

**B. COLLECTIONS OF INFORMATION EMPLOYING STATISTICAL METHODS**

**THE AGENCY SHOULD BE PREPARED TO JUSTIFY ITS DECISION NOT TO USE STATISTICAL METHODS IN ANY CASE WHERE SUCH METHODS MIGHT REDUCE BURDEN OR IMPROVE ACCURACY OF RESULTS. WHEN ITEM 17 ON THE FORM OMB 83-1 IS CHECKED "YES", THE FOLLOWING DOCUMENTATION SHOULD BE INCLUDED IN THE SUPPORTING STATEMENT TO THE EXTENT THAT IT APPLIES TO THE METHODS PROPOSED.**

- 1. DESCRIBE (INCLUDING A NUMERICAL ESTIMATE) THE POTENTIAL RESPONDENT UNIVERSE AND ANY SAMPLING OR OTHER RESPONDENT SELECTION METHOD TO BE USED. DATA ON THE NUMBER OF ENTITIES (E.G., ESTABLISHMENTS, STATE AND LOCAL GOVERNMENT UNITS, HOUSEHOLDS, OR PERSONS) IN THE UNIVERSE COVERED BY THE COLLECTION AND IN THE CORRESPONDING SAMPLE ARE TO BE PROVIDED IN TABULAR FORM FOR THE UNIVERSE AS A WHOLE AND FOR EACH OF THE STRATA IN THE PROPOSED SAMPLE. INDICATE EXPECTED RESPONSE RATES FOR THE COLLECTION AS A WHOLE. IF THE COLLECTION HAD BEEN CONDUCTED PREVIOUSLY, INCLUDE THE ACTUAL RESPONSE RATE ACHIEVED DURING THE LAST COLLECTION.**

The respondent universe will be a census of all hemp producers across the U.S. in 2020. For the purposes of this survey official hemp producers have to have a hemp license issued by the State Departments of Agriculture. Everyone producing hemp under both the 2014 and 2018 Farm Bills are required to have a license. These producers will range in size from a few plants to hundreds of acres. Working through the State Departments of Agriculture will allow for all producers to be reached. State Departments of Agriculture are the “Gold Standard” for producer lists in the United States. Both the 2014 and 2018 Farm Bill require them to be if they are going to produce hemp. Within the datasets it is possible for one producer to have multiple entries within the dataset. Multiple reasons exist as to why this is the case. First, this is a function of how this industry is developing and processors requiring producers to have individual licenses if they produce for multiple processors. Second, producers can apply for separate licenses to produce multiple end use hemp products. Third, processors in some states apply for a license but have multiple growers and locations. Therefore, it is known and expected that we could have multiple entries and we are collecting a census so we want to insure we allow the survey to be completed for every licensed producer. Furthermore, since the 2014 and 2018 Farm Bills require states to license producers these are the most complete lists available. Each state has different rules and regulations as highlighted in Mark et al. 2020<sup>1</sup>. Thus, we are working with each state for them to send out the survey and/or provide us with a list to send out the survey and will not

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<sup>1</sup> Mark, Tyler, Jonathan Shepherd, David Olson, William Snell, Susan Proper, and Suzanne Thornsbury. February 2020. Economic Viability of Industrial Hemp in the United States: A Review of State Pilot Programs, EIB-217, U.S. Department of Agriculture, Economic Research Service.

be cleaning their lists. This strategy was implemented to carry out the National Hemp Needs survey funded through USDA NIFA<sup>2</sup>. Additional lists have been considered, however, they are incomplete and sample properties are unknown. For example, the list from FSA would only include those producers completing the Farm Service Agency 578 form. This was not a requirement for hemp producers until the 2018 Farm Bill and the Final Rule that takes full effect for the 2022 production period. Thus it is not a viable option. AMS doesn't have a complete list of hemp producers other than those licensed under the USDA Federal Hemp program. This would include the states of Hawaii, Mississippi and New Hampshire. The survey itself employs a hybrid method where each license holder will receive a copy of the survey. They will have the option to complete the paper version or the online version (created in Qualtrics). Since each state has different regulations in place a state like Kentucky will not release physical addresses. Therefore, we will work with them to mail out the survey from their office and the costs to do this are already included within the cooperative agreement between UK and AMS. They will also send out an email to their listserv making license holders aware of the survey.

**2. DESCRIBE THE PROCEDURES FOR THE COLLECTION OF INFORMATION INCLUDING:**

**- STATISTICAL METHODOLOGY FOR STRATIFICATION AND SAMPLE SELECTION;**

The full number of respondents will be approximately 20,000 as reported through the National Industrial Hemp Regulators.<sup>3</sup> The exact number of licenses is unknown as many states have rolling application periods and the number can change daily. Paper surveys will be returned to the University of Kentucky at no cost to the license holder and input by trained graduate and undergraduate researchers. These observations will then be merged with those that completed the survey through the online portal. The expected response rate is 75%.

