$50.

(i) Any licensing or other fees collected pursuant to this section and any rules and regulations adopted hereunder shall be deposited in the commercial industrial hemp act licensing fee fund established by K.S.A. 2019 Supp. 2-3903, and amendments thereto, for all costs of the administration of the commercial production of industrial hemp.

(j) This section shall be a part of and supplemental to the commercial industrial hemp act, K.S.A. 2019 Supp. 2-3901 et seq., and amendments thereto.

**History:** L. 2019, ch. 37, § 2; Apr. 18.

**2-3907. Requirements for hemp processors; registration; penalties; criminal history record checks.** (a) The Kansas department of agriculture shall create and maintain a registry of all hemp processors operating within the state of Kansas.

(b) Any person engaging in the processing of industrial hemp shall register annually with the secretary of agriculture prior to processing industrial hemp, except as provided in subsection (f).

(c) Registration shall expire annually on April 30. A registration fee, not to exceed \$200, shall be established pursuant to rules and regulations adopted by the secretary.

(d) Any person required to register as a hemp processor pursuant to this section shall submit an annual registration application on a form provided by the secretary that shall include, at a minimum:

(1) The full legal name, date of birth, address and telephone number of the applicant. If the applicant is not an individual, the same information shall also be provided for all owners and the individual responsible for all industrial hemp processing and related activities performed by the applicant;

(2) the physical location of any premises that will serve as a part of the applicant's industrial hemp processing operations;

(3) a brief description of the industrial hemp processing methods, activities and products planned for production; and

(4) certification that such applicant has fully complied with the fingerprinting and criminal history record check requirements contained in this section, if applicable. Any such applicant who provides a false statement of compliance with such requirements shall be guilty of a class C nonperson misdemeanor.

(e) The Kansas department of agriculture shall provide an updated list of all hemp processors to the Kansas bureau of investigation and to the county sheriff in each county where a hemp processor is located as often as is reasonably required or requested.

(f) No hemp processor who is licensed under K.S.A. 2019 Supp. 2-3902, and amendments thereto, shall be required to register pursuant to this section, but the secretary shall include such hemp processors in the list of registered hemp processors maintained by the Kansas department of agriculture pursuant to this section.

(g) Fees collected pursuant to this section shall be remitted to the state treasurer in accordance with the provisions of K.S.A. 75-4215, and amendments thereto. Upon receipt of each such remittance, the state treasurer shall deposit the entire amount in the state treasury to the credit of the commercial industrial hemp act licensing fee fund.

(h) Except as provided in subsection (f), it shall be unlawful for any person to operate as a hemp processor without valid registration.

(i) (1) Upon a first conviction for a violation of subsection (h), a person shall be guilty of a class A nonperson misdemeanor.

(2) On a second or subsequent conviction for a violation of subsection (h), a person shall be guilty of a severity level 9, nonperson felony.

(j) (1) A registered hemp processor, or an applicant to become a registered hemp processor, shall request the Kansas bureau of investigation to conduct a state and national criminal history record check on any individual employed or seeking employment under such registered hemp processor or applicant who would be engaged in extraction of cannabinoids, including through the disposal of cannabinoids from industrial hemp, pursuant to K.S.A. 2019 Supp. 2-3909, and amendments thereto. The request for a state and national criminal history record check shall include the following:

(A) The individual's fingerprints; and

(B) a copy of a completed and signed statement furnished by the hemp processor that includes:

(i) A waiver permitting the hemp processor to request and receive a criminal history record check for the purpose of determining the individual's qualification and fitness to process industrial hemp;

(ii) the name, address and date of birth of the individual as it appears on a valid identification document;



(iii) a disclosure of whether or not the individual has ever been convicted of or is the subject of pending charges for a criminal offense and, if convicted, a description of the crime and the result of the conviction; and

(iv) a notice to the individual that they are entitled to obtain a copy of the criminal history record check to challenge the accuracy and completeness of any information contained in any such report before any final determination is made by the hemp processor.

(2) A registered hemp processor, or an applicant to become a registered hemp processor, shall require such individual to be fingerprinted and to submit the fingerprints to the Kansas bureau of investigation and the federal bureau of investigation for a state and national criminal history record check. Such hemp processor or applicant shall use the fingerprints to identify the individual and to determine whether the individual has a record of criminal history in this state or other jurisdictions or countries. The hemp processor may use the information obtained from the fingerprints and such state and national criminal history record checks in the official determination of the qualifications and fitness of the individual to process industrial hemp. Disclosure or use of any information received by the hemp processor for any purpose other than the purposes provided for in the commercial industrial hemp act shall be a class A nonperson misdemeanor.

(3) Local and state law enforcement officers and agencies shall assist the hemp processor in taking and processing such individual's fingerprints as authorized by this section.

(4) The Kansas bureau of investigation shall release all records of the individual's adult convictions and adult convictions from another state, jurisdiction or country, to the hemp processor to make a final determination of the qualification of such individual to process industrial hemp.

(5) An individual who has been convicted of a felony violation of article 57 of chapter 21 of the Kansas Statutes Annotated, and amendments thereto, or a substantially similar offense in another jurisdiction, within the immediately preceding 10 years, shall be disqualified from processing industrial hemp under this section.

(6) A hemp processor shall be solely responsible for making any determination that an individual's criminal history record shows that such individual has been convicted of a crime that bears upon the fitness of such individual to extract cannabinoids from industrial hemp. This section does not require the Kansas bureau of investigation to make such a determination on behalf of any hemp processor.

(7) The Kansas bureau of investigation may charge a reasonable fee for conducting a criminal history record check.

(8) A registered hemp processor, or an applicant to become a registered hemp processor, shall pay the costs of fingerprinting and the state and national criminal history record checks for individuals seeking employment under such hemp processor or applicant.

(k) The secretary shall promulgate rules and regulations to carry out the provisions of this section.

(l) This section shall be a part of and supplemental to the commercial industrial hemp act, K.S.A. 2019 Supp. 2-3901 et seq., and amendments thereto.

**History:** L. 2019, ch. 37, § 4; Apr. 18.

**2-3908. Unlawful hemp products; penalties; exceptions.** (a) (1) It shall be unlawful for any of the following hemp products to be manufactured, marketed, sold or distributed by any person in the state of Kansas:

- (A) Cigarettes containing industrial hemp;
- (B) cigars containing industrial hemp;
- (C) chew, dip or other smokeless material containing industrial hemp;
- (D) teas containing industrial hemp;
- (E) liquids, solids or gases containing industrial hemp for use in vaporizing devices; and
- (F) any other hemp product intended for human or animal consumption containing any ingredient derived from industrial hemp that is prohibited pursuant to the Kansas food, drug and cosmetic act, K.S.A. 65-636 et seq., and amendments thereto, and the commercial feeding stuffs act, K.S.A. 2-1001 et seq., and amendments thereto. This subparagraph shall not otherwise prohibit the use of any such ingredient, including cannabidiol oil, in such hemp products.

(2) As used in this subsection:

(A) "Human or animal consumption" means:

- (i) Ingested orally; or
- (ii) applied by any means such that an ingredient derived from industrial hemp enters the human or animal body.

(B) "Intended for human or animal consumption" means:

- (i) Designed by the manufacturer for human or animal consumption;
- (ii) marketed for human or animal consumption; or
- (iii) distributed with the intent that it be used for human or animal consumption.

(b) It shall be unlawful for any of the following hemp products to be marketed, sold or distributed to any person in Kansas who is not registered as a hemp processor pursuant to K.S.A. 2019 Supp. 2-3907, and amendments thereto, or who does not possess a license by the Kansas department of agriculture under any commercial plan established pursuant to K.S.A. 2019 Supp. 2-3906, and amendments thereto, or the research program established pursuant to K.S.A. 2019 Supp. 2-3902, and amendments thereto:

- (1) Industrial hemp buds;
- (2) ground industrial hemp floral material; or
- (3) ground industrial hemp leaf material.

(c) (1) Upon a first conviction for a violation of this section, a person shall be guilty of a class A nonperson misdemeanor.

(2) On a second or subsequent conviction for a violation of this section, a person shall be guilty of a severity level 9, nonperson felony.

(d) Nothing in this section shall prohibit:

- (1) The use of any hemp product for research purposes by a state educational institution or affiliated entity; or
- (2) the production, use or sale of any hemp product that is otherwise not prohibited by state or federal law.

(e) This section shall be a part of and supplemental to the commercial industrial hemp act, K.S.A. 2019 Supp. 2-3901 et seq., and amendments thereto.

**History:** L. 2019, ch. 37, § 5; Apr. 18.



**2-3909. Disposal of waste by-products.** (a) (1) All solid waste, as defined in K.S.A. 65-3402, and amendments thereto, and all hazardous waste, as defined in K.S.A. 65-3430, and amendments thereto, resulting from the cultivation, production or processing of industrial hemp under the commercial industrial hemp act shall be managed in accordance with all applicable solid and hazardous waste laws and regulations and the requirements of subsection (a)(2).

(2) (A) If any such waste can be used in the same manner as, or has the appearance of, a controlled substance, as defined in K.S.A. 65-4101, and amendments thereto, all such waste shall be rendered unusable and unrecognizable before the waste is transported or disposed.

(B) This requirement shall not apply to waste that is managed as a hazardous waste and sent to a hazardous waste facility, as defined in K.S.A. 65-3430, and amendments thereto.

(3) For the purposes of this section, "unusable and unrecognizable" means that such waste can not be used in the same manner as, and does not have the appearance of, a controlled substance, as defined in K.S.A. 65-4101, and amendments thereto.

(b) Any violation of this section shall be considered an unlawful act for the purposes of K.S.A. 65-3409, and amendments thereto.

(c) This section shall be a part of and supplemental to the commercial industrial hemp act, K.S.A. 2019 Supp. 2-3901 et seq., and amendments thereto.

**History:** L. 2019, ch. 37, § 6; Apr. 18.

**K.A.R. 4-34-22. License required to cultivate or produce industrial hemp for commercial purposes.** (a) K.A.R. 4-34-22 through 4-34-30 shall apply only to the commercial production of industrial hemp pursuant to K.S.A. 2-3901 et seq., and amendments thereto, and, unless otherwise stated, shall not apply to research conducted as part of the pilot program pursuant to K.S.A. 2-3902, and amendments thereto, and regulated by K.A.R. 4-34-2 through 4-34-21.

(b) No individual may cultivate or produce industrial hemp for commercial purposes without a license issued by the secretary. A license shall not be required for employees, agents, contractors, or volunteers of a licensee.

(c) Only individuals shall be eligible to apply for licenses to cultivate or produce industrial hemp.

(d) Each individual who applies for a license to cultivate or produce industrial hemp shall be required to submit to a fingerprint-based state and national criminal history record check to verify that the individual has not been convicted of a felony violation of K.S.A. 2019 Supp. 21-5701 et seq., and amendments thereto, or a substantially similar offense in another jurisdiction, within the 10 years immediately preceding submission of that individual's application.

(e)(1) Each individual submitting a license application shall submit the application on a form provided by the secretary, which shall include the following:

(A) The individual's full legal name and date of birth;

(B) the individual's current mailing address, telephone number, and electronic-mail address;

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(C) the legal description and global positioning system coordinates of the entrance to the proposed licensed growing area and the entrance to each lot that will be used to cultivate or produce industrial hemp and a map of the proposed licensed growing area and each lot;

(D) the total number of acres or square feet that will be used to cultivate or produce industrial hemp;

(E) the number of acres or square feet that will be used to cultivate or produce industrial hemp in each lot;

(F) the variety of industrial hemp to be cultivated or produced in each lot;

(G) a completed fingerprint card for submission to the Kansas bureau of investigation;  
and

(H) any other relevant information requested by the secretary.

(2) Each individual submitting a license application shall include with the application a \$100 application fee and the fee established by the Kansas bureau of investigation for performing a state and national criminal history record check. A single criminal history record check conducted in accordance with the act may be used to satisfy the act's criminal history record check requirement for multiple licenses in a single license year.

