



United States  
Department of  
Agriculture

National Agricultural  
Statistics Service

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# **National Animal Health Monitoring System (NAHMS)**

## **Health Management on U.S. Feedlots 2021 Study Phase I Questionnaire**

### **Interviewer's Manual**

# NAHMS Health Management on U.S. Feedlots 2021

## NASS Phase I Questionnaire

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## Definitions

**Antibiotic:** A chemical compound generally produced by molds that inhibits and/or kills certain bacteria. Antibiotics are used against illnesses caused by bacteria.

**Antimicrobial:** Any substance of natural, semisynthetic, or synthetic origin that kills or inhibits the growth of microorganisms but causes little or no damage to the host. Technically, all antibiotics are antimicrobials, but not all antimicrobials are antibiotics. For the purposes of this questionnaire, however, the terms “antimicrobial” and “antibiotic” are considered synonymous, and the term antibiotic is used in the questionnaire because it is more familiar to Producers.

**Antimicrobial use definitions (excerpted from American Veterinary Medical Association (AVMA) website - <https://www.avma.org/policies/avma-definitions-antimicrobial-use-treatment-control-and-prevention>):**

**Antimicrobial prevention of disease (prophylaxis):** On a population basis, prevention is the administration of an antimicrobial to a group of animals, none of which have evidence of disease or infection, when transmission of existing undiagnosed infections, or the introduction of pathogens, is anticipated based on history, clinical judgement, or epidemiological knowledge.

**Antimicrobial control of disease (metaphylaxis):** On a population basis, control is the use of antimicrobials to reduce the incidence of infectious disease in a group of animals that already has some individuals with evidence of infectious disease or evidence of infection.

**Antimicrobial treatment of disease:** Treatment is the administration of an antimicrobial as a remedy for an individual animal with evidence of infectious disease.

**Backgrounded cattle:** An intermediate step in cattle production that begins after weaning, usually at a location different from the farm or ranch of origin. Producers who background cattle help the animals through the stress of weaning and get them ready for placement at their next destination, which could be a feedlot or pasture. Sometimes the terms backgrounder or stocker are used interchangeably, but cattle generally spend a longer time at a stocker operation than a backgrounder operation. In general, backgrounded cattle present a lower risk of introducing disease upon arrival at the feedlot.

**Beef Quality Assurance (BQA):** A national program that raises consumer confidence through offering proper management techniques and a commitment to quality within every segment of the beef industry. Nearly every U.S. State has an active BQA program. The program links all beef Producers with livestock production specialists, veterinarians, nutritionists, marketers, and food purveyors interested in maintaining and improving the quality of the beef they produce. BQA principles are based on good management practices designed to meet the needs of the Nation’s food production system. In addition, BQA programming focuses on educating and training cattle Producers, farm advisors, and veterinarians on animal husbandry practices as well as issues regarding food safety and quality.

**BQA Feedyard Assessment:** An onsite educational tool that allows for assessing and benchmarking key indicators of animal care and welfare as well as feedyard conditions. The assessment has three main areas of focus: animal records, protocols, and facilities/equipment. Assessments might be utilized as a self-assessment, completed by a second party, or conducted by a third-party assessor.

**Cattle on feed:** Cattle for the slaughter market expected to produce a carcass grading select or better. These cattle are fed a high-energy ration with high proportions of grain (or silage) that may also include hay, protein supplement as well as other components. Operations with cattle

being “backgrounded only” for later sale as feeders or for placement in another feedlot were excluded from this study. This questionnaire only collects information about steers and heifers.

**Cattle placed/placement:** This questionnaire is restricted to steers and heifers placed in a feedlot, fed a high energy ration, and intended for the slaughter market. Placement refers to the time that cattle entered the feedlot.

**Feeding period:** The time span beginning when cattle enter the feedlot and ending when cattle are marketed (i.e., shipped for slaughter).

**Feedlot:** An operation that feeds cattle for the slaughter market.

**Feedlot capacity:** The total number of cattle that could be accommodated in the feedlot at one time. For this study, feedlots were categorized as small or large:

**Small:** Feedlot capacity of 50 to 999 head.

**Large:** Feedlot capacity of 1,000 or more head.

**Heifer:** A young female bovine that has not calved.

**Group administration of antibiotics:** For purposes of this questionnaire, administration of an injectable antibiotic to cattle on a population basis rather than on an individual animal basis, that is to the majority of the animals in a pen. Group administration can be for prevention, control, or treatment of disease (see “Antimicrobial use definitions”), while individual administration is for treatment only of individual sick animals. In the 2017 Veterinary Services Antibiotic Use Questionnaire for Cattle on Feed, group administration was defined as administration of an injectable antibiotic to at least 90% of cattle in a pen for the prevention, control, or treatment of disease.

**Ionophore:** A drug administered in feed that promotes the efficient use of feedstuffs by altering the fermentation pattern in the rumen. Monensin, lasalocid, and laidlomycin are the three ionophores approved for use in cattle. All three are approved for improving feed efficiency. Monensin and lasalocid are also approved for prevention and control of coccidiosis. Ionophores are not categorized by the FDA as medically important antimicrobials for humans and do not require a veterinary feed directive.

**Medically important antimicrobial:** Any antimicrobial the FDA deems medically important with respect to the use of that class of antimicrobials for therapeutic use in human medicine. As of January 1, 2017, medically important antimicrobials are no longer approved by the FDA for use in food producing animals for growth promotion purposes, and medically important antimicrobials used in animal feed or water require veterinary oversight (i.e., a veterinary feed directive). Many injectable medically important antimicrobials already require veterinary oversight, although some are available over the counter in many States. All medications formulated for individual bolus dosing to cattle (e.g., sulfamethazine or Supra Sulfa III) are currently available over the counter in most States.

**Preconditioned cattle:** Preconditioning refers to a management practice designed to prepare calves to better adapt to a new location. Preconditioned calves are usually held on the operation of origin for a set period (e.g., 1-2 months) after weaning, allowing calves to recover from the stress of weaning before they leave the operation of origin. Practices typically used in a preconditioning program include vaccination, castration, dehorning (if necessary), and introduction to a feed bunk. Preconditioned calves present a lower risk of having disease upon arrival at a feedlot.

**Steer:** A castrated male bovine.

**Stocker cattle:** Refers to cattle typically put on pasture after weaning and before being placed in a feedlot. Stocker cattle are often sent to a location other than the farm or ranch of origin and are often sold as yearlings, which have a low risk of disease upon feedlot placement.

**Veterinary Feed Directive (VFD):** A written order (paper or electronic) by a licensed veterinarian approving the use of an antimicrobial in feed, in the context of a valid veterinarian-client-patient relationship. Since the full implementation of FDA Guidance for Industry #213 on January 1, 2017, a VFD is required for use of medically important antimicrobials in feed. The use of medically important antimicrobials for production purposes (e.g., growth promotion) is illegal. Medically important antimicrobials may only legally be used for therapeutic purposes.

**People involved in questionnaire administration:** Described below are the individuals involved in administration of this questionnaire:

**Enumerator:** Refers to the individual administering (i.e., asking the questions) for the NAHMS Health Management on U.S. Feedlots 2021 Phase I Questionnaire. Throughout this manual, the enumerator is often referred to as “you.”

**Regional Field Offices (RFO):** NASS has 12 regional offices across the country, each of which is responsible for the statistical work in several states.

**Respondent:** The individual who answers the questions in the NAHMS Health Management on U.S. Feedlots 2021 Phase I Questionnaire. Throughout this manual, the Respondent is often referred to as the “Producer.”

**Supervisor:** The NASS supervisor who oversees the enumerator.

## I. Before the NASS Interview: Background Information and Training Requirements

### Study Objectives

This study will survey feedlots about cattle health and health management practices used from January 1, 2020 to December 31, 2020. Feedlots in the participating States<sup>1</sup> with a capacity of 50 head or more are eligible to participate.