Once all data has been merged together by the creation team they will do the following.

- Remove any personal identifiers that have been included.
- Evaluate the summary statistics for the data to look for outliers that need to be reviewed for data entry errors. This will be done in conjunction with AMS staff.
- Compare summary statistics to key states (i.e. Kentucky, Colorado, etc.) that annually publish reports on number of and type of license holders.
- For counties that have few than three producers we will combine for each state to maintain anonymity of the producers within reports.

**- ESTIMATION PROCEDURE;**

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<sup>2</sup> Ellison, S. (2021), Hemp (*Cannabis sativa* L.) research priorities: Opinions from United States hemp stakeholders. *GCB Bioenergy*, 13: 562-569. <https://doi.org/10.1111/gcbb.12794>

<sup>3</sup> Hemp Final Rule: <https://www.federalregister.gov/documents/2021/01/19/2021-00967/establishment-of-a-domestic-hemp-production-program>

This survey has been promoted over the past six months and will continue to be promoted until complete. For example, it has been promoted at multiple field days where producers are present and at national regulator and extension meetings. Second, by utilizing the State Departments of Agriculture to send out the survey and assist with promotion to increase the response rate of the survey. Prepared emails will be shared with Departments of Agriculture that can be sent out to their listservs to assist with promotion and reminders as well. The data collection period will take place at the end of harvest. An electronic version of the survey has been developed in Qualtrics and the link will be provided with two emails being sent out by the State Departments of Agriculture. Follow up postcards will also be mailed out after one month of the survey being available. Lastly, if needed the USDA call center may be utilized to follow up with producers who have not responded one month after data collection ends.

- The protocol for the survey administration will be as follows.
  - Promotion of survey through field days and national meetings.
  - Coordinating with Tribal Governments to promote and help with survey administration.
  - Email sent out to producers through individual State Departments of Agriculture and Tribal Governments.
  - Survey mailed out to producers that include an electronic link to survey.
  - Three weeks later a post card with link to survey will mailed.
  - Two weeks later a follow up email will be sent through the State Departments of Agriculture and Tribal Governments.
  - If the desired response rate of 75% is not achieved, then a final email will be sent with the electronic version. In addition to sending out the final email we will also consider utilizing the call center. A Nonresponse Bias Analysis will also be conducted to evaluate nonresponse bias issues that could be available within the data<sup>4</sup>

- **DEGREE OF ACCURACY NEEDED FOR THE PURPOSE DESCRIBED IN THE JUSTIFICATION;**

Standard errors will be calculated differently depending on the type of response (e.g., continuous, proportion). Estimates will be reported at regional or state levels, depending on final response rates. High response rates will enable estimates to be reported at more fine grain levels (e.g., state) whereas low response rates will permit reporting at less fine grain (e.g., ERS region). The entire target population of individual hemp operations using population frames of licensed hemp operations provided by state, tribal, or federal hemp programs is being used. Therefore, this is close to an ideal survey because the sampled population will be close to the target population.

- **UNUSUAL PROBLEMS REQUIRING SPECIALIZED SAMPLING PROCEDURES, AND**

N/A. This will be a census of producers. All producers will be sampled. Should the pandemic continue into the collection time period we would work with State Department of Agriculture to

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<sup>4</sup> Lineback, Joanna Fane, and Katherine J. Thompson. "Conducting nonresponse bias analysis for business surveys." *Proceedings of the American Statistical Association, Section on Government Statistics*. 2010.

send additional electronic versions of the survey out to producers if paper versions of the survey cannot be mailed.

- **ANY USE OF PERIODIC (LESS FREQUENT THAN ANNUAL) DATA COLLECTION CYCLES TO REDUCE BURDEN.**

This is the first ever hemp production cost collection. It is unknown the frequency with which this collection would be collected going forward.