(f) All license applications shall be submitted no later than March 15 of each year in which an applicant intends to grow industrial hemp. Any individual who submits a license application after March 15, 2020 may be granted a license if good cause is shown and the secretary determines that granting the license is necessary to assist with the transition from the pilot program to the commercial industrial hemp program during 2020.

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(g) Each license shall allow the cultivation and production of industrial hemp within one licensed growing area.

(h) Upon approval of a license application by the secretary, the applicant shall submit a license fee of \$1,200 to the secretary within 15 days of notice of the approval.

(i) All licenses shall expire annually on December 31.

(j) In addition to providing the department with the information required by this regulation, each individual who is issued a license shall report the following directly to the United States department of agriculture farm service agency for each license:

(1) The street address and, to the extent practicable, the global positioning system coordinates for each growing area and for each lot or greenhouse where industrial hemp will be produced;

(2) the number of acres that will be used to cultivate or produce industrial hemp;

(3) the assigned license number; and

(4) any other information required by the United States department of agriculture.

(k) Acceptance of a license shall constitute a grant of authority by each licensee allowing the secretary to supply information to the United States department of agriculture and post information on the department's web site, including the industrial hemp producer license number, the full legal name of the licensee, the licensee's contact information, descriptions of all locations identified for cultivating or producing industrial hemp, and any information related to modifications to ensure that the information remains accurate.

(l) Each licensee shall be held responsible for any plant cultivated or produced in violation of the act and for the actions of all employees, agents, contractors, and volunteers

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JUL 31 2020

DIVISION OF THE BUDGET

APPROVED

AUG 05 2020

DEPT. OF ADMINISTRATION

APPROVED

SEP 21 2020

ATTORNEY GENERAL



engaged in the cultivation or production of industrial hemp under the supervision or direction of, or otherwise in conjunction with, the licensee. Each licensee shall be subject to the same disciplinary actions for a violation of the act committed by any employee, agent, contractor, or volunteer of that licensee as if the licensee had committed the violation.

(m) Each licensee requesting a license modification after issuance of a license shall submit the modification request to the secretary on a form provided by the secretary. Each modification request form shall be accompanied by a \$50 fee. Upon the secretary's review and approval of the modification request, a modified license shall be issued and may include any additional terms and conditions that the secretary deems necessary to implement the requested modification and to protect the public health, safety, and welfare. If the secretary denies the modification request, the licensee shall remain subject to the terms of the original license.

(n) Each license shall be nontransferable, unless the secretary determines that a transfer is necessary because the licensee dies or becomes disabled or because an individual who is an employee or agent of a bank, financial institution, or other creditor that has a legal right to take possession of industrial hemp for the purposes of settling a debt is required to obtain a license to do so. A license that is transferable may be transferred to the individual requesting the transfer upon that individual's submission of a modification request, a \$50 modification fee, the fee established by the Kansas bureau of investigation for performing a state and national criminal history record check, and satisfactory completion of a fingerprint-based state and national criminal history record check. A modification request shall be submitted within 60 days of the licensee's death or within 60 days of the date that the right of the bank, financial institution, or other creditor to take possession of the industrial hemp arises. If a modification request is not

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SEP 21 2020

submitted within the time frame required by this regulation, all industrial hemp being cultivated or produced pursuant to the license shall be subject to an order to be destroyed. The individual applying for the transfer shall assume the full liability for all of the previous licensee's actions related to the cultivation or production of hemp.

(o) Each individual who materially falsifies any information in a license application or modification request shall be ineligible to receive a license to cultivate or produce industrial hemp pursuant to the act. (Authorized by K.S.A. 2019 Supp. K.S.A. 2-3906; implementing K.S.A. 2019 Supp. 2-3903 and 2-3906; effective P-\_\_\_\_\_.)

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AUG 17 2020

DIVISION OF THE BUDGET

APPROVED

AUG 17 2020

DEPT. OF ADMINISTRATION

APPROVED

SEP 21 2020

ATTORNEY GENERAL



**K.A.R. 4-34-23. Planting and pre-harvest requirements.** (a) All industrial hemp cultivated or produced shall have originated from authorized seed or clone plants.

(b) Each licensee shall maintain written certification for all authorized seed or clone plants cultivated or produced, which shall consist of either of the following:

(1) A certificate of analysis, or a similar document, stating that the source of the authorized seed or clone plants was cultivated or produced with a delta-9 tetrahydrocannabinol concentration less than 0.3 percent on a dry-weight basis during the most recent growing season; or

(2) documentation that the authorized seed or clone plants are certified pursuant to K.S.A. 2-1415 et seq., and amendments thereto.

(c) All industrial hemp seed shall be considered agricultural seed. Before selling agricultural seed in Kansas, each individual shall obtain a license pursuant to K.S.A. 2-1415 et seq., and amendments thereto.

(d) Each licensee shall submit a planting report to the department within 15 days after each planting, including replanting seeds or propagules or establishing plants. Each planting report shall identify the following:

(1) The official name of the industrial hemp variety that was cultivated or produced in each lot;

(2) the global positioning system coordinates for the licensed growing area and each lot where industrial hemp plants, plant parts, grain, or seeds are being cultivated or produced;

(3) the total number of acres planted in the licensed growing area;

(4) the number of acres planted in each lot; and

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MAY 07 2020

DIVISION OF THE BUDGET

APPROVED

MAY 08 2020

DEPT. OF ADMINISTRATION

APPROVED

SEP 21 2020

ATTORNEY GENERAL

(5) a statement of the intended end-use for all industrial hemp plants, plant parts, grain, or seeds being cultivated or produced.

(e) Before harvesting industrial hemp, each licensee shall provide the secretary at least 30 days' notice of the intended harvest date on a form provided by the secretary and, if the harvest does not begin on that date, shall provide an updated notice of the anticipated harvest date before harvesting any industrial hemp. Failure to provide notice of the harvest may result in the revocation of an existing hemp producer license and the denial of future hemp producer licenses. Each pre-harvest report shall identify the following:

- (1) The global positioning system coordinates of the entrance to the licensed growing area and each lot where industrial hemp plants are intended for harvest;
- (2) the total number of acres planted in the licensed growing area subject to harvest;
- (3) the number of acres planted in each lot subject to harvest;
- (4) the planting date for each lot;
- (5) the total number of acres intended for harvest in the licensed growing area, if different from the number of acres intended for harvest in the lot;
- (6) the number of acres intended for harvest in each lot;
- (7) the intended harvest date for each lot;
- (8) the official name of the industrial hemp variety that is intended for harvest from each lot; and
- (9) a statement of the intended end-use for all industrial hemp plants, plant parts, grain, or seeds that will be harvested from each lot.

APPROVED

MAY 07 2020

APPROVED

MAY 08 2020

APPROVED

SEP 21 2020

DIVISION OF THE BUDGET DEPT. OF ADMINISTRATION ATTORNEY GENERAL



(f) If two or more harvests will be conducted within a licensed growing area or lot within a license year, the licensee shall notify the department of each intended harvest date at least 30 days before the intended harvest date. The primary licensee shall pay the subsequent sampling fees and testing fees for each harvest conducted after the initial harvest of a lot.

(g) Each licensee shall maintain records regarding the source of all industrial hemp cultivated or produced and records regarding the disposition of all industrial hemp cultivated or produced for three years and shall present those records to the secretary upon request.

(Authorized by and implementing K.S.A. 2019 Supp. 2-3906; effective P-\_\_\_\_\_.)

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MAY 07 2020

DIVISION OF THE BUDGET

APPROVED

MAY 08 2020

DEPT. OF ADMINISTRATION

APPROVED

SEP 21 2020

ATTORNEY GENERAL

**K.A.R. 4-34-24. Sampling, testing, and harvest requirements.** (a) No more than 30 days before any industrial hemp cultivated or produced pursuant to the act is harvested, each licensee shall allow a sample to be collected by the secretary for testing, using post-decarboxylation or any other similarly reliable method, to determine the delta-9 tetrahydrocannabinol concentration of industrial hemp cultivated or produced. A licensee shall not harvest any industrial hemp before receiving notice that testing of the samples has shown a delta-9 tetrahydrocannabinol concentration of less than 0.3 percent on a dry-weight basis and that the licensee may harvest the industrial hemp.

(b) Each licensee shall complete each harvest of industrial hemp plants, plant parts, grain, or seeds within 30 days of sampling.

(c) If a licensee fails to harvest all of the industrial hemp plants, plant parts, grain, or seeds within the time frame specified in subsection (b), the licensee shall perform one of the following:

(1) Notify the department that harvest has not occurred within seven days after the expiration of the time frame specified in subsection (b), request that the department collect a subsequent pre-harvest sample, and pay the required sampling and testing fees; or

(2) notify the department that harvest has not occurred within seven days after the expiration of the time frame specified in subsection (b) and inform the department of the date by which the licensee intends to effectively dispose of the industrial hemp plants, plant parts, grain, or seeds. The licensee shall conduct effective disposal no more than seven days after the licensee informs the department that harvest has not occurred and shall notify the department of any change in the effective disposal date. Effective disposal of industrial hemp plants, plant parts,



grain, or seeds shall occur by the licensee and at the licensee's expense. All volunteer plants within and adjacent to the licensed growing area shall be effectively disposed of during the current license year and for at least three years after the last reported date of planting. If effective disposal of industrial hemp plants, plant parts, grain, or seeds occurs, no refund shall be issued for any fees paid by a licensee, the cost of effective disposal, or the value of the crop.

(d) Each licensee shall submit a harvest report to the department no more than 15 days after each harvest of industrial hemp plants, plant parts, grain, or seeds is completed for each lot. Each harvest report shall identify the following:

(1) The global positioning system coordinates of the entrance to the licensed growing area and each lot where industrial hemp plants were harvested;

(2) the total number of acres planted in the licensed growing area;

(3) the number of acres planted in each lot;

(4) the planting date for each lot;

(5) the total number of acres harvested from the licensed growing area;

(6) the number of acres harvested from each lot;

(7) the harvest date for each lot;

(8) the official name of the industrial hemp variety harvested from each lot; and

(9) a statement of intended end-use for all industrial hemp plants, plant parts, grain, or seeds harvested from each lot.

(e) Industrial hemp shall be subject to post-harvest sampling and testing by the secretary. Each licensee shall agree to provide the secretary access to any harvested industrial hemp or to provide the secretary with a copy of the bill of lading and, if available, a certificate of analysis or

similar document provided for any industrial hemp already sold or transferred to another person. All samples collected by the secretary shall be subject to testing, using post-decarboxylation or any other similarly reliable method, of delta-9 tetrahydrocannabinol concentration of industrial hemp produced. A licensee whose industrial hemp is sampled after it is harvested shall not sell, transfer, or transport any industrial hemp harvested from the licensed growing area where samples were collected until that licensee has received notice from the department that testing of the samples has shown a delta-9 tetrahydrocannabinol content of less than 0.3 percent on a dry-weight basis.

(f) Each licensee shall be assessed a \$225 fee for the required pre-harvest sample collected and tested by the secretary.

(g) At any time other than at the time of the required pre-harvest sample collected and tested by the secretary, a licensee may request that the secretary collect a sample and test the delta-9 tetrahydrocannabinol concentration, subject to a testing fee of \$225 for each test and additional costs assessed for the secretary's travel time and mileage.

(h) All samples collected by the secretary shall become the property of the secretary, and no compensation shall be owed to any licensee.

(i) Any licensee may request a test from a private laboratory at any time. However, test results from private laboratories shall not be considered official and shall not be substituted for a sample collected and tested by the secretary, and each licensee shall be responsible for the costs of testing by a private laboratory.

(j) Each sample collected and tested by the secretary and found to contain a delta-9 tetrahydrocannabinol concentration greater than 0.3 percent on a dry-weight basis shall result in



the hemp being classified as cultivated or produced in violation of the act and shall result in the issuance of a failing report of analysis. Hemp that receives a failing report of analysis may be eligible to be remediated pursuant to K.A.R. 4-34-25.