#### **This collection will support the following objectives:**

1. Describe health management practices on U.S. feedlots with 50 or more head
2. Estimate the prevalence of important feedlot cattle diseases
3. Describe antibiotic use and stewardship practices on U.S. feedlots
4. Describe trends in feedlot cattle health management practices and important feedlot cattle diseases

### Background Information

The NAHMS Health Management on U.S. Feedlots 2021 study is being conducted jointly by the National Agricultural Statistics Service (NASS) and the National Animal Health Monitoring System (NAHMS). NAHMS is a **non-regulatory** information gathering and disseminating program within the Animal and Plant Health Inspection Service (APHIS), an agency of the U.S. Department of Agriculture.

The purpose of the NAHMS program is to collect and analyze animal health data to provide scientifically sound and current information on the health status of U.S. livestock and poultry. The information is intended to benefit both livestock Producers (by facilitating efficient production and animal welfare) and the general public (by facilitating a safer and higher-quality food supply). Special emphasis is placed on obtaining valid estimates of management practices, production levels, and disease status of the national herd.

The NAHMS program is not designed to detect, regulate, or eradicate major epidemic diseases, but rather to learn about other less-well-known health problems and food safety and quality issues. As the food-animal industry grows more sophisticated, and production becomes more concentrated in large, confined facilities, demand increases for information on the impact of health problems. These problems are often related to animal genetics, herd management practices, the environment in which the herd is located, and exposure to infectious agents. The NAHMS program attempts to measure the occurrence of these conditions and to report the findings to the livestock industry, as well as to the general public. Additionally, as the livestock industry addresses concerns with food quality and food safety, it needs valid information on which to base decisions.

The NAHMS program compiles some of its information from sources other than surveys of Producers. These sources include other government agencies, livestock industry

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<sup>1</sup> Large (≥1000 head) only: MT, OK, UT, and WA

Small (50–999 head) only: IN, MI, OH, PA, and WI

Both large and small: CA, CO, ID, IL, IA, KS, MN, MO, ND, NE, SD, TX, and WY

organizations, and universities. Surveys of livestock Producers are conducted to assemble data that are not available elsewhere.

NAHMS was started in 1983. In the first few years after it was established, animal health and economic data were collected for various types of livestock through several State programs. Since 1989, surveys have been national in scope and have focused on hogs from farrowing to market, dairy cattle, cow-calf operations, cattle-on-feed operations, equids, catfish, poultry, goats, sheep, bison, and cervids. NASS State offices and NASDA field enumerators were involved in most of these projects.

NAHMS has conducted multiple studies on feedlot cattle, including the Cattle on Feed Evaluation 1994 study, the Feedlot 1999 study, the Feedlot 2011 study, and the Antibiotic Use and Stewardship on U.S. Feedlots 2017 study.

The NAHMS Health Management on U.S. Feedlots 2021 study is designed to provide a snapshot of current cattle health management practices. The information collected will also allow for the analysis of trends in specific topics related to cattle health, based on previous NAHMS feedlot studies. Priority issues facing the industry regarding feedlot cattle health were identified via responses to a needs assessment survey conducted by NAHMS in 2019 and from discussions with representatives of various segments of the feedlot industry, including Producer associations, feedlot veterinarians, and university and extension experts.

### **Benefits to Participating**

Reports published from this study will benefit the U.S. feedlot industry by providing current and scientifically valid estimates to:

- Aid in understanding disease preparedness strengths and vulnerabilities;
- Help policymakers and industry stakeholders make informed decisions;
- Identify research and development needs on vital issues related to feedlot cattle health;
- Enable economic analyses of the health and productivity of the U.S. feedlot industry;
- Identify educational needs and opportunities related to feedlot cattle health;
- Provide benchmark data on important feedlot cattle health management practices to inform quality assurance programs; and
- Provide transparent, credible, independent information on U.S. feedlot industry practices that is not collected by the industry itself.

These points may be useful in persuading a reluctant Producer to participate in the survey.

### **Overview of Phase I Data Collection Conducted by NASS**

The Phase I NASS portion of the NAHMS Health Management on U.S. Feedlots 2021 study will be conducted from March 1 through April 30, 2021. A random sample of 5,342 feedlots with a capacity of 50 or more head will be taken. State offices will mail a pre-survey packet to sampled operations, including a pre-survey letter, study launch sheet, a blank copy of the survey with a 17-digit web-form code, and a supplemental sheet to help respondents answer specific questions on the survey. These materials will be provided to you (e.g., by your Regional Field Office (RFO)) so that you may refer to them during the interview.

**Eligibility criteria:** There are two components to the study: the large capacity component will include all operations with 1,000 or more head capacity in 17 States, and the small capacity component will include selected operations with 50-999 head capacity in 18 States. The same questionnaire and procedures will be followed for each component.

All feedlots with 1,000 or more head capacity will be selected to participate in the study, about 2,200 total in the 17 States.

A sample of about 3,150 feedlots with 50-999 head capacity will be selected from an estimated population of about 14,000 operations with 50-999 head capacity in the 18 States.

**Cattle on feed** are defined as steers and heifers being fed a high energy ration that are expected to produce a carcass that will grade select or better. The cattle covered by this definition has the same inclusion and exclusion criteria as the monthly NASS Cattle on Feed survey:

- INCLUDE cattle being fed by you for others.
- EXCLUDE any of your cattle being custom fed in feedlots operated by others.
- EXCLUDE cattle being "backgrounded only" for sale as feeders, for later placement on feed in another feedlot, or to be returned to pasture.
- EXCLUDE cows and bulls being fed by you for the slaughter market.

**The last page of the Phase I Questionnaire is Section C—Office Use Only. All operations should have this section filled out, even if they are ineligible for the study, refuse, or are inaccessible.**

***Information provided in this manual will focus on Phase I of the study, the Phase I Questionnaire, and your role in the data collection process.***

Near the end of the Phase I interview, enumerators will ask Producers who complete the Phase I Questionnaire to give NASS permission to release the Producer's name and contact information to APHIS-Veterinary Services (VS)-NAHMS for participation in an additional farm visit and questionnaire. This consent is usually obtained via a written form, but given that in-person interviews are not likely to be conducted for this study, the consent will be captured in Question 24 in Section B. In trying to obtain consent, enumerators should briefly talk about Phase II of the study and provide the Producer with informational material that explains Phase II and the benefits of participation in this phase of the study. All Producers who provide consent to participate in Phase II will be contacted by USDA-APHIS-VS.

### **Overview of Phase II Data Collection Conducted by Veterinary Services**

Phase II of the NAHMS Health Management on U.S. Feedlots 2021 study will take place June 14 through August 6, 2021, and is planned to involve a face-to-face interview by a Veterinary Medical Officer (VMO) or an Animal Health Technician (AHT). Feedlots with 50 head or more capacity that completed the Phase I questionnaire are eligible to continue to Phase II. The Phase II questionnaire includes questions about general health management practices, important feedlot cattle diseases, antibiotic use, nutrition, and biosecurity.

Participation in the NAHMS Health Management on U.S. Feedlots 2021 study is

voluntary. Producers may choose to answer every question, skip certain questions or sections, or end the interview at any time.

NAHMS has designated one (or two in some States) VMOs in each State to serve as the State NAHMS Coordinator for Phase II of the NAHMS Health Management on U.S. Feedlots 2021 study. The State NAHMS Coordinator will be available to assist you and the State NASS office. A list of the NAHMS Health Management on U.S. Feedlots 2021 study State coordinators will be provided to you during training and can also be obtained from your State NASS office or RFO.

### Forms and Materials

The following materials, which you will receive from the Regional Field Office, are described more fully in this manual.