**3. DESCRIBE METHODS TO MAXIMIZE RESPONSE RATES AND TO DEAL WITH ISSUES OF NON-RESPONSE. THE ACCURACY AND RELIABILITY OF INFORMATION COLLECTED MUST BE SHOWN TO BE ADEQUATE FOR INTENDED USES. FOR COLLECTIONS BASED ON SAMPLING, A SPECIAL JUSTIFICATION MUST BE PROVIDED FOR ANY COLLECTION THAT WILL NOT YIELD "RELIABLE" DATA THAT CAN BE GENERALIZED TO THE UNIVERSE STUDIED.**

The protocol for the survey administration will be as follows:

- Promotion of survey through field days and national meetings.
- Coordinating with Tribal Governments to promote and help with survey administration.
- Email sent out to producers through individual State Departments of Agriculture and Tribal Governments.
- Survey mailed out to producers that include an electronic link to survey.
- Three weeks later, a post card with a link to the survey will mailed.
- Two weeks later, a follow up email will be sent through the State Departments of Agriculture and Tribal Governments.
- If the desired response rate of 75% is not achieved, then a final email will be sent with the electronic version. In addition to sending out the final email we will also consider utilizing the call center. A Nonresponse Bias Analysis will also be conducted to evaluate nonresponse bias issues that could be available within the data<sup>5</sup>

**4. DESCRIBE ANY TESTS OF PROCEDURES OR METHODS TO BE UNDERTAKEN. TESTING IS ENCOURAGED AS AN EFFECTIVE MEANS OF REFINING COLLECTIONS OF INFORMATION TO MINIMIZE BURDEN AND IMPROVE UTILITY. TESTS MUST BE APPROVED IF THEY CALL FOR ANSWERS TO IDENTICAL QUESTIONS FROM 10 OR MORE RESPONDENTS. A PROPOSED TEST OR SET OF TESTS MAY BE SUBMITTED FOR APPROVAL SEPARATELY OR IN COMBINATION WITH THE MAIN COLLECTION OF INFORMATION.**

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<sup>5</sup> Lineback, Joanna Fane, and Katherine J. Thompson. "Conducting nonresponse bias analysis for business surveys." *Proceedings of the American Statistical Association, Section on Government Statistics*. 2010.

This is a census of hemp producers and will provide a baseline for future hemp surveys. There are no tests of procedures or methods to be undertaken. Information collected from this survey will provide valuable information on the production costs of hemp. It will also help to inform future surveys of hemp producers and sampling methods. While there are no tests, we have integrated “skip logic” statements heavily throughout the survey to allow respondents to bypass unnecessary parts of the survey. This will only be a concern for producers completing the paper version as those taken the online version should not have this issue. The online version of the survey will be encouraged through the email and postcard communication to producers to minimize this issue. In the data cleaning process this will be a focus for those entering in data from the paper survey. After this inaugural survey, the frequency of responses to various sections can be used to refine future surveys, with the knowledge of how common (or not) respondents each question relevant.

5. **PROVIDE THE NAME AND TELEPHONE NUMBER OF INDIVIDUALS CONSULTED ON STATISTICAL ASPECTS OF THE DESIGN AND THE NAME OF THE AGENCY UNIT, CONTRACTOR(S), GRANTEE(S), OR OTHER PERSON(S) WHO WILL ACTUALLY COLLECT AND/OR ANALYZE THE INFORMATION FOR THE AGENCY.**

Table 1 below is a complete list of all individuals who provided input and pretested the survey instrument. Extensive input from these groups incorporated into the survey to improve working, length, flow, and cognitive load for the license holder.