(k) Within seven days of notice of the failing report of analysis, any licensee may request, on a form provided by the secretary, an additional test by the secretary. The request shall include payment of a retesting fee of \$225 and any additional costs assessed for the secretary's travel time and mileage. If a licensee requests an additional test and the sample collected and tested pursuant to this subsection is found to contain a delta-9 tetrahydrocannabinol concentration greater than 0.3 percent on a dry-weight basis, then all plants in the licensed growing area shall be effectively disposed of as required by K.A.R. 4-34-25 or, if eligible, remediated pursuant to K.A.R. 4-34-25.

(l) For each licensee who is issued an order to effectively dispose of plants, one of the following requirements shall apply:

(1) The licensee shall be subject to a corrective action plan as specified in K.A.R. 4-34-29 and reported to the appropriate state or local law enforcement agency if the violation is deemed negligent.

(2) The licensee shall be reported to the United States department of agriculture, the office of the Kansas attorney general, the office of the United States attorney for the district of Kansas, and the appropriate state or local law enforcement agency if the violation is the result of a culpable mental state greater than negligence. If any plants are tested by the secretary and found to contain a delta-9 tetrahydrocannabinol concentration of greater than 2.0 percent, the

licensee responsible for those plants shall be presumed to have acted with a culpable mental state greater than negligence.

(m) Except as provided in K.A.R. 4-34-28, each licensee or an authorized representative of each licensee shall be present whenever the secretary collects a sample of industrial hemp cultivated or produced pursuant to the act and whenever a compliance inspection is conducted pursuant to this regulation. (Authorized by K.S.A. 2020 Supp. 2-3906; implementing K.S.A. 2020 Supp. 2-3903, as amended by L. 2021, ch. 76, sec. 4, and 2-3906; effective Jan. 8, 2021; amended, T-\_\_\_\_\_, \_\_\_\_\_.)



**K.A.R. 4-34-25. Remediation; effective disposal; violations.** (a) All hemp that is deemed to be in violation of the act for any reason or that contains a delta-9 tetrahydrocannabinol concentration greater than 0.3 percent on a dry-weight basis shall, by order of the secretary, be subject to effective disposal or remediation.

(b) Remediation shall not be allowed for any hemp for which the secretary has not approved a remediation plan. Hemp for which remediation is not allowed shall be effectively disposed of as specified in this regulation.

(c) Remediation shall include any method approved by the United States department of agriculture and may include either of the following:

(1) Separating and removing all flowers and floral materials from the stalks, leaves, and seeds of all plants or plant parts, which may include removal by hand or mechanical removal; or

(2) shredding the entirety of all plants or plant parts into hemp biomass, which may be accomplished with shredders, composters, specialty mechanical equipment, or similar means.

(d) Seeds removed from hemp plants or contained in hemp biomass as a result of remediation shall not be used for propagation purposes.

(e) Each remediation plan or request to submit a remediation plan shall be submitted to the secretary before the expiration of the 10-day period following the licensee's receipt of notice that effective disposal is required as specified in subsection (q).

(f) Each remediation plan submitted to the secretary pursuant to this regulation shall include the following, at a minimum:

(1) The date that remediation will begin;

(2) the approximate date that remediation will be completed;

- (3) the total number of acres that will be remediated;
- (4) the intended end-use of all plants or plant parts to be remediated;
- (5) the location where each plant or plant part will be stored before and after remediation and the location where remediated material will be stored following remediation;
- (6) the method or methods of remediation intended to be used; and
- (7) any other information that is relevant to the circumstances surrounding the cultivation or production of the hemp proposed to be remediated or the intended remediation plan and that the secretary requests.

(g) Any remediation plan that does not contain all required information may be denied or returned to the licensee. Any remediation plan may be denied at the discretion of the secretary, based on the circumstances surrounding the cultivation or production of the hemp proposed to be remediated.

(h) Hemp for which a failing report of analysis is issued may be remediated by the licensee upon the secretary's approval of the remediation plan submitted by the licensee, if the most recent sampling and testing conducted showed the hemp to have a delta-9 tetrahydrocannabinol concentration of 1.0 percent or less on a dry-weight basis.

(i) Any licensee may request permission from the secretary to submit a remediation plan for any hemp for which a failing report of analysis is issued if the most recent sampling and testing conducted showed the hemp to have a delta-9 tetrahydrocannabinol concentration greater than 1.0 percent but not greater than 2.0 percent on a dry-weight basis. If the secretary agrees to review a remediation plan based upon the circumstances surrounding the production or



cultivation of the hemp, then the industrial hemp may be remediated upon approval of the plan submitted by the licensee.

(j) Each licensee who conducts remediation of any hemp shall allow representatives of the secretary to be present during the remediation. Proof of remediation may be required to be provided to the secretary.

(k) All plant material that is undergoing remediation shall be clearly labeled to indicate that the plant material is remediated hemp biomass and to verify the source of all of the hemp that comprises the remediated material. Remediated hemp biomass shall require a bill of lading pursuant to K.A.R. 4-34-26, which shall identify the material as remediated hemp biomass and identify the source of all material used in the remediation.

(l) All plant material resulting from remediation shall be subject to postremediation sampling and testing and shall be required to be effectively disposed of as specified in this regulation and prohibited from entering commerce if the final postremediation testing performed shows the plant material to have a delta-9 tetrahydrocannabinol concentration of greater than 0.3 percent on a dry-weight basis.

(m) Remediation may be conducted as many times as is necessary to achieve a delta-9 tetrahydrocannabinol concentration of 0.3 percent or less on a dry-weight basis. However, all hemp biomass that is not successfully remediated so as to have a delta-9 tetrahydrocannabinol concentration of 0.3 percent or less on a dry-weight basis within 60 days of the issuance of the final failing report of analysis for any hemp that comprises the remediated hemp biomass shall be effectively disposed of as specified in this regulation.

(n) Hemp for which a failing report of analysis is issued and for which the most recent testing conducted shows a delta-9 tetrahydrocannabinol concentration greater than 2.0 percent on a dry-weight basis shall not be eligible for remediation and shall be required to be effectively disposed of as provided in this regulation.

(o) Acceptable methods of effective disposal shall include plowing under, mulching or composting, disking, mowing or chopping, deep burial, burning, or any other method allowed under federal law and approved by the secretary.

(p) If required pursuant to federal law, all hemp that requires effective disposal shall be destroyed or disposed of as required by the controlled substances act, 21 U.S.C. 801 et seq., and in compliance with requirements of the United States drug enforcement agency.

(q) If allowed pursuant to federal law, each licensee shall conduct effective disposal at the licensee's expense within 10 days of receiving notice that effective disposal is required. Each licensee shall effectively dispose of all volunteer plants within and adjacent to the licensed growing area during the current license year and for at least three years after the last reported date of planting. Each licensee shall allow representatives of the secretary to be present during the effective disposal of plants or plant parts, or proof of the effective disposal may be required by the secretary. Each licensee who conducts effective disposal shall, within 14 days of conducting the effective disposal, report the number of acres effectively disposed of to the department. A licensee who conducts effective disposal shall not be eligible for a refund of any fees paid, the cost of effective disposal, or the value of the crop.

(r) Each licensee whose plants are effectively disposed of shall be responsible for reimbursing any law enforcement agency whose officers or agents are required to participate in



or be present during the effective disposal for all of the law enforcement agency's costs associated with the effective disposal.

(s) Failure of a licensee to conduct effective disposal as required by the secretary within 10 days of receiving notice that effective disposal is required shall result in the secretary's conducting effective disposal at the expense of the licensee, unless an extension is granted by the secretary.

(t) A licensee's failure to conduct effective disposal as required by the secretary, failure to reimburse the secretary for any costs incurred as a result of the secretary's conducting effective disposal, or failure to reimburse any law enforcement agency for any costs associated with effective disposal shall be grounds for denial of any future hemp producer license application.

(u) Each licensee who violates the act with a culpable mental state of negligence shall be subject to a corrective action plan as specified in K.A.R. 4-34-29 and reported to the appropriate state or local law enforcement agency. Each licensee who violates the act with a culpable mental state greater than negligence shall be reported to the United States attorney's office and the Kansas attorney general's office, in addition to the appropriate state or local law enforcement agency. (Authorized by and implementing K.S.A. 2020 Supp. 2-3906; effective Jan. 8, 2021; amended, T-\_\_\_\_\_, \_\_\_\_\_.)

**K.A.R. 4-34-26. Transportation of industrial hemp.** (a) Each licensee who sells, trades, barter, gives away, or otherwise transfers any unprocessed industrial hemp to any other person shall ensure that the unprocessed industrial hemp is accompanied by a signed bill of lading that includes the licensee's license number, the total quantity of industrial hemp transferred, the date the transfer occurred, and the name of the person acquiring the industrial hemp. A certificate of analysis or other similar document shall be attached to the bill of lading.

(b) Each person who sells, trades, barter, gives away, or otherwise transfers unprocessed industrial hemp subsequent to an initial transfer involving unprocessed industrial hemp as specified in subsection (a) shall record the transfer and shall amend the bill of lading or attach the information regarding the subsequent transfer to the original bill of lading and shall include the name of the person acquiring possession of the industrial hemp, the amount of industrial hemp transferred, and the date of the transfer. Any individual in possession of unprocessed industrial hemp plants, plant parts, grain, or seeds without a valid hemp producer's license or a bill of lading may be presumed to have unlawfully cultivated or produced hemp in violation of the act or gained possession of industrial hemp plants, plant parts, grain, or seeds that were cultivated or produced in violation of the act.

(c) Each licensee shall comply with all local, state, and federal laws and regulations related to the transportation of industrial hemp and with the act. (Authorized by and implementing K.S.A. 2019 Supp. 2-3906; effective P-\_\_\_\_\_.)

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JUL 31 2020

DIVISION OF THE BUDGET

APPROVED

AUG 05 2020

DEPT. OF ADMINISTRATION

APPROVED

SEP 21 2020

ATTORNEY GENERAL



**K.A.R. 4-34-27. Planting restrictions; signage requirements; volunteer plants. (a)** A

licensee shall not cultivate, plant, grow, or harvest industrial hemp plants, plant parts, grain, or seeds at any location not included on the license.

(b) A licensee shall not cultivate, plant, grow, or harvest industrial hemp plants, plant parts, grain, or seeds in a residential structure, within 50 feet of a residential structure, or within one-quarter mile of any public or private K-12 school or public recreational area, except with the secretary's written permission.

(c) A licensee shall not interplant any other crop with industrial hemp, except that any state educational institution licensee may do so upon authorization by the secretary. This subsection shall not prohibit the use of ground cover, but ground cover shall not be harvested.

(d) A licensee shall not interplant different varieties of industrial hemp within a lot.

(e) Harvested lots of industrial hemp plants shall not be commingled with other harvested lots or other material.

(f) Each licensee shall post and maintain at least one sign at each licensed growing area listed on the license. A sign shall be posted along each licensed growing area boundary adjacent to a public road, except that if the licensed growing area is adjacent to an intersection of two or more public roads, a sign shall be posted at the intersection. If a licensed growing area is not adjacent to any public road, a sign shall be posted at the point of access to the licensed growing area. Each sign shall measure at least 36 inches per side, shall be clearly visible and legible from the adjacent public road, intersection of public roads, or access point, and shall include the following information:

(1) The following text: "Kansas Department of Agriculture Industrial Hemp Program";

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DIVISION OF THE BUDGET

APPROVED

MAY 08 2020

DEPT. OF ADMINISTRATION

APPROVED

SEP 21 2020

ATTORNEY GENERAL

- (2) the licensee's name;
- (3) the licensee's license number; and
- (4) the department's telephone number.

(g) Each licensee shall allow the secretary to inspect, for volunteer plants, ditches, fence lines, or other unmanaged land areas adjacent to any licensed growing area. Each licensee shall destroy any volunteer plants for at least three years after the last date of planting. (Authorized by and implementing K.S.A. 2019 Supp. 2-3906; effective P-\_\_\_\_\_).

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MAY 07 2020

DIVISION OF THE BUDGET

APPROVED

MAY 08 2020

DEPT. OF ADMINISTRATION

APPROVED

SEP 21 2020

ATTORNEY GENERAL

**K.A.R. 4-34-28. Access to records and property.** (a) Acceptance of a license shall constitute a grant of authority by each licensee allowing the secretary to inspect all records related to the cultivation or production of industrial hemp.