1. **NAHMS Health Management on U.S. Feedlots 2021 Phase I Questionnaire**  
This is a questionnaire that will either be self-administered by Producers via computer-assisted web interview (CAWI) or administered by paper-assisted telephone interview (PATI) or computer-assisted telephone interview (CATI) by a NASS enumerator. The questionnaire collects data on cattle inventory, general antibiotic use and stewardship, and other management practices used on U.S. feedlots. The questionnaire is to be administered between March 1 through April 30 of 2021.
2. **Additional materials in the pre-survey packet (helpful for both Producer and Enumerator to have on hand for the interview)**
  - a. **Pre-survey letter**  
Provides general background information for the Producer to understand the purpose of the study, its benefits, its request of them, and encouragement for them to participate. It also includes a number to NASS customer service in case they have questions regarding the survey.
  - b. **Study Launch Sheet**  
Provides additional details regarding the study design, objectives, and benefits to the producer and the industry, including quotes from feedlot industry representatives in support of the study.
  - c. **Appendices document**
  - d. **Appendix A – Reference Map for Section A, Question 11**  
A map to help the Producer answer Question A.11, regarding source of cattle placed on feed.
  - e. **Appendix B – Examples of USDA Official ID methods for Section A, Question 15**  
A set of images, along with a link to an online pdf document with additional information, if needed, to help the Producer answer Question A.15 regarding USDA official identification tags.
  - f. **Appendix C – Examples of Types of Housing for Section A, Question 16**  
A set of images providing some examples of cattle feedlot housing types to help the Producer answer Question A.16.

g. **Appendix D - NAHMS Health Management on U.S. Feedlots 2021  
Consent to Contact**

This includes full informed consent form language for Producers who complete Phase I to grant consent to be contacted by an APHIS-designated data collector for Phase II of the study. Since in-person interviews are not likely to be conducted for this study, the consent will be captured in Question 24 in Section B rather than by this paper form.

h. **Appendix E - NAHMS Health Management on U.S. Feedlots 2021  
NASS Informed Consent for Feedlots in the State of California**

This includes full informed consent form language only for California Producers who complete Phase I to grant consent to release California state level aggregate data obtained from the Phase I Questionnaire to the California Department of Food and Agriculture for purposes of fulfilling California Food and Agricultural Codes 13300-14408. Since in-person interviews are not likely to be conducted for this study, the consent will be captured in Question 25 in Section B rather than by this paper form.

***Only to be completed by and only provided to operations in California.***

### **CIPSEA Information**

NAHMS is a recognized statistical unit by the U.S. Office of Management and Budget. All information acquired for the NAHMS Health Management on U.S. Feedlots 2021 study will be used for statistical purposes only and will be treated as confidential in accordance with the Confidential Information Protection and Statistical Efficiency Act (CIPSEA). Only summary estimates based on the inference population will be reported. Data collected under CIPSEA are protected from Freedom of Information Act (FOIA) requests.

CIPSEA allows NASS agents to collect data that are limited to statistical use only. All information collected during the NAHMS Health Management on U.S. Feedlots 2021 study is protected from disclosure in identifiable form (i.e., the identity of the Respondent will not be disclosed). All identifiable information must be secured when not in use. All publications will use statistical aggregates and must clear a disclosure review process prior to distribution. No individual-level responses will be published.

Please note that the protection provided by CIPSEA only applies to this feedlot health study. Activities initiated by the Producer unrelated to this feedlot health study, such as testing for movement or sale, may cause unrelated regulatory action.

### **Who to Interview**

Interview the feedlot owner, manager, or veterinarian if possible. Information collected from other people is often less accurate. If the Producer says someone else is more knowledgeable, interview that person. There may be sections of the questionnaire that require the response of a different person who is knowledgeable about that section. Encourage Producers to have the operation records on hand. If records are used, information provided will likely be more accurate, and the interview will take less time.

### Initial Contact with Respondent

Thoroughly familiarize yourself with the “NAHMS Health Management on U.S. Feedlots 2021 Phase I Questionnaire” before you call the Respondents, so you can give them an idea of the kind of information that will be collected. Use this manual to familiarize yourself with the questionnaire. The Phase I Questionnaire asks about cattle inventory, sourcing of cattle, general management including housing and identification, antibiotic use and stewardship, and other management practices such as use of veterinarians.

Familiarize yourself with the Respondent’s feedlot capacity and location given to you by the Regional Field Office.

Call the Respondent and identify yourself. Explain how you obtained the Respondent’s name and ask if you can talk to him/her now or schedule an appointment at a more convenient time to conduct the telephone interview.

Make an appointment for the interview. Explain what will be covered and the time involved (about 51 minutes to complete the “Health Management on U.S. Feedlots 2021 Phase I Questionnaire”). Tell the Respondent that it will help if he or she has records available during the interview. For example, specific records for cattle inventory may expedite the interview. Let the Producer know that they can access the Phase I Questionnaire on the NAHMS website (<http://www.aphis.usda.gov/nahms> under the “Feedlot Studies” link) to get a preview of the interview.

### Items to use during questionnaire administration

- NAHMS Health Management on U.S. Feedlots 2021 Phase I Questionnaire—NASS Visit Manual
- NAHMS Health Management on U.S. Feedlots 2021 Phase I Questionnaire
- NAHMS Health Management on U.S. Feedlots 2021 pre-survey letter
- NAHMS Health Management on U.S. Feedlots 2021 study launch sheet
- Appendices for The Health Management on U.S. Feedlots 2021 Phase 1 Questionnaire
- Pen/pencils
- Calculator
- Contact information to communicate with the respondent in case of phone disconnection mid-interview



United States Department of Agriculture

## NAHMS Health Management on U.S. Feedlots 2021 Study Launch



From March through August 2021, the USDA’s National Animal Health Monitoring System (NAHMS), in collaboration with the National Agricultural Statistics Service, will conduct a national study focusing on cattle health and management on U.S. feedlots with at least 50 head. The NAHMS Health Management on U.S. Feedlots, 2021 study is designed to provide a snapshot of current feedlot cattle health management practices. The information collected will also allow for the analysis of trends in specific topics related to cattle health, based on previous NAHMS feedlot studies.



### Background



NAHMS collects scientifically accurate data for U.S. livestock, poultry, and aquaculture industries on a rotating basis. NAHMS studies are voluntary and confidential. For this feedlot study, priority issues facing the industry regarding cattle health were identified via responses to a needs assessment questionnaire and from discussions with representatives from various segments of the feedlot industry, including producer associations, feedlot veterinarians, and university and extension experts.

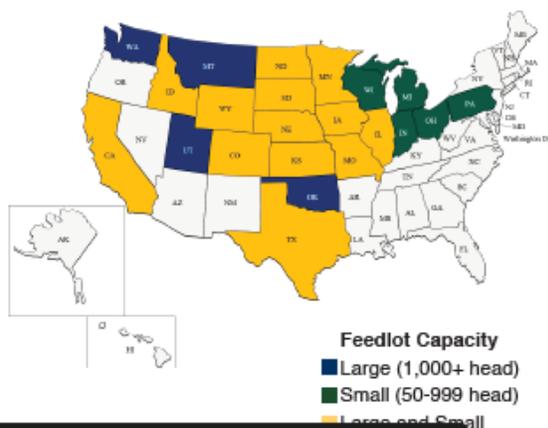


### Study Objectives

The NAHMS Health Management on U.S. Feedlots, 2021 study is designed to provide stakeholders with valuable information about the U.S. feedlot industry. This study will

- Describe health management practices on U.S. feedlots with 50 or more head,
- Estimate the prevalence of important feedlot cattle diseases,
- Describe antibiotic use and stewardship practices on U.S. feedlots, and
- Describe trends in feedlot cattle health management practices and important feedlot cattle diseases.