Table 1: Individuals Pre-testing Survey

First name	Last name	Email	Position/Role
<b>Academics/Focus Group Leads</b>			
Kate	Fuller	<a href="mailto:kate.fuller@montana.edu">kate.fuller@montana.edu</a>	Montana State University
Amy	Hagerman	<a href="mailto:amy.hagerman@okstate.edu">amy.hagerman@okstate.edu</a>	Oklahoma State University
Trey	Malone	<a href="mailto:tmalone@msu.edu">tmalone@msu.edu</a>	Michigan State University
Claudia	Schmidt	<a href="mailto:cschmidt@psu.edu">cschmidt@psu.edu</a>	Pennsylvania State University
Paul	Mitchell	<a href="mailto:pdmitchell@wisc.edu">pdmitchell@wisc.edu</a>	University of Wisconsin
Matt	LeRoux	<a href="mailto:mm28@cornell.edu">mm28@cornell.edu</a>	Cornell University
Becca	Jablonski	<a href="mailto:beccajablonski@gmail.com">beccajablonski@gmail.com</a>	Colorado State University
David	Ripplinger	<a href="mailto:david.ripplinger@ndsu.edu">david.ripplinger@ndsu.edu</a>	North Dakota State University
Jane	Kolodinsky	<a href="mailto:Jane.Kolodinsky@uvm.edu">Jane.Kolodinsky@uvm.edu</a>	University of Vermont
Nathan	Smith	<a href="mailto:nathan5@clermson.edu">nathan5@clermson.edu</a>	Clemson University
<b>State Contacts - Colorado</b>			
Brian	Koontz	<a href="mailto:brian.koontz@state.co.us">brian.koontz@state.co.us</a>	CDA Hemp Program Director
Rick	Novak	<a href="mailto:Rick.Novak@ColoState.edu">Rick.Novak@ColoState.edu</a>	CSU Extension Seed Specialist
Brent	Young	<a href="mailto:Brent.Young@colostate.edu">Brent.Young@colostate.edu</a>	CSU Extension Ag Bus Man Specialist
Jeff	Smith	<a href="mailto:jsmith@hnpfarm.com">jsmith@hnpfarm.com</a>	Hemp Grower 1
Jason	Von Lembke		Hemp Grower 2
<b>State Contacts - Kentucky</b>			
Doris	Hamilton	<a href="mailto:Doris.Hamilton@ky.gov">Doris.Hamilton@ky.gov</a>	KDA Hemp Director
Robert	Pearce	<a href="mailto:rpearce@email.uky.edu">rpearce@email.uky.edu</a>	UK Extension Agronomist
Brennan	Gilkenson		Hemp Grower 1
Joseph	Sisk	<a href="mailto:siskfarm@bellsouth.net">siskfarm@bellsouth.net</a>	Hemp Grower 3
<b>Tribal Contacts</b>			
Dante	Desiderio	<a href="mailto:dante@nafoa.org">dante@nafoa.org</a>	
Trent	Teegerstrom	<a href="mailto:tteegers@ag.arizona.edu">tteegers@ag.arizona.edu</a>	
<b>Industry Contacts</b>			
Eric	Steenstra	<a href="mailto:eric@votehemp.com">eric@votehemp.com</a>	Industry Contact - Vote Hemp
<b>USDA/Governmental Contacts</b>			
Jeff	Gillespie	<a href="mailto:Jeffrey.Gillespie@usda.gov">Jeffrey.Gillespie@usda.gov</a>	USDA ERS
David	Hancock	<a href="mailto:david.w.hancock@usda.gov">david.w.hancock@usda.gov</a>	USDA NASS
Kenneth	Herrell	<a href="mailto:Kenneth.Herrell@usda.gov">Kenneth.Herrell@usda.gov</a>	USDA NASS
Andrew	Kowalski	<a href="mailto:andrew.kowalski@usda.gov">andrew.kowalski@usda.gov</a>	USDA RMA
Sharon	Raszap	<a href="mailto:sharon.raszap@usda.gov">sharon.raszap@usda.gov</a>	UDA FSA
Troy	Hillier	<a href="mailto:troy.hillier@usda.gov">troy.hillier@usda.gov</a>	Office of Chief Economist
<b>AMS Cost of Production Group</b>			
Suzanne	Thornsbury	<a href="mailto:suzanne.thornsbury2@usda.gov">suzanne.thornsbury2@usda.gov</a>	Office of the Chief Scientist
Fiona	Pexton	<a href="mailto:fiona.pexton2@usda.gov">fiona.pexton2@usda.gov</a>	AMS
Heather	Farber-Lau	<a href="mailto:heather.farber-lau2@usda.gov">heather.farber-lau2@usda.gov</a>	AMS
Matt	Pavone	<a href="mailto:matt.pavone2@usda.gov">matt.pavone2@usda.gov</a>	AMS
Katherine	Looft	<a href="mailto:katherine.looft2@usda.gov">katherine.looft2@usda.gov</a>	AMS
William	Richmond	<a href="mailto:william.richmond2@usda.gov">william.richmond2@usda.gov</a>	AMS
Andrew	Hatch	<a href="mailto:andrew.hatch2@usda.gov">andrew.hatch2@usda.gov</a>	AMS
<b>UKY/CSU Group</b>			
Rebecca	Hill	<a href="mailto:rebec.lhill@gmail.com">rebec.lhill@gmail.com</a>	Colorado State University
Tyler	Mark	<a href="mailto:Tyler.Mark@uky.edu">Tyler.Mark@uky.edu</a>	University of Kentucky
Daniel	Mooney	<a href="mailto:Daniel.Mooney@colostate.edu">Daniel.Mooney@colostate.edu</a>	Colorado State University
Regan	Gilmore	<a href="mailto:Regan.Gilmore@colostate.edu">Regan.Gilmore@colostate.edu</a>	Colorado State University
Dawn	Thilmany	<a href="mailto:Dawn.Thilmany@colostate.edu">Dawn.Thilmany@colostate.edu</a>	Colorado State University
Jonathan	Shepherd	<a href="mailto:jdshepherd@uky.edu">jdshepherd@uky.edu</a>	University of Kentucky