(b) Each licensee shall grant the secretary access to all land identified for the cultivation or production of industrial hemp for purposes of inspection to determine compliance with the act and the implementing regulations. In addition to pre-harvest sampling and testing of all industrial hemp plants being cultivated or produced pursuant to the act as specified in K.A.R. 4-34-24, in accordance with federal law, each licensee's premises and records related to the cultivation or production of industrial hemp shall be subject to annual inspection to ensure compliance with the act and the implementing regulations.

(c) Each licensee shall consent to the secretary's providing information to the United States department of agriculture, law enforcement, fire and rescue agencies, and the public regarding each licensed growing area. Additionally, each licensee shall consent to the secretary's providing information about any licensed growing area, including global positioning system coordinates, to representatives of the United States department of agriculture, Kansas bureau of investigation, United States drug enforcement agency, and other law enforcement agencies.

(d) Each licensed growing area and all adjacent areas shall be subject to inspection by the secretary. The secretary shall have complete, unrestricted, and immediate access to all industrial hemp plants, plant parts, grain, and seeds, whether growing or not, including access to all land, buildings, facilities, motor vehicles, and other structures used for industrial hemp-related activities. Access shall be granted at reasonable times, without interference or obstruction, with or without cause, and with or without advance notice. The secretary's right of access specified in

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JUL 31 2020

DIVISION OF THE BUDGET

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AUG 05 2020

DEPT. OF ADMINISTRATION

APPROVED

SEP 21 2020

ATTORNEY GENERAL



this regulation shall include the unrestricted right to inspect or take samples of any industrial hemp plants, plant parts, grain, or seeds, whether growing or not, present at the location being accessed, as well as the right to inspect any reports or records pertaining to industrial hemp plants, plant parts, grain, or seeds. (Authorized by and implementing K.S.A. 2019 Supp. 2-3906; effective P-\_\_\_\_\_.)

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JUL 31 2020

DIVISION OF THE BUDGET

APPROVED

AUG 05 2020

DEPT. OF ADMINISTRATION

APPROVED

SEP 21 2020

ATTORNEY GENERAL

**K.A.R. 4-34-29. Negligent violations; corrective action plans.** (a) Negligent violations of the act may include failure to provide a legal description of land on which a licensee produces industrial hemp, producing plants with a delta-9 tetrahydrocannabinol concentration greater than 1.0 percent on a dry-weight basis, or producing plants with a delta-9 tetrahydrocannabinol concentration greater than 0.3 percent on a dry-weight basis if the licensee did not make reasonable efforts to cultivate or produce industrial hemp. It shall not be a negligent violation of the act if a licensee produces plants with a delta-9 tetrahydrocannabinol concentration of 1.0 percent or less on a dry-weight basis and the licensee has made reasonable efforts to cultivate or produce industrial hemp. Each licensee who negligently violates the act or the implementing regulations shall be required to follow a corrective action plan developed by the secretary.

(b) Upon the first negligent violation, each licensee shall meet the following requirements:

(1) Correct the violation within 10 days of notification of the violation by the secretary, including conducting effective disposal of the industrial hemp crop if so ordered;

(2) for the duration of the time period specified in the corrective action plan, which shall be at least two years, provide a report to the secretary as often as is required by the secretary regarding the status of the violation; and

(3) complete any other actions required by the secretary.

(c) Upon a second negligent violation within five years of a previous negligent violation, each licensee shall meet the following requirements:

(1) Correct the violation within 10 days of notification of the violation by the secretary, including the effective disposal of the industrial hemp crop if so ordered;

(2) for the duration of the time period specified in the corrective action plan, which shall be at least two years, provide a report to the secretary at least every 30 days, or as often as is required by the secretary, regarding the status of the violation; and

(3) complete any other actions required by the secretary.

(d) Upon a third negligent violation within five years of the first negligent violation, each licensee shall be ineligible to cultivate or produce industrial hemp for a period of five years beginning on the date of the third violation. Each license or registration held by the licensee shall be subject to immediate revocation, and all of the licensee's industrial hemp shall be subject to destruction, if so ordered. (Authorized by and implementing K.S.A. 2020 Supp. 2-3906; effective Jan. 8, 2021; amended, T-\_\_\_\_\_, \_\_\_\_\_.)



**KANSAS DEPARTMENT OF AGRICULTURE PLANT PROTECTION AND WEED  
CONTROL PROGRAM**

**PROCEDURES FOR PRE-HARVEST INDUSTRIAL HEMP SAMPLE COLLECTION**

## **Table of Contents**

Summary, Purpose, and Scope.....	3
Summary of Practice.....	3
Pre-Requisites for Post-Harvest Sample Collection.....	4
Sampling Guidelines.....	5
Transfer of Samples.....	7

## **Summary of Tables**

Table 1- Approximate number of cuttings to take per lot size.....	8
---	---

## **Summary of Figures**

Figure 1- Sampling pathing for industrial hemp lots from shapes to a square, circular or oval, irregular and rectangle.....	9
---	---

## **Procedures for Pre-Harvest Industrial Hemp Sample Collection**

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**Page 3 of 9**

### **Summary**

The Commercial Industrial Hemp Act, K.S.A. 2-3901 *et. seq.* and amendments thereto and rules and regulations adopted pursuant thereto (Act), charges the Kansas Department of Agriculture (KDA) with regulating the Kansas commercial industrial hemp program (Program). KDA will therefore conduct pre-harvest sampling and testing of industrial hemp grown for commercial purposes to ensure conformity and compliance with federal and state law.

KDA is committed to ensuring that industrial hemp grown under the auspices of the Program is compliant with federal and state law and is truly industrial hemp. KDA intends to inspect and sample all industrial hemp fields, and all industrial hemp plants intended for harvest are subject to compliance testing to ensure compliance with the statutory total delta-9 tetrahydrocannabinol concentration of 0.3 percent.

### **Purpose:**

1. Standard sampling guidelines are specified for sampling of industrial hemp within licensed growing areas.
2. Samples are taken to obtain specimens for the measurement of total delta-9 tetrahydrocannabinol concentration, which determines whether the specimens are hemp or marijuana. The measurements are intended to be representative of the total delta-9 tetrahydrocannabinol concentration in a "lot" of hemp crop acreage as identified by the producer. Producers are not permitted to harvest hemp prior to the hemp being sampled and tested for total delta-9 tetrahydrocannabinol concentration.

### **Scope:**

1. Samples collected under this procedure are acceptable for submission to the Kansas Department of Agriculture Laboratory for determination of total delta-9 tetrahydrocannabinol concentration.
2. Since the total delta-9 tetrahydrocannabinol concentration of industrial hemp generally increases as the plant comes to maturity, the timing of sampling is important to accurately measure total delta-9 tetrahydrocannabinol concentration and monitor compliance with the state law.
3. Samples must be collected by KDA authorized sampling agents who have undergone sampling training. It is the responsibility of the licensed producer to pay any fees associated with sampling set by the department.

### **Summary of Practice:**

1. This practice provides procedures for entering a licensed growing area and collecting the number of plant specimens necessary to represent a homogeneous composition of the Lots to be sampled. An authorized representative should enter the licensed growing area,



**Procedures for Pre-Harvest Industrial Hemp Sample Collection**  
**Document: KDA-INDUSTRIALHEMP-0003**

**Revision #: 2**

**Published Date: 04/16/2021**

**Page 4 of 9**

strategically examine the growing area, establish an approach for navigating each lot, and collect individual specimens of plants in order to obtain a representative sample of industrial hemp from the designated lot.

2. Cuttings from each "Lot" of industrial hemp crop acreage, as identified by the producer and submitted to and uniquely identified by the Farm Service Agency per the requirements of the USDA hemp production program, shall be organized as composite samples. For the purposes of these procedures, a "Lot" is a contiguous area in a field, greenhouse, or indoor growing structure containing the same variety or strain of cannabis throughout. In addition, "Lot" refers to the batch of contiguous, homogeneous whole of a product being sold to a single buyer at a single time. Each "Lot" is to be defined by the producer in terms of farm location, field acreage, and to be reported as such to the FSA.

**Pre-requisites for Pre-Harvest Inspection Sample Collection:**

**1. General**

- 1.1 When a licensee submits a pre-harvest report (at least 30 days before each anticipated harvest date for each applicable lot), KDA should contact the primary licensee to confirm the location where industrial hemp will be harvested and to schedule a pre-harvest inspection and a sampling. At this time, if the submitted pre-harvest report varies from the license information on file with KDA, KDA should notify the primary licensee to update the license information.
- 1.2 If two or more harvests will be conducted within the growing area during a license year, the licensee shall notify the department of each intended harvest date at least 30 days before each intended harvest date. The licensee shall pay a sampling fee and testing fee for each sample collected per lot. If two or more harvests will be conducted in the same lot during a license year, the licensee shall notify the department of each intended harvest date at least 30 days before each intended harvest date. The licensee shall pay a sampling fee and testing fee for each harvest conducted in the lot after the initial harvest of that lot.
- 1.3 Each licensee shall permit representatives of the department complete, unrestricted, and immediate access to all industrial hemp plants, plant parts, grain, and seeds and all locations and buildings listed on the license. Access shall be granted at reasonable times, without interference or obstruction, with or without cause, and with or without advance notice.
- 1.4 All samples collected by the department shall become the property of the department, and no compensation shall be owed to the licensee.

**2. Equipment**

- 2.1 Shears.
- 2.2 Alcohol wipes (for collection equipment should be cleaned between independent samples samples).
- 2.3 COC paper sampling bags for necessary functions, including:
  - 2.2.1 Collection of plant materials;
  - 2.2.2 Sample preservation; and

## **Procedures for Pre-Harvest Industrial Hemp Sample Collection**

**Document: KDA-INDUSTRIALHEMP-0003**

**Revision #: 2**

**Published Date: 04/16/2021**

**Page 5 of 9**

- 2.2.3 Correct labeling capability.
- 2.4 COC tags and tape.
- 2.5 Stapler and staples.
- 2.6 Writing utensil.
- 2.7 Measuring devices, including either:
  - 2.7.1 Ruler; and
  - 2.7.2 Portable measuring wheel.
- 2.8 Plastic crate and bucket for sample transport.
- 2.9 Electronic scale accurate to 0.1 grams (g).
- 2.10 Device with GPS coordinate confirmation capabilities.
- 2.11 Device with photographic documentation capabilities.
- 2.12 Communications equipment (computer and phone).
- 2.13 Inspection outerwear and protection
  - 2.13.1 Nitrile gloves, long pants, and long sleeves are recommended; and
  - 2.13.2 Appropriate footwear.
- 3. Documentation
  - 3.1 Inspection form
    - 3.1.1 Standardized inspection checklist relating to various aspects of the general requirements pertaining to licensing, records, and land use.
  - 3.2 Request for analysis and chain of custody forms
  - 3.3 Applicable Producer Filed Reports
    - 3.3.1 To serve as a reference material.
  - 3.4 Maps and photos
    - 3.4.1 Relevant maps and photos of where the material is being held.

### **Sampling Guidelines**

#### **1. General**

- 1.1 Surveillance of the licensed growing area.
  - 1.1.1 The inspector should verify the GPS coordinates of the applicable growing area or Lots as compared to the GPS coordinates submitted by the licensee to KDA.
  - 1.1.2 The inspector should estimate the average height, appearance, approximate density, and condition of the plants and the degree of maturity of the flowering material, meaning inflorescences (flowers/buds).
  - 1.1.3 The inspector should visually establish the homogeneity of the stand to establish that the growing area is of like variety.
- 1.2 Time of Sampling
  - 1.2.1 No more than 30 days prior to the intended harvest date of industrial hemp, a KDA representative shall collect samples from such cannabis plants for total delta-9 tetrahydrocannabinol concentration testing. The 30-day pre-harvest sampling is not required for immature industrial hemp plants, such as seedlings or clones for use by a producer or sale to another producer, but immature industrial hemp plants grown for these purposes are still subject to sampling and testing by KDA.