Figure 1. States participating in the NAHMS Health Management on U.S. Feedlots, 2021 study, by feedlot capacity



*“The National Cattlemen’s Beef Association appreciates the efforts of NAHMS to provide accurate and robust data for the U.S. beef cattle industry that can be used to detail trends in health management and antimicrobial use for feedyard cattle.”*

Mary Ann Kniebel, Vice Chair of NCBA’s Cattle Health and Well-Being Committee

*“The NAHMS reports for Cow/Calf and Feedlot have for decades provided solid, non-biased information to rancher and feedlot managers to help them understand how their colleagues in the beef industry manage cattle. From my long history as a veterinarian serving beef producers, I ask you to sincerely consider supporting the NAHMS survey efforts.”*

Dee Griffin, DVM, Director, VERO (Veterinary Education, Research & Outreach) Program, Texas A&M University College of Veterinary Medicine





## Study Activities

Participating in any NAHMS study is voluntary. If you are selected to participate in the Health Management on U.S. Feedlots, 2021 study and decide to do so, your answers will statistically represent many other producers in your State.

Representatives from NASS will visit participating operations from March through April 2021 to complete a questionnaire. If participants choose to continue in the study, USDA or State veterinary health professionals will visit feedlots from June through August 2021 to complete a second questionnaire.



## Benefits to Participating

Reports published from this study will benefit the U.S. feedlot industry by providing current and scientifically valid estimates to

- Aid in understanding disease preparedness strengths and vulnerabilities,
- Help policymakers and industry stakeholders make informed decisions,
- Identify research and development needs on vital issues related to feedlot cattle health,
- Enable economic analyses of the health and productivity of the U.S. feedlot industry,
- Identify educational needs and opportunities related to feedlot cattle health,
- Provide benchmark data on important feedlot cattle health management practices to inform quality assurance programs, and
- Provide transparent, credible, independent information on U.S. feedlot industry practices that is not collected by the industry itself.

## NAHMS Feedlot Studies Have Impact!

- The NAHMS Feedlot 1994 and 1999 studies helped pioneer further research into injection sites, branding locations, and cattle handling practices, which led to data benchmarking for beef quality assurance programs.
- The NAHMS Feedlot 1994 study provided the industry's first look into the prevalence of *E. coli* O157:H7 shedding by feedlot cattle.
- The NAHMS Feedlot 2011 study provided data that were used to inform an economic analysis focusing on the market impacts of reducing the prevalence of bovine respiratory disease in feedlot cattle.
- Almost 1,500 scientific and industry publications have referenced NAHMS feedlot data since 1990.

*"NAHMS studies provide critical information for animal science, veterinary science, and many other disciplines involving teaching and research in beef feedlot production. These data are used as a component of the Beef Checkoff's National Beef Quality Audit every 5 years, as well as a plethora of other applied research efforts. We should all support and advocate for contributing to this study!"*

Keith Belk, Ph.D., Animal Sciences Department Head at Colorado State University

*"NAHMS provides us with a snapshot of how our industry partners are operating their business and making decisions, serving as a benchmark and gut-check for us in making decisions on how to run our business. This helps us stay open-minded and current in today's practice of feeding cattle."*

Josh Szasz, DVM, Ph.D., Five Rivers Cattle Feeding



## Scientific Approach

NAHMS was established to collect accurate and valuable information on animal health and management in the United States. NAHMS studies are national in scope, science based, statistically valid, collaborative, voluntary, and anonymous.



## Confidentiality

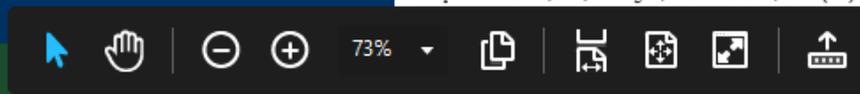
NAHMS is a recognized statistical unit by the Office of Management and Budget. All information acquired for the NAHMS Health Management on U.S. Feedlots, 2021 study will be used for statistical purposes only and will be treated as confidential in accordance with the Confidential Information Protection and Statistical Efficiency Act (CIPSEA). Only summary estimates based on the inference population will be reported. Data collected under CIPSEA are protected from Freedom of Information requests.



## For More Information

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 Phone: 970.494.7000  
 Email: [NAHMS@usda.gov](mailto:NAHMS@usda.gov)  
 Or visit NAHMS at: <http://www.aphis.usda.gov/naahms>  
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## **II. Completing the NAHMS Health Management on U.S. Feedlots 2021 Phase I Questionnaire**

### **General Instructions**

The questionnaire includes questions about cattle inventory, sourcing of cattle, general management including housing and identification, antibiotic use and stewardship, and other management practices such as use of veterinarians. Read all questions as written and follow instructions carefully. **DO NOT LEAVE ANY QUESTIONS BLANK** unless instructed to skip or the Producer does not wish to answer.

This questionnaire was originally scheduled to be administered in 2020, but due to COVID-19, it was postponed to 2021. COVID-19 impacted the operation of meatpacking plants, which often led to feedlots holding cattle longer than normal prior to slaughter. COVID-19 could have had other effects, such as the frequency with which a veterinarian was present on the operation. Several questions have been added to the questionnaire to capture effects that COVID-19 may have had on feedlot operations.

If the response is zero (0), enter the number 0; do not leave the response blank. If the Producer does not know, work with him or her to try to estimate the answer.

If the Producer does not know an answer, indicate that the producer did not know (e.g., by selecting the provided “DK” (Don’t Know) option, writing “DK” in the margins, or indicating as such in the CATI instrument) to indicate why the question was not answered. If the Producer refuses to respond to a question, indicate that the question was refused (e.g., by writing “R” (refused) in the margins or indicating as such in the CATI instrument) to indicate why the question was not answered.

Please write notes in the margins to explain unusual answers.

If the answer is unusual or quality of the data is questionable, record the answer and write comments next to the question. Do not hesitate to write comments directly on the questionnaire. We would rather have a lengthy explanation for a perplexing answer than no explanation at all.

NAHMS is a voluntary program. If the Producer does not want to answer a question, respect this request, make a note on the questionnaire, and move on to the next question.

At times during the interview, a Respondent may feel uncomfortable providing the requested data without consulting records. Respondents should be given additional time to look up the information or report it by telephone to you later as long as the timeliness of data submission is not adversely affected. Also, some Respondents may be reluctant to provide estimates if they don’t have records. In this case, the Respondent should be encouraged to respond, and the circumstances for the response should be noted in the margin next to the pertinent question. However, if the Respondent is unable to provide an accurate estimate, “DK” can be noted. If the Producer declines to answer, “R” can be noted.

### EPAID (State FIPS + Operation ID)

The EPAID, or External Project Agreement Identification, number is composed of two parts. The first is the State FIPS code for the State that the Producer's operation is associated with. The second part is the unique ID code for the operation.

Ensure the 2-digit FIPS code for the State: CA-06, CO-08, ID-16, IL-17, IN-18, IA-19, KS-20, MI-26, MN-27, MO-29, MT-30, NE-31, ND-38, OH-39, OK-40, PA-42, SD-46, TX-48, UT-49, WA-53, WI-55, WY-56 is correctly displayed as the first two digits of the EPAID on the questionnaire label.

Also, ensure the remaining EPAID digits are a series of zeroes followed by an operation ID number are recorded on the questionnaire label.

### Date

Enter the interview date in MM/DD/YY format.

Make sure you write the EPAID at the top of each page. This is needed in case pages get separated (not relevant for self-administered questionnaires or CATI).

### Beginning time

Enter the beginning time for the interview in military format.

### Non-respondent documentation

We must account for all farms selected by NASS. If a Respondent declines to participate, complete the "Section C - Office Use Only" section on page 11 of the questionnaire. Ensure the EPAID is recorded and complete the interview response code (Question C.1), refusal response code (Question C.2), and ending time. Nothing else on the Office Use page needs to be completed for non-respondents.