**Procedures for Pre-Harvest Industrial Hemp Sample Collection**  
**Document: KDA-INDUSTRIALHEMP-0003**

**Revision #: 2**

**Published Date: 04/16/2021**

**Page 6 of 9**

- 1.3 Sampling from licensed growing area
  - 1.3.1 For purposes of determining the number of individual plants to select for sampling, the size of the growing area should be considered. For sampling purposes, samples from separate Lots must be kept separate and not be commingled.
  - 1.3.2 If a lot contains multiple industrial hemp varieties, the inspector must generate separate samples from each subplot within the Lot, and each sample must contain a single variety.
- 2. Sample Collection
  - 2.1 Criteria for plant samples
    - 2.1.1 For lots of less than one (1) acre, including greenhouses, select a minimum of fifteen (15) plants, then take a cutting from the plant to form a sample (Table 1). If plant density and stand is poor, use discretion or select a minimum five (5) plants to generate no less than forty (40) grams of fresh plant material.
    - 2.1.2 For lots of 1 to 33 acres, including greenhouses, select a minimum of 30 plants, then take cuttings of each plant, then combine to form a composite sample (Table 1).
    - 2.1.3 For lots larger than thirty-three (33) acres, including greenhouses, the number of plants that will be selected to form a composite sample is indicated in Table 1.
  - 2.2 Sampling Pattern
    - 3.1.1 Sampling agents should always walk at right angles to the rows of plants, beginning at one point of the Lot and walking towards another point on the opposite side of the Lot.
    - 3.1.2 Depending on the geometric shape of the growing area or Lot, sampling agents should use pathing indicated in the figures on page 8 of this document. The figures associated with each geometric shape represent a rough sampling pattern that should be followed for a lot of that shape; consider Figure 1.
  - 2.3 Selection of plant material
    - 2.3.1 Fiber and Grain varieties: monoecious and dioecious
      - 2.3.1.1 Vegetative
        - 2.3.1.1.1 Terminal 20 cm of the main or axillary shoot. A single sample from a plant should include a meristem, shoot material, and developed and undeveloped foliar material.
      - 2.3.1.2 Reproductive
        - 2.3.1.1.2 Terminal 20 cm of the main or axillary female inflorescence. The majority of the sample's composition should contain the pistillate flowers, but it may contain some peduncle, pedicel, and some foliar materials.
    - 2.3.2 Floral varieties
      - 2.3.2.1 Vegetative
        - 2.3.2.1.1 Terminal 20 cm of the main or axillary shoot. A single sample from a plant should include a meristem, shoot material, and developed and undeveloped foliar material.



## Procedures for Pre-Harvest Industrial Hemp Sample Collection

Document: KDA-INDUSTRIALHEMP-0003

Revision #: 2

Published Date: 04/16/2021

Page 7 of 9

- 2.3.2.2 Reproductive (female plants and inflorescences only)
  - 2.3.2.2.2 Terminal 20 cm of the main or axillary female inflorescence.  
The majority of the sample's composition should contain the pistillate flowers, but it may contain some peduncle, pedicel, bract, and some foliar materials.
- 2.3.3 Immature plants (vegetative)
  - 2.3.2.1 Terminal 20 cm of the main or axillary shoot. A single sample from a plant should include a meristem, shoot material, and developed and undeveloped foliar material.
- 2.4 Bagging, labeling, transportation, and storage
  - 2.4.1 Place removed tissues in the appropriate collection bag, seal the bag with COC tape, and properly label the bag.
  - 2.4.2 The bag should be labeled with the following information:
    - 2.4.2.1 The name, phone number, and email address of the sampling agent;
    - 2.4.2.2 the sample ID, written as follows: YYYYMMDD20\_XXXX-X (year, month, day, license number, sample number);
    - 2.4.2.3 the date and time the sample was collected;
    - 2.4.2.4 Matrix (Vegetative or Floral) and varieties;
    - 2.4.2.5 Number of cuttings per sample;
  - 2.4.3 Samples and any container that contains samples should be kept out of direct sunlight during transport and should not be frozen or chilled.

### Transfer of Samples

1. Samples should be transported to the KDA Laboratory as promptly as possible after collection.
2. Upon the sample arriving at the laboratory, proper Request for Analysis and Chain of Custody forms should be completed by the sampling agent or transporter and laboratory personnel, and should include the following information:
  - 2.1 the date and time the sample was relinquished to the laboratory;
  - 2.2 the name of the individual the sample was relinquished to; and
  - 2.4 the date and time the sample was relinquished.

**Procedures for Pre-Harvest Industrial Hemp Sample Collection**  
**Document: KDA-INDUSTRIALHEMP-0003**

Revision #: 2

Published Date: 04/16/2021

Page 8 of 9

**Table 1- Approximate number of cuttings to take per lot size**

Number of Acres	Sample Size (n)	Number of Acres	Sample Size (n)	Number of Acres	Sample Size (n)
<1	15	71	58	187-188	116
1	30	72-73	59	189-191	117
2	30	74	60	192-194	118
3	30	75-76	61	195-197	119
4	30	77	62	198-199	120
5	30	78-79	63	200-202	121
6	30	80-81	64	203-205	122
7	30	82	65	206-208	123
8	30	83-84	66	209-211	124
9	30	85-86	67	212-214	125
10	30	87	68	215-217	126
11	30	88-89	69	218-220	127
12	30	90-91	70	221-223	128
13	30	92	71	224-226	129
14	30	93-94	72	227-229	130
15	30	95-96	73	230-232	131
16	30	97-98	74	233-235	132
17	30	99	75	236-238	133
18-19	30	100-101	76	239-242	134
20	30	102-103	77	243-245	135
21	30	104-105	78	246-248	136
22	30	106-107	79	249-252	137
23	30	108	80	253-255	138
24	30	109-110	81	256-258	139
25-26	30	111-112	82	259-262	140
27	30	113-114	83	263-265	141
28	30	115-116	84	266-269	142
29	30	117-118	85	270-273	143
30	30	119-120	86	274-276	144
31-32	30	121-122	87	277-280	145
33	30	123-124	88	281-284	146
34	31	125-126	89	285-288	147
35	32	127-128	90	289-292	148
36	33	129-130	91	293-296	149
37-38	34	131-132	92	297-300	150
39	35	133-134	93	301-304	151
40	36	135-136	94	305-308	152
41-42	37	137-138	95	309-312	153
43	38	139-140	96	313-316	154
44	39	141-143	97	317-320	155
45-46	40	144-145	98	321-325	156
47	41	146-147	99	326-329	157
48	42	148-149	100	330-333	158
49-50	43	150-152	101	334-338	159
51	44	153-154	102	339-343	160
52	45	155-156	103	344-347	161
53-54	46	157-158	104	348-352	162
55	47	159-161	105	353-357	163
56	48	162-163	106	358-362	164
57-58	49	164-166	107	363-366	165
59	50	167-168	108	367-371	166
60-61	51	169-170	109	372-377	167
62	52	171-173	110	378-380	168
63-64	53	174-175	111		
65	54	176-178	112		
66-67	55	179-181	113		
68	56	182-183	114		
69-70	57	184-186	115		

**Procedures for Pre-Harvest Industrial Hemp Sample Collection**

**Document: KDA-INDUSTRIALHEMP-0003**

**Revision #: 2**

**Published Date: 04/16/2021**

**Page 9 of 9**

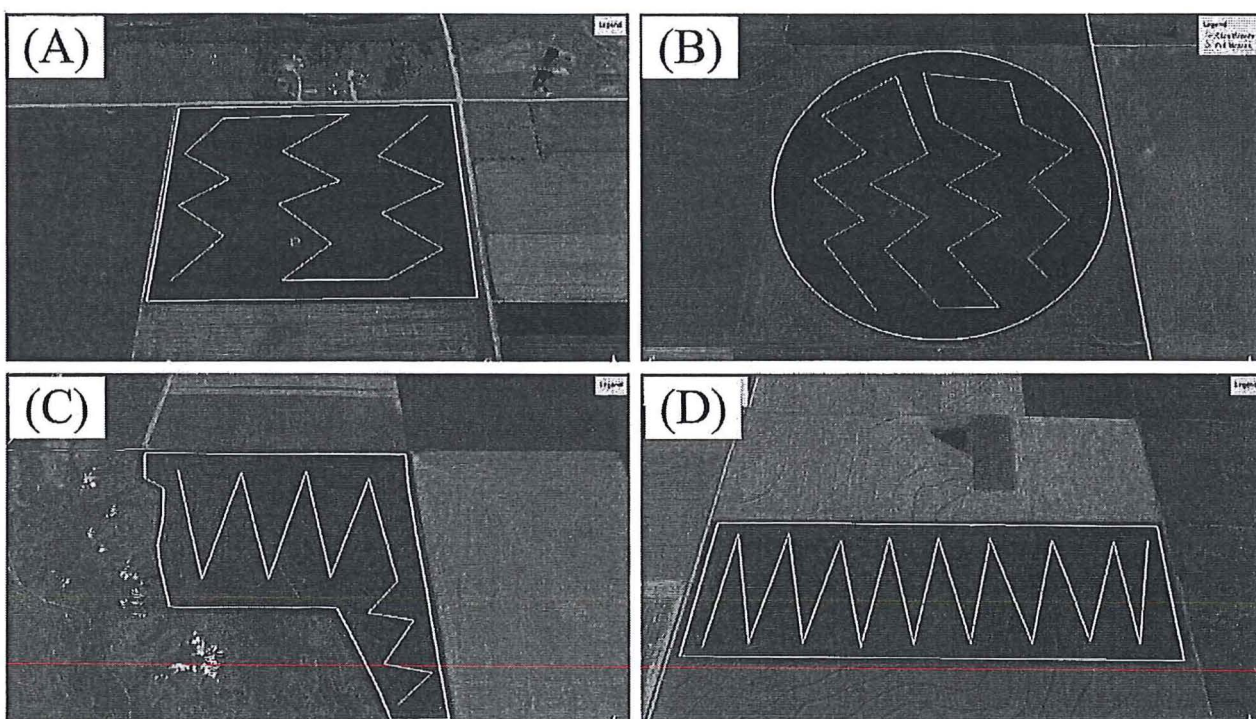


Figure 1- Sampling pathing for industrial hemp lots from shapes of (A) square, (B) circular or oval, (C) irregular and (D) rectangle.



**KANSAS DEPARTMENT OF AGRICULTURE PLANT PROTECTION AND WEED  
CONTROL PROGRAM**

**PROCEDURES FOR POST-HARVEST AND POST-REMEDATION INDUSTRIAL  
HEMP SAMPLE COLLECTION**

**Table of Contents**

Summary, Purpose, and Scope.....	3
Summary of Practice.....	3
Pre-Requisites for Post-Harvest Sample Collection.....	4
Sampling Guidelines.....	5
Transfer of Samples.....	6

## **Procedures for Post-Harvest Industrial Hemp Sample Collection**

**Document: KDA-INDUSTRIALHEMP-0004**

**Revision #: 1**

**Published Date: 04/16/2021**

**Page 3 of 6**

### **Summary**

The Commercial Industrial Hemp Act, K.S.A. 2-3901 *et. seq.* and amendments thereto and rules and regulations adopted pursuant thereto (Act), charges the Kansas department of agriculture (KDA) with managing the Kansas commercial industrial hemp program (Program). KDA will therefore conduct post-harvest and post-remediation sampling and testing of industrial hemp to ensure conformity and compliance with federal and state law.

KDA is committed to ensuring that industrial hemp produced under the auspices of the Program is compliant with state law and is truly industrial hemp. All industrial hemp is subject to post-harvest sampling and testing to ensure compliance with the statutory total delta-9 tetrahydrocannabinol concentration of 0.3 percent.

### **Purpose:**

1. Standard post-harvest and post-remediation sampling guidelines are specified for sampling of industrial hemp harvested and remediated by licensed producers.
2. Samples are taken to obtain specimens for the measurement of total delta-9 tetrahydrocannabinol concentration, which determines whether the specimens are industrial hemp or marijuana. The measurements are intended to be representative of the total delta-9 tetrahydrocannabinol concentration from a "lot" of industrial hemp. Producers may not release plant material that has been remediated into commerce until it has been sampled, tested for total delta-9 tetrahydrocannabinol concentration, and deemed compliant.