In addition, if a Producer is otherwise out of scope (didn't have any cattle on feed placed in calendar year 2020, were a backrounder/stocker operation only, were out of business or out of scope), ensure the EPAID is recorded and complete the interview response code (Question C.1).

If the Producer was not contacted (inaccessible or office hold), ensure the EPAID is recorded and complete the interview response code (Question C.1).

### Cattle types for inclusion in study

Unless otherwise noted, all questions refer to the 12-month period from January 1, 2020 to December 31, 2021.

Questions in this survey ask about all cattle and calves placed on feed during that time period on feed for the slaughter market, regardless of ownership, on this particular feedlot.

- **Include** cattle being fed by you for others.
- **Exclude** any of your cattle being custom fed in feedlots operated by others.

- **Exclude** cattle being “backgrounded only” for sale as feeders, for later placement on feed in another feedlot, or to be returned to pasture.
- **Exclude** cows and bulls being fed by you for the slaughter market.

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**Why is NAHMS excluding backgrounder/stocker cattle and cows and bulls on feed?** NASS does not have a list of backgrounder/stocker operations in the U.S., so population-based estimates cannot be made for backgrounder/stocker operations. We are not attempting to provide estimates for all segments of the feedlot industry. Instead, we are providing estimates for the largest segment (steers and heifers in terminal feedlots destined for slaughter). Health management practices for cows and bulls in feedlots are likely to be different compared with steers and heifers, and we want to capture the most commonly used practices, not all practices.

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**What if this feedlot is owned by a company with additional feedlots in other States or locations?** Complete the questionnaire for this feedlot only. The additional feedlots owned by the company could have been selected for participation in the study separately.

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### Section A-Cattle on Feed

Unless otherwise noted, all questions in this section refer to the period from January 1, 2020 to December 31, 2020.

#### **Question 1. Steers and heifers placed on feed**

Enter the total number of steers and heifers placed on feed for the slaughter market on this operation during the period from January 1, 2020 to December 31, 2020. “Placed on feed” means the cattle entered the feedlot. Make sure you follow the instructions on the previous page on what types of cattle to include. Note that some cow-calf operations also operate a feedlot, and these operations should also be included.

**[If question 1 = 0, the operation is ineligible for the study. Answer questions 1a, 1b, and 1c and then SKIP to section C and complete the Office Use Only questions.]**

#### **Question 1.a. Difference in placements in 2020 compared with 2019 due to COVID-19 or its effects**

The number of cattle placed in 2020 could have been different from the number placed in 2019 due to COVID-19 or its effects. For example, due to cattle remaining on the operation longer than normal due to slaughter plant shutdowns due to COVID-19, there might not have been room to add cattle while the slaughter plants were shut down. If the number of cattle placed in 2020 was different from the number placed in 2019 due to COVID-19, answer “yes.” Otherwise, answer “no.”

**[If question 1.a. = No, SKIP to Question 2.]**

#### **Question 1.b. Number of cattle placed in 2020 higher or lower than in 2019 due to COVID-19 or its effects**

If the number of cattle placed in 2020 was higher than the number placed in 2019 due to COVID-19 or its effects, select “more than 2019.” If the number of cattle placed in 2020

was lower than the number placed in 2019 due to COVID-19 or its effects, select “fewer than 2019.”

### **Question 1.c. Difference in placements between 2020 and 2019 in terms of number of cattle**

Enter how many more or fewer cattle were placed in 2020 compared with 2019 due to COVID-19 or its effects.

### **Question 2. One-time capacity of feedlot**

Enter the maximum total number of steers and heifers that the feedlot can have at any given time. The total inventory on a feedlot can fluctuate throughout the year, and this question is asking about the maximum capacity of the feedlot.

### **Question 3. Cattle breed types and weights at placement**

Enter the total number of beef breeds with an arrival weight of less than 400 pounds that were placed on feed from January 1, 2020 to December 31, 2020. Then repeat this information for beef breeds with arrival weights of 400 to 699 pounds, 700 to 899 pounds, and equal to or greater than 900 pounds. Then repeat this information for dairy breeds or dairy cross breeds (e.g., dairy cattle crossed with beef cattle or Holsteins crossed with Jerseys). Enter the totals as instructed. The number for 3.i should match the number entered for question 1.

In Section A, many questions will ask for data reported by arrival weight categories. A similar format has been used in previous NAHMS studies, and we use these categories so comparisons can be made across studies. In previous NAHMS studies, we have used categories of less than 700 lb at arrival or greater than or equal to 700 lb at arrival. We wanted to learn more details about cattle at different weights at arrival in this study, so we created a total of four categories for this survey: less than 400 lb at arrival, 400 to 699 lb at arrival, 700-899 lb at arrival and equal to or greater than 900 lb at arrival. The 700-899 lb at arrival and equal to or greater than 900 lb at arrival categories are combined for most questions; they are only asked for separately in this question (Question 3) and in Question 4 (Average days on feed). We expect that some health management practices will differ among the arrival weight classes:

- Cattle less than 400 lb at arrival at the feedlot are often dairy or dairy cross breeds, and they have different risk factors for disease. Beef breeds less than 400 lb at arrival have the highest risk of disease compared with beef breeds at other placement weights.
- Cattle 400 to 699 lb at arrival at the feedlot are more likely to be coming to the feedlot shortly after weaning. These cattle may be affected by the stress of weaning, making them more susceptible to disease than beef breeds at heavier weights at placement.
- Cattle 700-899 lb at arrival or equal to or greater than 900 lb at arrival to the feedlot are more likely to have been backgrounded after weaning. Backgrounded (or stocker) cattle are typically put on pasture or put on feed after weaning at a location different from where they were born. After gaining a few hundred pounds, these cattle are moved to the feedlot. These cattle have recovered from the stress of weaning, so they are at lower risk for developing disease.

### **Question 4.a. through d. Average days on feed for beef breeds**

Enter the average number of days on feed, i.e., from placement to marketing, for beef breeds of the listed arrival weights placed on feed from January 1, 2020 to December 31, 2020. The numbers used to estimate these averages should be for the entire feeding period for all cattle. For example, for cattle placed in November 2020, the feeding period would extend into 2021, and the time spent on feed in 2021 should be included in the average days on feed. If the Producer is unable to estimate the average days on feed for any of the breed type and arrival weight categories, check “DK” for “Don’t Know.”

**Question 4.e. Difference in average days on feed for beef breeds in 2020 compared with 2019 due to COVID-19 or its effects**

Because of slaughter plant closures due to COVID-19 or its effects, many feedlots had to hold cattle longer than normal. If the average days on feed for beef breeds in 2020 was different from the average days on feed in 2019, answer “yes.” Otherwise, answer “no.”

**[If question 4e = No, SKIP to Question 4g.]**

**Question 4.f. Average days on feed for beef breeds in 2020 longer or shorter compared with 2019 due to COVID-19 or its effects**

If the average days on feed for beef breeds in 2020 was longer than in 2019 due to COVID-19 or its effects, select “longer than 2019.” If the average days on feed for beef breeds in 2020 was shorter than in 2019 due to COVID-19 or its effects, select “shorter than 2019.”

**Question 4.g. through j. Average days on feed for dairy breeds**

Enter the average number of days on feed, i.e., from placement to marketing, for dairy breeds of the listed arrival weights placed on feed from January 1, 2020 to December 31, 2020. The numbers used to estimate these averages should be for the entire feeding period for all cattle. For example, for cattle placed in November 2020, the feeding period would extend into 2021, and the time spent on feed in 2021 should be included in the average days on feed. If the Producer is unable to estimate the average days on feed for any of the breed type and arrival weight categories, check “DK” for “Don’t Know.”

**Question 4.k. Difference in average days on feed for dairy breeds in 2020 compared with 2019 due to COVID-19 or its effects**

Because of slaughter plant closures due to COVID-19 or its effects, many feedlots had to hold cattle longer than normal. If the average days on feed for dairy breeds in 2020 was different from the average days on feed in 2019, answer “yes.” Otherwise, answer “no.”

**[If question 4k = No, SKIP to Question 5.]**

**Question 4.l. Average days on feed for dairy breeds in 2020 longer or shorter compared with 2019 due to COVID-19 or its effects**

If the average days on feed for dairy breeds in 2020 was longer than in 2019 due to COVID-19 or its effects, select “longer than 2019.” If the average days on feed for dairy breeds in 2020 was shorter than in 2019 due to COVID-19 or its effects, select “shorter

than 2019.”

**Question 5. Percentage or number of deaths from January 1, 2020 to December 31, 2020 by breed type and arrival weight**

For each of the breed type and arrival weight categories listed, enter the number that died from January 1, 2020 to December 31, 2020. Producers can report either the number of cattle of each category that died or the percent of cattle that died; record this information in the appropriate column. Note that this question and all following questions that ask for data by weight class combine the 700-899 lb at arrival category and the equal to or greater than 900 lb at arrival category. If the Producer is unable to estimate the percentage or number of cattle that died for any of the breed type and arrival weight categories, check “DK” for “Don’t Know”.

**Question 6. Percentage or number of cattle placed on feed born and raised on the operation**

Of the cattle placed on feed from January 1, 2020 to December 31, 2020, record the percent or the number of cattle that were born and raised on this operation. Some cow-calf Producers also operate a feedlot and raise their own cattle from birth to marketing for slaughter, and we want to see how common this practice is. In addition, cattle that remain on the same operation from birth to marketing for slaughter have less risk for disease because they do not have to endure the stress of being moved off the operation.

**[If question 6 = 100% or # of cattle is equal to the inventory of cattle reported in question 1, SKIP to question 13. In other words, if all cattle placed on the feedlot are also born and raised on the same operation, SKIP to question 13.]**

**Question 7. Percentage or number of cattle placed on feed by source**

Cattle that go through a sale barn are often commingled with cattle from other operations, which can make them susceptible to disease from the cattle they are commingled with. Thus, sale barn cattle are generally higher risk cattle than those obtained directly from a cow-calf or backgrounder/stocker operation. Of the cattle placed on feed from January 1, 2020 to December 31, 2020, record the percent or the number of cattle by the source of the cattle (the last place they were before they were came to this feedlot). Exclude any cattle that were born and raised on this operation (question 6). Options include:

- a. Obtained directly from a cow-calf operation, including cow-calf operations owned by or associated with this feedlot but not in the same location as this feedlot. If the feedlot operation owns a cow-calf operation but needs to load calves in a trailer to move them to the feedlot, include those calves here.
- b. Obtained directly from a backgrounding or stocker operation or grow yard (i.e., did not pass through a sale barn; includes cattle purchased by video auction)
- c. Obtained through a sale barn
- d. Obtained directly from a dairy operation, including dairy-breed calf raiser
- e. Obtained from other sources – be sure to record what other sources are used
- f. Source unknown
- g. Total – the total should equal 100% if they record the percentages of cattle obtained from each of the listed sources. If recording numbers of cattle, the total should equal the total inventory from question 1 less any cattle born and raised on this operation and recorded in Question 6.

**Question 8. Difference in source of cattle placed in 2020 compared with 2019 due to**

**COVID-19 or its effects**

If the source (the last location of cattle before they came to the feedlot) of cattle placed on feed in calendar year 2020 was different from 2019 due to COVID-19 or its effects, select “yes.” Otherwise select “no.”

**[If Question 8 = NO, SKIP to Question 10]**

**Question 9. Primary source of cattle in 2019**

If the primary source of cattle was different in 2020 compared with 2019, we want to capture the primary source of cattle in 2019 in order to compare with the results from Question 7. Select the primary source of cattle in calendar year 2019 from the choices provided. These are the same options that appear in Question 7.

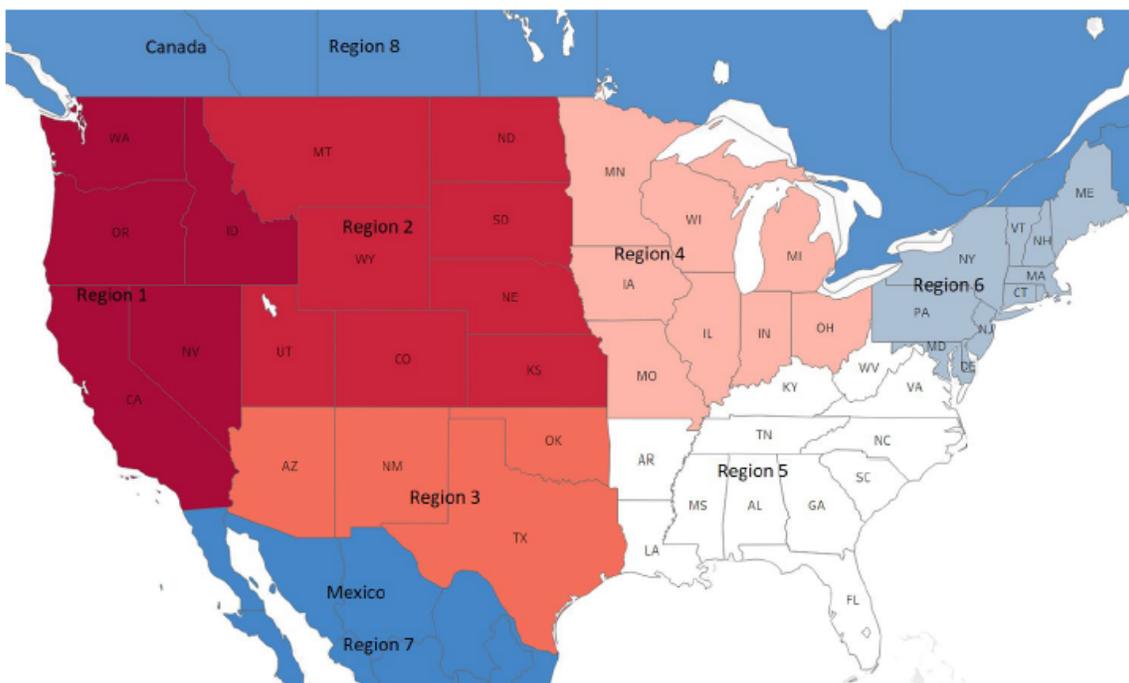
**Question 10. Percentage or number of cattle placed on feed by distance traveled from their most recent location**

Cattle traveling long distances to a feedlot can be more prone to disease upon arrival at the feedlot due to the stress of transportation. Of the cattle placed on feed from January 1, 2020 to December 31, 2020, record the percent or the number of cattle by the number of miles they traveled from their most recent location to the feedlot. Options include equal to or less than 50 miles, 51-250 miles, 251-500 miles, 501-1000 miles, greater than 1000 miles, and distance traveled not known. The total should equal 100% if they record the percentages of cattle by distance traveled, and if they record number of cattle, the total should equal the total inventory from question 1 minus any cattle born and raised on this operation and recorded in Question 6.

**Question 11. Percentage or number of cattle placed on feed by region of the country from which cattle were sourced**

Some regions of the U.S., such as the Southeast, are often associated with high-risk calves (i.e., more prone to disease). Of the cattle placed on feed from January 1, 2020 to December 31, 2020, record the percent or the number of cattle by the region of the country from which the cattle were sourced (map shown below and included in Appendix A of the Appendices document from the pre-survey packet). The total should equal 100% if they record the percentages of cattle by region or if they record number of cattle, the total should equal the total inventory from question 1 minus any cattle born and raised on this operation and recorded in Question 6.