### **Scope:**

1. Samples collected under this procedure are acceptable for submission to The Kansas Department of Agriculture Laboratory for determination of total delta-9 tetrahydrocannabinol concentration.
2. All industrial hemp plants, plant parts, seeds, gain, or plant material that have been remediated are subject to post-remediation sampling and testing to ensure compliance before entering the stream of commerce.
3. Samples must only be collected by KDA authorized sampling agents who have undergone industrial hemp sampling training. It is the responsibility of the licensed producer to pay any fees KDA imposes associated with sampling.

### **Summary of Practice:**

1. This practice sets forth procedures for collecting plant specimens that represent a homogeneous composition of an individual Lot of industrial hemp in order to form a sample. In order to obtain such a representative sample, a sampling agent should enter the sampling area, strategically examine the area, establish an approach for navigating the area, and collect individual specimens of industrial hemp or remediated plant material.

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**Procedures for Post-Harvest Industrial Hemp Sample Collection**  
**Document: KDA-INDUSTRIALHEMP-0004**

**Revision #: 1**

**Published Date: 04/16/2021**

**Page 4 of 6**

2. Industrial hemp or remediated plant material should be organized by Lot as identified by the producer and submitted to and uniquely identified by the U.S. Department of Agriculture Farm Service Agency (FSA). For the purposes of these procedures, a "Lot" refers to industrial hemp or remediated plant material that originated from a contiguous area in a field, greenhouse, or indoor growing structure that contained the same variety or strain of cannabis throughout. In addition, "Lot" refers to the batch of contiguous, homogeneous whole of a product being sold to a single buyer at a single time. Each "Lot" is to be defined by the producer in terms of farm location and field acreage and is to be correspondingly reported as such to the FSA.

**Pre-requisites for Post-Harvest Sample Collection:**

**1. General**

- 1.1 When post-harvest sampling is required or when a licensee submits a remediation report, a sampling agent should contact the primary licensee to confirm the location where the plant material is located and to schedule a post-harvest or post-remediation sampling.
- 1.2 The licensee shall pay a sampling fee and testing fee for each sample collected.
- 1.3 Each licensee shall permit sampling agents to have complete, unrestricted, and immediate access to all industrial hemp and remediated plant material, as well as all locations, including buildings, where the same is located. Access shall be granted at reasonable times, without interference or obstruction, with or without cause, and with or without advance notice.
- 1.4 All samples collected by sampling agent shall become the property of KDA, and no compensation shall be owed to the licensee.

**2. Equipment**

- 2.1 Shears
- 2.2 Biomass probe or scoop
- 2.3 Measuring cups
- 2.4 Alcohol wipes (for collection equipment should be cleaned between independent samples samples)
- 2.5 COC paper sampling bags for necessary functions, including:
  - 2.5.1 Collection of plant materials;
  - 2.5.2 Sample preservation; and
  - 2.5.3 Correct labeling capability.
- 2.6 COC tags and tape
- 2.7 Stapler and staples
- 2.8 Writing utensil
- 2.9 Measuring devices, including either:
  - 2.9.1 Ruler; and
  - 2.9.2 Portable measuring wheel.
- 2.10 Plastic crate and bucket for sample transport
- 2.11 Electronic scale accurate to 0.1 grams (g)
- 2.12 Device with GPS coordinate confirmation capabilities

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**Procedures for Post-Harvest Industrial Hemp Sample Collection**  
**Document: KDA-INDUSTRIALHEMP-0004**

**Revision #: 1**

**Published Date: 04/16/2021**

**Page 5 of 6**

- 2.13 Device with photographic documentation capabilities
- 2.14 Communications equipment (computer and phone)
- 2.15 Inspection outerwear and protection
  - 2.15.1 Nitrile gloves, long pants, and long sleeves are recommended; and
  - 2.15.2 Appropriate footwear.
- 3. Documentation
  - 3.1 Inspection form
    - 3.1.1 Standardized inspection checklist relating to various aspects of the general requirements pertaining to licensing, records, and land use.
  - 3.2 Request for analysis and chain of custody forms
  - 3.3 Applicable Producer Filed Reports
    - 3.3.1 To serve as a reference material
  - 3.4 Maps and photos
    - 3.4.1 Relevant maps and photos of where the material is being held.

**Sampling Guidelines**

**1. General**

- 1.1 Surveillance of facility by sampling agents to verify:
  - 1.1.1 The location where the material is being held;
  - 1.1.2 the number of bags or containers containing industrial hemp or plant material that has been remediated from each Lot.
  - 1.1.3 The inspector shall visually establish the homogeneity of each bag or containers containing industrial hemp or plant material, which has been remediated from each Lot.
- 1.2 Time of Sampling
  - 1.2.1 Sampling agents should collect samples of industrial hemp or remediated plant material for total delta-9 tetrahydrocannabinol concentration testing upon request of the producer or as required by K.A.R. 4-34-25.
- 1.3 Sampling
  - 1.3.1 For purposes of determining the amount of material to select for sampling, the total quantity of the material being sampled should be considered. For sampling purposes, samples from different Lots must be kept separate and not be commingled.
  - 1.3.2 If a Lot contains multiple industrial hemp varieties, sampling agents should collect samples from each subplot within the Lot, and each sample should contain a single variety.
  - 1.3.3 When collecting samples, the sampling agent should use a biomass probe, scooping tool, or other tool to collect industrial hemp or remediated plant material, and samples should be collected from various depths and locations and from each bag or container.

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**Procedures for Post-Harvest Industrial Hemp Sample Collection**  
**Document: KDA-INDUSTRIALHEMP-0004**

**Revision #: 1**

**Published Date: 04/16/2021**

**Page 6 of 6**

**2. Sample Collection**

**2.1 Criteria for samples**

2.1.1 At minimum, approximately 750 mL or three (3) standard measuring cups of industrial hemp or remediated plant material should be collected from each bag or container. If 750 mL of material from each bag or container is not available, the sampling agent should collect enough biomass material for a representative sample.

**2.2 Bagging, labeling, transportation, and storage**

1.2.1 Place industrial hemp or remediated plant material in the appropriate collection bag, sealed the bag with COC tape, and properly label the bag.

1.2.2 The bag should be labeled with the following information:

1.2.2.1 The name, phone number, and email address of the sampling agent;

1.2.2.2 the sample ID, written as follows: YYYYMMDD20\_XXXX-X (year, month, day, license number, sample number);

1.2.2.3 the date and time the sample was collected;

1.2.2.4 Matrix (vegetative, floral, or biomass);

1.2.2.5 Variety;

1.2.2.6 Number of cuttings or amount of material per sample;

1.2.2.7 Initial or resample; and

1.2.2.8 Any other relevant information.

1.2.3 Samples and any container that contains samples should be kept out of direct sunlight during transport and should not be frozen or chilled.

**2.3 Holds**

1.3.1 All bags or containers that contain samples of remediated plant material should be marked with hold-labels or hold-tape.

1.3.2 Hold-labels or hold-tape shall not be removed by the licensee prior to the material being deemed complaint and eligible for commerce.

**Transfer of Samples**

1. Samples should be transported to the KDA Laboratory as promptly as possible after collection.

2. Upon the sample arriving at the Laboratory, Request for Analysis and Chain of Custody forms should be completed by the sampling agent or transporter and laboratory personnel and should include the following information:

2.1 the date and time the sample was relinquished to the laboratory;

2.2 the name of the individual the sample was relinquished to; and

2.3 the date and time the sample was relinquished.

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**KANSAS DEPARTMENT OF AGRICULTURE LABORATORY**

**Processing of Industrial Hemp and Determination of Total Delta-9 THC  
Concentration**

**Approvals**

<b>Editor:</b> David Nobo	<b>Date:</b> 4/1/2021 5:59:34 PM
<b>Reviewed By:</b> Veronica Fris	<b>Date:</b> 4/1/2021 6:21:43 PM
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Table of Contents

Purpose.....	3
Scope.....	3
Responsibility.....	3
Frequency.....	3
References.....	3
Safety and Hazardous Waste.....	4
Supplies, Reagents and Solutions, Equipment, and Standards.....	4
Outline of Procedure.....	6
Specific Procedure.....	7
Calculations.....	13
Quality Assurance.....	14
Method Notes.....	15

## Processing of Industrial Hemp and Determination of Total Delta-9 THC

Document #: 5116

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Page 3 of 15

### 1. Purpose

The purpose of this procedure is to describe the process for sample receipt, handling, grinding and determination of total delta-9 ( $\Delta 9$ ) tetrahydrocannabinol (THC) concentration in Industrial Hemp samples by ultra-performance liquid chromatography (UPLC) with photo diode array (PDA) detection.

### 2. Scope

Federal and State statute defines Industrial Hemp as cannabis with a total delta-9 THC concentration of no more than 0.3 percent on a dry-weight basis. "Delta-9 tetrahydrocannabinol concentration" means the combined percentage of delta-9 tetrahydrocannabinol and its optical isomers, their salts and acids, and salts of their acids, reported as THC on a dry weight basis, of any part of the plant *Cannabis sativa* L. This procedure is to be used for the sample receipt, handling, processing, and analysis of Industrial Hemp.

### 3. Responsibility

It is the responsibility of approved lab analysts to know and follow all methods, guidelines, and regulations relevant to this procedure. All lab analysts must complete a background check and fingerprinting prior to being approved to perform procedure. Only individuals with valid Industrial Hemp Research Administrative License should receive and process industrial hemp samples.

### 4. Frequency

This procedure is performed on samples as needed.

### 5. References

- 5.1 "Separation of 16 Cannabinoids in Cannabis Flower and Extracts Using a Reversed-Phase Isocratic HPLC method." Andrew J Aubin, Catharine Layton, and Shawn Helmueller, Waters Corporation, Milford, MA, USA
- 5.2 Leaner and greener analysis of cannabinoids. Elizabeth M Mudge, Susan J. Murch, Paula N. Brown. 23 February 2017.
- 5.3 "Hemp Sample Preparation", Revision: 02, Daya Mitchell, Keith Wegner, Ellen LaRiviere, Colorado Department of Agriculture Inspection & Consumer Services Division, 10 August 2018.
- 5.4 "Procedure for Receiving, Preparing, and Releasing Hemp", Version: 02, Staff Collaboration, Frank Sikora, Sharon Webb, University of Kentucky Regulatory Services. 03 April 2018.

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- 5.5 K.S.A. 2020 Article 2 Chapter 3901. Commercial industrial hemp act; Subsection B2
- 5.6 International Standard ISO/IEC 17025:2017, General requirements for the competence of testing and calibration laboratories, Third edition 2017-11.
- 5.7 AOAC INTERNATIONAL Guidelines for Laboratories Performing Microbiological and Chemical Analyses of Food, Dietary Supplements, and Pharmaceuticals. An Aid to Interpretation of ISO/IEC 17025:2017, Revised August 2018.

6. Safety and Hazardous Waste

- 6.1 Analysts should always wear appropriate Personal Protective Equipment (PPE) for the testing or analysis being performed. All reagents should be poured down the drain with copious amounts of running water. All sample waste should be disposed of in the designated hemp waste receptacle.

7. Supplies, Reagents and Solutions, Equipment, and Standards

- 7.1 Supplies
  - 7.1.1 Lab coat or apron
  - 7.1.2 Disposable gloves
  - 7.1.3 Safety glasses
  - 7.1.4 Metal spatula
  - 7.1.5 50 mL Falcon centrifuge tubes with tube rack
  - 7.1.6 2 mL amber glass vials
  - 7.1.7 Thomson 0.2  $\mu$ m filter vials
  - 7.1.8 Pipette tips – various sizes
  - 7.1.9 Disposable transfer pipets
  - 7.1.10 Graduated cylinders, Class A – various sizes
  - 7.1.11 Beakers – various sizes
  - 7.1.12 Class A volumetric flasks and stoppers – various sizes
  - 7.1.13 Bottle top dispenser
  - 7.1.14 Mason jars – various sizes
  - 7.1.15 Label tape
  - 7.1.16 Aluminum foil
  - 7.1.17 Reagent bottles – various sizes
  - 7.1.18 Moisture tins with lids
  - 7.1.19 Permanent marker
  - 7.1.20 Heat resistant gloves
  - 7.1.21 Desiccator with desiccant
  - 7.1.22 Autosampler tray
  - 7.1.23 Shears

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## Processing of Industrial Hemp and Determination of Total Delta-9 THC

Document #: 5116

Revision #: 2

Published Date: 4/1/2021 7:40:28 PM

Page 5 of 15

### 7.2 Reagents and Solutions

**NOTE:** Each freshly prepared reagent will be properly identified and recorded in KDAL Document No. 804, Solution and Reagent Preparation Form. KDAL Document No. 730, Procedure for Solution and Reagent Preparation, should be consulted if further instruction is needed.