**Appendix A. Reference Map for Section A, Question 11**  
 (AK and HI are not pictured and are included in Region 1)



**Question 12. Percentage or number of cattle commingled with cattle from different sources during the first 45 days of feeding by arrival weight categories**

If the number of cattle from a single source is insufficient to fill a pen, cattle will often be commingled with cattle from other sources, which can make them susceptible to acquiring disease from the cattle they are commingled with. Pens are often filled with cattle of about the same age, weight, and frame size. Of the cattle placed on feed from January 1, 2020 to December 31, 2020, record the percent or the number of cattle that were commingled with cattle from different sources during the first 45 days of feeding for each arrival weight category. If the Producer cannot answer for any of the arrival weight categories, check “DK” for “Don’t Know”.

**Question 13. Percentage of cattle with an individual identification eartag**

Individual-animal identification is important for disease traceback purposes. For example, if an animal is not properly identified before arriving at slaughter and turns out to be positive for an important disease such as tuberculosis, it can be difficult or impossible to identify the origin of that animal. Record the percentage of cattle on feed that are identified with an individual identification eartag, placed either at this feedlot or prior to arrival at this feedlot. If the Producer cannot answer this question, check “DK” for “Don’t Know”.

**[If Question 13 = 0 or DK, SKIP to Question 16.]**

**Question 14. Type of individual identification used on most of the cattle**

Electronic eartags have a microchip responder, which can be easily read with a wand or other device and be uploaded to a data storage device or database. These are also known as Radio Frequency Identification (RFID) eartags. There are three different types of electronic eartags: ultra high frequency, high frequency, and low frequency. Cattle with low frequency tags need to be single file in order for the tags to be read while cattle with ultra high frequency tags can read be in groups (e.g., ultra high frequency tags for a group of cattle can be read from outside a semi-trailer). Visual tags are self-explanatory—these need to be read by looking at the tag, which is often easier when done in a livestock chute.

Check the response that best describes the type of individual identification used on most of the cattle on the feedlot. If the Producer uses some other form of individual identification, check “other” and record what they are using. Pictures of some of the different types of identification are provided in Appendix B of the Appendices document from the pre-survey packet.

**Question 15. Percentage of cattle placed on feed identified with an individual official identification eartag**

Record the percentage of cattle on feed that are identified with an official USDA individual identification eartag, which are characterized by the official U.S. shield. Brucellosis tags (which are orange) and brite tags (which are silver) are examples of metal tags that are official identification. Plastic tags with the “840” prefix are also official identification. These “840” tags can be electronic or nonelectronic. See example photos in Appendix B of the Appendices document from the pre-survey packet. If the Producer cannot answer this question, check “DK” for “Don’t Know”.

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**Appendix B. Examples of USDA official ID methods for Section A, Question 15**

(From Animal Disease Traceability Framework, Official Eartags – Criteria and Options,  
[https://www.aphis.usda.gov/traceability/downloads/ADT\\_eartags\\_criteria.pdf](https://www.aphis.usda.gov/traceability/downloads/ADT_eartags_criteria.pdf))

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**Official Vaccination Eartag (Brucellosis)**



**National Uniform Eartagging System (NUES) Tag  
("Silver" or "Brite" tag)**



Animal Identification Number (AIN) Tags with 840 prefix (Visual and Electronic)



**Question 16. Primary housing type**

Check the response that best describes the primary housing type used for cattle on this feedlot. If the Producer uses some other housing type, check "other" and record what they are using. Note that an open lot could have a dirt surface or a concrete surface. Concrete lots are more common in the eastern U.S. Pictures of some of the different housing types are provided in Appendix C of the Appendices document from the pre-survey packet.

**[If question 16 = 3 or 4, answer question 17. Otherwise, SKIP to Section B.]**

**Appendix C. Examples of Types of Housing for Section A, Question 16**

**Open dry lot**  
(photograph courtesy of Dr. Paul Morley)



**Confinement barn with slatted floor**  
(photograph courtesy of Dr. Grant Dewell)



**Wind fence**  
(photograph courtesy of Dr. Paul Morley)



**Confinement barn with bedded pack**  
(photograph courtesy of Dr. Grant Dewell)



**Question 17. Ventilation in the shed/barn**

Check the response that best describes the ventilation system used in the barn/shed for cattle on this feedlot. If the Producer uses some other ventilation type, check “other” and record what they are using.

**Section B—Antibiotic Use and Stewardship**

Unless otherwise noted, all questions in this section refer to the period from January 1, 2020 to December 31, 2020.

**For reference: Antibiotics by FDA Category of Medical Importance**

The FDA categorizes antibiotics with respect to their use in human medicine, published in Guidance for Industry #152, Appendix A. Antibiotics that are used therapeutically in humans are called medically important. In the U.S., ionophores are considered antibiotics (in the European Union they are not). The table below shows which drug classes are medically important or not medically important.

	Drug class	Route of administration	Drug	Example trade names
Not medically important	Ionophores	Feed	Monensin	Rumensin
		Feed	Lasalocid	Bovatec
		Feed	Laidlomycin	Cattlyst
	Glycophospholipid	Feed	Bambermycin	Gainpro
	Polypeptides	Feed	Bacitracin	BMD
Medically important	Tetracyclines	Feed	Oxytetracycline	Terramycin, Pennox
		Water	Oxytetracycline	Terramycin, Oxytet 343
		Injection	Oxytetracycline	Liquamycin LA-200, Agrimycin 200, Bio-Mycin 200, Duramycin 72-200, Noromycin 300-LA
		Feed	Chlortetracycline	Aureomycin, Pennchlor, Chlormax
		Water	Chlortetracycline	Aureomycin, Chloronex
		Feed	Chlortetracycline/ Sulfamethazine	Aureo S 700, AS 700
		Water	Tetracycline	Tetramed 324, Tet-Sol 324
	Aminoglycosides	Water	Spectinomycin	Spectam, SpectoGard Scour-Chek
	Beta lactam-natural penicillins	Injection	Penicillin G procaine	Norocillin, Aquacillin, Agri-Cillin, Bactracillin G, Pen-Aqueous
		Injection	Penicillin G Procaine/ Penicillin G Benzathine	Combi-Pen-48, Dual-Cillin, Flo-cillin, Dura-Pen, Combicillin
	Phenicols	Injection	Florfenicol	Nuflor, Norfenicol, Resflor Gold
	Aminopenicillins	Injection	Ampicillin	Polyflex
	Streptogramins	Feed	Virginiamycin	V-Max
	Fluoroquinolones	Injection	Enrofloxacin	Baytril, Enroflox, EnroMed, Quellaxin
		Injection	Danofloxacin	Advocin
	Third generation cephalosporins	Injection	Ceftiofur	Naxcel, Ceftiflex, EXCENEL RTU, Cefenil RTU, EXCEDE
	Diaminopyrimidine/ sulfonamides	Oral (tablets)	Trimethoprim/ sulfamethazine	Bactrim, SMZ/TMP, Tribriassin
	Macrolides	Feed	Tylosin	Tylan, Tylovet
		Injection	Tylosin	Tylan, Tylan 200, Tylan 50
		Injection	Tilmicosin	Micotil
		Feed	Tilmicosin	Pulmotil, Tilmovet
		Injection	Tulathromycin	Draxxin
		Injection	Gamithromycin	Zactran
	Injection	Tildipirosin	Zuprevo	
Sulfonamides	Injection	Sulfachlorpyridazine	Vetisulid	
	Oral (bolus)	Sulfachlorpyridazine	Vetisulid bolus	
	Injection	Sulfadimethoxine	Di-methox 40%, Agribon 40%	
	Oral (bolus)	Sulfadimethoxine	Albon S.R., Agribon, Albon Bolus	
	Water	Sulfadimethoxine	Agribon solution, Albon solution, Di-Methox 12.5%	
	Injection	Sulfamethazine	Sulmet	
	Oral (bolus)	Sulfamethazine	Sulmet Oblets, Sustain III, SulfaSURE SR	
	Water	Sulfamethazine	SMZ-Med 454, Sulmet	

*Feedlot Producers sometimes market their cattle to meet specific label claims in order to get a premium for their product. The first 3 questions in this section ask about cattle raised with specific marketing label claims related to antibiotic use, organic labeling, and use of hormones.*

### **Question 1. Percentage of cattle with specific marketing label claims**

Certified USDA organic requires no antibiotic use ever in addition to many other requirements, such as using only organic feed. There are other labels related to limited or no antibiotic use that are not Certified USDA Organic. Some labels require no hormone use in the cattle. Cattle without any specific label claims are marketed as conventionally raised beef. Enter the percentage of the cattle placed on the feedlot intended to meet the listed marketing claims.