7.2.1 Acetonitrile - Optima™

7.2.2 Ultrapure water (Millipore water)

7.2.3 Methanol – Optima™

7.2.4 Trifluoroacetic acid (TFA) – Optima™ LC/MS Grade

7.2.5 **Mobile phase** – measure 410 mL of Millipore water using a 1 L graduated cylinder and bring to volume with acetonitrile. Pipette 1 mL of TFA. Transfer contents to a 1 L reagent bottle. Expires 1 week after preparation.

7.2.6 **Needle wash** – measure 500 mL Millipore water and acetonitrile using 1 L graduated cylinders. Transfer contents to a 1 L reagent bottle. Expires 1 month after preparation.

7.2.7 **Column wash** – measure 500 mL Millipore water and acetonitrile using 1 L graduated cylinders. Transfer contents to a 1 L reagent bottle. Expires 1 month after preparation.

### 7.3 Equipment

**NOTE:** All annual preventative maintenance (PM) documents should be stored and readily available by the analyst.

7.3.1 Sonicating water bath

7.3.2 Centrifuge

7.3.3 Analytical balance

7.3.4 Pipettes – various sizes

7.3.5 UPLC system with PDA detector or similar system with software

7.3.6 Centrifugal rotor mill or equivalent with the capabilities to grind hemp samples including leaves, seeds, twigs, and stems.

7.3.7 Waters CORTECS Shield RP18, 2.7 µm, 4.6 x 50 mm or equivalent

7.3.8 Simplicity Ultrapure Water System - Millipore

7.3.9 Convection oven

7.3.10 Freezer

7.3.11 Refrigerator

7.3.12 Lockable cabinet

7.3.13 Safe

### 7.4 Standards

**NOTE:** THCA and THC standards are stored according to the manufacturer's instruction. Each prepared stock standard is good for 14 days after preparation. The Certificate of Analysis (COA) for each standard must be retained and readily available. Each freshly prepared standard will be properly identified and recorded in KDAL Document

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## Processing of Industrial Hemp and Determination of Total Delta-9 THC

Document #: 5116

Revision #: 2

Published Date: 4/1/2021 7:40:28 PM

Page 6 of 15

No. 804, Solution and Reagent Preparation Form. Refer to KDAL Document No. 730, Procedure for Solution and Reagent Preparation, if further instruction is needed.

- 7.4.1 **Δ9-Tetrahydrocannabinol (THC)** – Concentration: 1 mg/mL. Stored at 2 - 8 °C. Used for THC stock standard.
- 7.4.2 **Δ9-Tetrahydrocannabinolic acid A (THCA)** – Concentration: 1 mg/ml. Stored at ≤ -70 °C. Used for THC stock standard.
- 7.4.3 **Δ9-Tetrahydrocannabinolic acid A** – stored at ≤ -70 °C. Used for initial calibration verification (ICV) stock standard.
- 7.4.4 **Δ9-Tetrahydrocannabinol** – stored at ≤ -10 °C. Used for ICV stock standard.
- 7.4.5 **THC stock standard (50 µg/mL)** – Pipette 250 µL of THC and 250 µL of THCA into a 5 mL volumetric flask. Bring to volume with acetonitrile. Store in freezer between use. Stable for 2 weeks. Stored at ≤ -70 °C.
- 7.4.6 **ICV stock standard (50 µg/mL)** – Pipette 250 µL of THCA and 250 µL of THC into a 5 mL volumetric flask. Bring to volume with acetonitrile. Store in freezer between use. Stable for 2 weeks. Stored at ≤ -70 °C.
- 7.4.7 **Calibration standards** – prepare a four-point curve using THC stock standard with the following concentrations: 50, 20, 10, and 5 µg/mL.
  - 7.4.7.1 **50 µg/mL** – Transfer approximately 1 mL THC stock standard into a 2 mL amber vial.
  - 7.4.7.2 **20 µg/mL** – 400 µL of THC stock standard diluted with 600 µL of acetonitrile into a 2 mL amber vial.
  - 7.4.7.3 **10 µg/mL** – 200 µL of THC stock standard diluted with 800 µL of acetonitrile into a 2 mL amber vial.
  - 7.4.7.4 **5 µg/mL** – 100 µL of THC stock standard diluted with 900 µL of acetonitrile into a 2 mL amber vial.
- 7.4.8 **ICV check standard (50 µg/mL)** – Transfer approximately 1 mL of ICV stock standard into a 2 mL amber vial.

### 8. Outline of Procedure

- 8.1 Sample Receipt and Traceability
- 8.2 Sample Processing
- 8.3 Moisture Testing
- 8.4 Official Sample and Standard Preparation
- 8.5 Instrument Preparation and Sample Analysis
- 8.6 Sample Failure
- 8.7 Sample Reporting
- 8.8 Sample Discard
- 8.9 Sample Disposal

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## Processing of Industrial Hemp and Determination of Total Delta-9 THC

Document #: 5116

Revision #: 2

Published Date: 4/1/2021 7:40:28 PM

Page 7 of 15

### 9. Specific Procedure

#### 9.1 Sample Receipt and Traceability

9.1.1 Upon receipt of samples, sign and date the seal of the sample, and inspect the bag and seal for damage. Note any damage on the Request for Analysis form. For routine samples, inform the Industrial Hemp Program. For non-routine samples, inform the external customer. Ensure the Request for Analysis/Chain of Custody Form has been properly completed and is signed by an approved analyst.

9.1.1.1 In the "Laboratory Use Only" section, issue a laboratory number using the format "YY – #####H," where "YY" is the fiscal year, and "#####" is a consecutive number starting with 0001 (e.g., 20-0420H). Date, initial, and add comments as needed.

9.1.1.2 Mark the bag with the laboratory number issued to the sample.

9.1.1.3 Record the date received with initials, the sample ID and assigned laboratory ID number in KDAL Document No. 5172, Industrial Hemp Log.

9.1.2 If the sample cannot be dried within 24 hours from the time of receipt, the sample should be held in a freezer at  $\leq -20^{\circ}\text{C}$  until the sample can be dried.

9.1.3 Track reagent ILN's (internal laboratory number) and solution reagent numbers using KDAL Document No. 5117, Hemp Reagents Worksheet.

9.1.4 Create an Excel hemp worksheet and save the file to the appropriate folder using the following format "MMDDYYYY Hemp ii" Where "ii" is the analyst's initials.

9.1.4.1 Worksheet will include: initials of the analyst, falcon tube number, date received, sample ID, lab ID, test portion mass, instrument results, total delta-9 THC concentration, and date completed.

**NOTE:** Date completed is the date the sample data is integrated.

#### 9.2 Sample Processing

9.2.1 Sign and date the seal of the sample bag to identify the date it was opened and who broke the seal on the sample.

9.2.2 Remove the entire sample from the bag and spread it out on aluminum foil labeled with the lab ID. Samples can be cut into smaller pieces as needed. Place the sample in an oven at  $60\pm 2^{\circ}\text{C}$  for a minimum of 24 hours. See method note 12.3.

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## Processing of Industrial Hemp and Determination of Total Delta-9 THC

Document #: 5116

Revision #: 2

Published Date: 4/1/2021 7:40:28 PM

Page 8 of 15

- 9.2.2.1 Track oven temperature twice daily when in use using KDAL Document No. 981, Daily Temperature Monitoring Record (Double Probe).
- 9.2.3 Record the date and time the samples are placed in the oven and removed from the oven on the Industrial Hemp Log.
- 9.2.4 Once drying is complete, remove samples individually for grinding.
  - 9.2.4.1 Obtain two jars for each sample. Label the first jar "Test Specimen" along with the lab ID and the second jar "Retain Specimen" along with the lab ID.
  - 9.2.4.2 Weigh and record the jar weights (without lid) on the Industrial Hemp Log.
  - 9.2.4.3 Using a centrifugal rotor mill or equivalent, grind the entire sample including leaves, seeds, twigs, and stems.
  - NOTE:** If a sample is received and appears to have been "remediated" (shredded or blended), grind the sample as described above.
  - 9.2.4.4 Transfer approximately one-fourth of ground sample to the "Test Specimen" jar and transfer the remainder of the ground sample to the "Retain Specimen" jar.
  - 9.2.4.5 Weigh and record the total weight of each jar with sample (without lid) on the Industrial Hemp Log. Store the "Retain Specimen" in a locked cabinet.
- 9.3 Moisture Testing
  - 9.3.1 Create an Excel moisture worksheet using a pre-existing feed or hemp moisture worksheet.
    - 9.3.1.1 Save the worksheet in the appropriate folder using the template "MMDDYYLoD Hemp ii" where "ii" is the analyst's initials."
  - 9.3.2 Place moisture tin lids under the empty moisture tins and dry at 102.5 to 104.5 °C for approximately 2 hours in the convection oven.
  - 9.3.3 Remove tins from the convection oven and cool in a desiccator for approximately 30 minutes.
  - NOTE:** Do not allow tins to remain in desiccator for more than two hours. If left for longer than two hours, proceed to re-dry the empty moisture tins and lids.
  - 9.3.4 With each batch include a blank, laboratory control sample (LCS), and a duplicate. The LCS and duplicate must be weighed in accordance to step 9.3.5.
    - 9.3.4.1 Blank – leave an empty moisture tin.
    - 9.3.4.2 LCS – weigh a chosen AAFCO sample.

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## Processing of Industrial Hemp and Determination of Total Delta-9 THC

Document #: 5116

Revision #: 2

Published Date: 4/1/2021 7:40:28 PM

Page 9 of 15

- 9.3.4.3 Duplicate – weigh a chosen sample from the sample set.
- 9.3.5 Empty moisture tins will be weighed with lids placed underneath and values recorded in the corresponding moisture worksheet. Empty moisture tins are subsequently tared and  $2.0 \pm 0.1$  g of sample is weighed directly into the tin. Transfer weight to the corresponding moisture worksheet.
- 9.3.6 Shake tins gently to ensure uniformity of sample and place into a convection oven and dry for approximately three hours.
  - 9.3.6.1 Track oven temperature using KDAL Document No. 987, Temperature Monitoring – Day of Use.
  - 9.3.6.2 Record the time samples are placed in the oven and taken out of the oven on KDAL Document No. 3479, Loss on Drying Worksheet.
- 9.3.7 Once drying is complete, remove tins from the oven and place in a desiccator to cool to room temperature for approximately 30 minutes.
- NOTE:** Do not allow samples to remain in desiccator for more than two hours. If this occurs, clean tins and restart process at step 9.3.2.
- 9.3.8 Weigh sample tins and record the weight in the corresponding moisture worksheet. Desiccator lid should be slid open to retrieve tins and subsequently closed. Leaving the desiccator open may add additional moisture to the samples.
- 9.3.9 Ensure percent moisture is less than 12 % before continuing.
  - 9.3.9.1 If moisture percentage is higher than 12 %, the test specimen will be re-dried for approximately 1 hour at  $90 \pm 5$  °C. Samples will be dried to a consistent loss (typically 5 to 12 % moisture).
- 9.4 Official Sample and Standard Preparation
  - 9.4.1 Each sample is weighed into a labeled 50 mL falcon centrifuge tube.
  - 9.4.2 With each batch, include a blank, LCS, matrix spike (MS), and a duplicate.
    - 9.4.2.1 Blank – leave a falcon tube empty.
    - 9.4.2.2 LCS – weigh  $1.0 \pm 0.02$  g of a proficiency test sample or a sample internally verified by the laboratory.
    - 9.4.2.3 MS – weigh  $1.0 \pm 0.02$  g of a proficiency test sample or a sample internally verified by the laboratory. Spike the sample with 200 µl of THC and 200 µl THCA.
    - 9.4.2.4 Duplicate – weigh  $1.0 \pm 0.02$  g of a chosen sample from the sample set.

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## Processing of Industrial Hemp and Determination of Total Delta-9 THC

Document #: 5116

Revision #: 2

Published Date: 4/1/2021 7:40:28 PM

Page 10 of 15

- 9.4.2.5 Samples – weigh  $1.0 \pm 0.02$  g for all samples requiring compliance testing.
- 9.4.2.6 After taking the test portion, record the sample weight used for both moisture and THC testing in the "Sample Weight (g)" row, along with weighing and recording the final weight of the "Test Specimen" jar (without lid) in the "Final Weight (g)" row on the Industrial Hemp Log.
- 9.4.3 Using a bottle top dispenser or a 10 mL pipette, add 10 mL acetonitrile to each labeled falcon tube excluding the MS tube which requires the addition of 9.6 mL acetonitrile. If using a bottle top dispenser, use a 10 mL graduated cylinder to ensure the accuracy of the bottle top dispenser. Once verified, the dispenser may be used freely.
- 9.4.3.1 Track the use of the bottle top dispenser in KDAL Document No. 979, Vial Fillers or Burets, Day of Use Volume Check.
- 9.4.4 Place samples in the centrifuge tube rack and sonicate in a room temperature water bath for approximately 20 minutes.
- 9.4.5 After sonication, place samples in the centrifuge for approximately 10 minutes at 1500 rpm.
- NOTE:** Ensure the centrifuge is balanced before running. Use falcon tubes filled with equal volumes water to balance.
- 9.4.6 After centrifuging, perform a 10x dilution on each sample and transfer samples to a Thomson vial and bring to the fill line ( $\approx$  0.5 mL) and filter with a 0.2  $\mu$ m filter.
- 9.4.7 Create the calibration curve in 2 mL amber vials using the THC stock standard. See standards section 7.4.7.
- 9.4.8 Load samples, calibration standards, and ICV check standard into the autosampler tray and onto the UPLC instrument.
- 9.5 Instrument Preparation and Sample Analysis
- 9.5.1 Samples are analyzed by PDA detection with the following instrument conditions:
- |                    |  |
|--------------------|--|
| Column             | Waters CORTECS Shield<br>RP18, 2.7 $\mu$ m, 4.6 x 50 mm or<br>equivalent |
| Column Temperature | 35 °C  |
| Flow Rate          | 0.8 mL/min   |
| Wavelength         | 228 nm   |
| Injection Volume:  | 1 $\mu$ L  |

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Stabilization

Allow mobile phase to flow for approximately 10 minutes prior to injection.

Gradient

Isocratic

- 9.5.2 If not already open, open the Empower software and select "Configure System." A new window will open. In the column on the left-hand side select "Systems." Bring the system online by right clicking column "2" and selecting "Bring Online."
- 9.5.2.1 Close out or minimize the window.
- 9.5.3 In Empower, select "Browse Project," select "Hemp," and press "OK." A new window will open. In the top toolbar select "Run Samples" represented by an image similar to a carousel. In the new window, select "PDA" and "OK."
- 9.5.4 In the new (PDA) window, right click the box "Sample Manager FTN" and select "Launch Console." Select "System" in the column located on the left-hand side. In the top toolbar select "Control", and "Start up System..." A new window will appear. In this window ensure "A," "B," and "Seal Wash" are selected (indicated by a checkmark) and the "Duration of Prime" is "4.0." In the same window, select "SM" and ensure the "Wash Solvent" and "Purge Solvent" have checkmarks in their boxes and read "15" and "5" respectively. Select "Start."
- NOTE:** The system start-up should take approximately 12 minutes. During this time, if not completed already, the analyst should prepare their standards for the calibration curve or continue with sample preparation as needed.
- 9.5.5 Once the system start-up has completed, click the down arrow in the "Instrument Method" box located in the PDA window. Select "Hemp PDA" and select "Setup."
- 9.5.5.1 The mobile phase will begin to equilibrate the column. This takes approximately 10-15 minutes. The delta value must be stable with no major changes in pressure. This value should not exceed a value greater than 10 % of the methods maximum pressure. The delta value and pressure can be viewed in the console window with "Quaternary Solvent Manager" selected in the left side column.
- 9.5.6 Create the Empower spreadsheet for instrument analysis. A spreadsheet can be generated from scratch or can be created using a pre-existing spreadsheet. A spreadsheet may be generated by selecting the far-left icon located at the top of the



- toolbar in the PDA window. Ensure "Load using a previously created sample set method" is selected and click "OK."
- 9.5.6.1 Open the most recent spreadsheet. Select the spreadsheet and click "Open."
- 9.5.6.2 Adjust the spreadsheet as needed and save the spreadsheet by going to "File," "Save Sample Set Method As...." Save the file using the following template: "MM/DD/YYYY Hemp ii." Where 'ii' is the analyst's initials.
- 9.5.7 On the spreadsheet, located at the top left corner, select the "E" as this will highlight all the samples on the spreadsheet. Start the run by clicking the green circle icon located at the top of the PDA window toolbar.
- 9.5.7.1 The "Run Sample Set" window will appear. Select the down arrow next to "Shutdown Method," select "PDA clean up," and select "Run."
- 9.5.7.2 Following analysis, the instrument will automatically go into the shutdown method.
- 9.5.8 Review and integrate the data. Track the instrument results in the assigned laboratory notebook.
- 9.5.9 Update the corresponding control chart.
- 9.5.10 Update the Industrial Hemp Log, with date of analysis, initials of the analyst, "Pass" or "Fail" status, and any comments as needed.
- 9.5.11 Update the Excel hemp worksheet and report results to the Section Supervisor, Lab Director, or designee.
- 9.6 Sample Failure
- 9.6.1 Sample failure equates to a sample concentration level of total  $\Delta 9$  THC on a dry weight basis of greater than 0.3 % plus the measurement of uncertainty (MU). All samples considered a fail must be logged in KDAL Document No. 5173, Industrial Hemp Fail Log and retested in duplicate.
- 9.6.1.1 The analyst must be witnessed weighing failed samples by the Lab Director, QA Manager, or designee.
- 9.6.1.2 Track the lab ID, the initial weight of the "Test Specimen" jar (without lid), the sample amount weighed for testing, the final weight of the "Test Specimen" jar (without lid), the date of analysis, and the results of the re-testing ("Pass" or "Fail").
- 9.6.2 Create a new Excel hemp worksheet (see section 9.1.4) and re-test following sections 9.4 – 9.5 for sample and instrument preparation. See method note 12.1.



## Processing of Industrial Hemp and Determination of Total Delta-9 THC

Document #: 5116

Revision #: 2

Published Date: 4/1/2021 7:40:28 PM

Page 13 of 15

- 9.6.3 Review data and track the instrument results in the appropriate laboratory notebook.
  - 9.6.4 Update the Industrial Hemp Fail Log with date/initials of analysis and "Pass" or "Fail."
  - 9.6.5 Update the Excel hemp worksheet and report results to the Section Supervisor, Lab Director, or designee.
  - 9.7 Sample Reporting
    - 9.7.1 Samples are reported on the Kansas Department of Agriculture Laboratory Report of Analysis.
    - 9.7.2 Sample information, results, and required signatures sections are completed, and the form is scanned and emailed to the Plant Protection and Weed Control Program or submitting individual(s).
  - 9.8 Sample Discard
    - 9.8.1 Samples that have passed are discarded no sooner than two months after the report date. The samples that have failed are held in a safe for a minimum of six months unless an extension is requested by the Industrial Hemp Program or submitting individual(s).
  - 9.9 Sample Disposal
    - 9.9.1 Samples that have passed are to be mixed with a substance (e.g., cat litter) to render them unrecognizable and are disposed of in the dumpster.
    - 9.9.2 Samples that have failed are considered controlled substances and will be transferred to the Riley County Police Department (RCPD) for destruction.
- NOTE:** All steps of the sample disposal process for fail samples will be completed by two authorized KDAL personnel and a DEA Form 41 will be completed to include sample ID and weight.
- 9.9.2.1 On date of disposal, sample weights will be verified and samples will be transferred from jars to brown paper bags (either individually or comingled), filled no more than half full, and sealed.
  - 9.9.2.2 Samples will then be transferred to RCPD where KDAL personnel will stand by until items are placed within the incinerator.
  - 9.9.2.3 Incineration date and time will be documented.

### 10. Calculations

- 10.1 Total  $\Delta 9$  THC concentration = (THCA % x 0.877) + THC %
- 10.2 Moisture adjustment for dry weight total  $\Delta 9$  THC in sample:  
Dry weight % total  $\Delta 9$  THC = [%THC / (100 - % moisture)] x 100.

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**Processing of Industrial Hemp and Determination of Total Delta-9 THC**

**Document #: 5116**

**Revision #: 2**

**Published Date: 4/1/2021 7:40:28 PM**

**Page 14 of 15**

- 10.3 Dry Weight Total THC % will be reported to the nearest ten thousandth, or four decimal places (i.e., 0.3142).
- 10.4 Measurement of Uncertainty (MU) will be reported as a percent (%) plus or minus ( $\pm$ ) to the nearest ten thousandth, or four decimal places (i.e., 0.3142).

**11. Quality Assurance**

- 11.1 A run is a set of samples analyzed daily with corresponding quality control samples and may contain one or more batches. A batch is a collection of lab samples with corresponding required quality control. The maximum number of samples analyzed per batch is 30.
- 11.2 An Initial Calibration Verification (ICV) from a second source calibration standard will be analyzed with each run. The second source results must be within 15 % of the true value. A failing ICV will make an entire run invalid.
- 11.3 A Laboratory Control Sample (LCS) will be analyzed with each batch. When Proficiency Test samples are not available, a second source material with a known value can be used as an LCS. These values must be within three standard deviations to be acceptable. A failing LCS will make an entire run invalid.
- 11.4 A Laboratory Reagent Blank and a Matrix Spike will be analyzed with every run. Matrix spike recoveries are monitored by creating recovery control charts plotting percent recovered. Blanks must be less than half the concentration of the lowest calibration standard. Matrix spike recoveries should be within 30 % of the expected recovery value.
- 11.5 A Duplicate will be analyzed with each batch. Duplicate analysis results are monitored by creating precision control charts plotting Relative Percent Difference (RPD). A duplicate RPD value should be within 10 %.
- 11.6 A Continuing Calibration Verification (CCV) and Continuing Calibration Blank (CCB) will be analyzed every 10 samples and at the end of each run. A CCV should be within 15 % of the true value. A CCB concentration should be less than half the lowest calibration standard. If CCV or CCB is outside the acceptable range, samples not bracketed with passing CCV and CCB will not be acceptable and be retested.
- 11.7 Samples with a total  $\Delta 9$  THC concentration greater than 0.3 % plus the laboratory's Measurement of Uncertainty (MU) will be considered failing and require reanalysis in duplicate. Confirmed violations will be reported to the Industrial Hemp Program so inspectors can collect an additional sample upon request.
- 11.8 Record solution and reagent numbers and expiration dates on KDAL Document No. 5117, Hemp Reagents Worksheet.

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## **Processing of Industrial Hemp and Determination of Total Delta-9 THC**

**Document #: 5116**

**Revision #: 2**

**Published Date: 4/1/2021 7:40:28 PM**

**Page 15 of 15**

### **12. Method Notes**

- 12.1 THCA will naturally degrade over time and decarboxylize to THC. Analysts re-testing samples should expect THCA values to diminish over long periods of time.
- 12.2 All hemp samples must be secured in a locked cabinet when not being processed.
- 12.3 Samples should only be added to the oven when necessary. If additional samples are added to an oven already containing samples that have dried for 8 hours or more, the fresh samples will introduce moisture to the partially dried samples thereby extending the overall drying process. The drying time of partially dried samples should be restarted upon the addition of new samples to the oven.

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