**[If the percentage of cattle in 1d = 100, SKIP to question 4.]**

### **Question 2. Percentage of cattle that complete a management program to meet specific marketing label claims**

Of the cattle that start the feeding period in a management program to meet specific label claims (Certified USDA Organic, no or limited antibiotic use, or no hormone use), what percentage typically finish in that program? For example, if all cattle that start out as Certified USDA Organic complete the program and are marketed as organic, then 2a would be 100%. Sometimes cattle in these specific management programs must be treated with antibiotics. If they are treated, they are removed from the program, and marketed as conventionally raised beef. If 5% of cattle that start out as Certified USDA Organic are removed from the program, then 2a would be 95% completed the program (100% - 5% = 95%).

If no cattle were raised to be marketed under a specific label claim, then the associated percentage from Question 1 should be 0% and the not applicable (NA) option should be checked for that label claim in Question 2. For example, if no cattle were raised to be marketed under the Certified USDA Organic label claim, Question 1.a should be marked as 0% and the NA option should be checked for Question 2.a.

**[If the percentage of cattle in 2b = 0, SKIP to question 4.]**

### **Question 3. Marketing label claims regarding antibiotic use**

For feedlots that raise cattle to meet specific marketing label claims related to antibiotic use, there are several different options. Select the option that best describes the marketing label claim for the cattle in question 2b. The options include no antibiotics ever (including “raised without antibiotics”), no medically important antibiotics ever (in other words, only ionophores, bambermycin, or bacitracin are used), and no antibiotics used in the last 25-100 days prior to slaughter. If the cattle are marketed with some other claim related to antibiotic use, check “other” and record what the label claim entails.

*The next 9 questions ask about antibiotic use and record-keeping of antibiotic use. The questions will appear similar, though they differ by the route of administration being asked about, including injectable antibiotics administered as a group, injectable antibiotics administered individually, in-feed antibiotics, and in-water antibiotics.*

### **Question 4. Any antibiotics used in cattle**

If any antibiotics were used in cattle on this feedlot from January 1, 2020 to December 31, 2020, including injectable, in feed, and/or in water antibiotics, select “yes”. If no antibiotics were used, select “no”.

**[If question 4 = NO, SKIP to question 13.]**

**Question 5. Injectable antibiotics administered to cattle as a group**

Of cattle that entered the feedlot from January 1, 2020 to December 31, 2020, were any cattle administered antibiotics as a group with an injectable antibiotic? Cattle can be administered antibiotics on a group basis, meaning the majority (typically at least 90%) of the cattle in the group were given injectable antibiotics at the same time, such as for the treatment, prevention, or control of bovine respiratory disease. If the feedlot administered injectable antibiotics to cattle as a group, select “Yes”. If they do not administer injectable antibiotics to cattle as a group, select “No”. The purpose of this question is to determine whether the Producer should complete the table in question 6.

**[If question 5 = NO, SKIP to question 7.]**

*Common Questions regarding Question 5*

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**What if all cattle in a pen were run through a chute, the temperature for each animal was taken, and only the cattle with a high temperature were administered antibiotics (i.e., temp and treat)?** Unless at least 90% of the pen was administered antibiotics, do not count these cattle as administered antibiotics as a group, but count these cattle as individually treated with antibiotics. It is unlikely that 90% of these cattle would have an elevated temperature and be treated.

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**Why are we saying that the majority of cattle need to be administered an injectable antibiotic for these cattle to be considered as “administered as a group”?** We want to capture information on the therapeutic use of injectable antibiotics on a population basis, which is typically performed at initial processing of cattle after arrival to the feedlot. This entails the administration of antibiotics to all or most of the cattle in a group; some may be at high risk of disease, some may be subclinically ill, and some may be showing clinical signs of disease.

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**What is the advantage of administering antibiotics to cattle in a group by running them through a chute? Why not administer antibiotics in feed?** Antibiotics available for in-feed use are older antibiotics and are not likely to be as effective as the newer antibiotics available only by injection, such as Draxxin® or Zuprevo™. In addition, when cattle are sick, feed intake is decreased.

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**Question 6. Record-keeping for injectable antibiotics administered to cattle as a group**

Enter how frequently antibiotic use information was available or captured/calculated in a record-keeping system for injectable antibiotics administered to cattle as a group. It does not matter if the information was recorded by paper records or data entered into a computer. For each row, check one box indicating whether the information was recorded never, sometimes, most of the time, or always. Note that some feedlots may use the term “lot” and some may use the term “pen.” Row (d) asks if the date is recorded when the animal has completed an antibiotic withdrawal period and may be shipped to slaughter.

**Question 7. Injectable antibiotics administered to individual sick cattle**

Check “Yes” or “No” to indicate whether any individual cattle became sick and were treated with injectable antibiotics. Individual cattle treated with injectable antibiotics will typically be cattle that appear sick and are sorted out for treatment, and sometimes moved to a treatment pen. The purpose of this question is to determine whether the Producer should complete the table in question 8.

**[If question 7 = NO, SKIP to question 9.]**

*Common question regarding Question 7*

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**What if cattle from a pen were run through a chute, the temperature of each animal was taken, and only the cattle with a high temperature were treated?** These cattle would be considered individual steers and heifers that were treated, so “Yes” should be marked for question 7.

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**Question 8. Record-keeping for injectable antibiotics administered to individual sick cattle**

Enter how frequently antibiotic use information was available or captured/calculated in a record-keeping system for injectable antibiotics administered to individual sick cattle. It does not matter if the information was recorded by paper records or data entered into a computer. For each row, check one box indicating whether the information was recorded never, sometimes, most of the time, or always. Note that some feedlots may use the term “lot” and some may use the term “pen.” Row (d) asks if the date is recorded when the animal has completed an antibiotic withdrawal period and may be shipped to slaughter.

**Question 9. Antibiotic use in feed**

The FDA has designated some antibiotics as medically important based on their use in human medicine, including chlortetracycline and tylosin, and some antibiotics as non-medically important, such as ionophores (e.g., Rumensin®), Bovatec®, Cattlyst®). Medically important antibiotics require a veterinary feed directive (VFD) from a veterinarian for use in feed while non-medically important antibiotics do not require a VFD. Select only one option that best describes the antibiotic use in feed on this feedlot: cattle were given both medically important and non-medically important antibiotics in feed, cattle were given only medically important antibiotics in feed, cattle were given only non-medically important antibiotics in feed, or cattle were not given any antibiotics in feed. The purpose of this question is to capture information on the types of antibiotics used in feed as well as to determine whether the Producer should complete the table in Question 10. Typically, the most common antibiotics used in feed for feedlot cattle are ionophores, tylosin, and chlortetracycline. Of these, ionophores are non-medically important, and tylosin and chlortetracycline are medically important.

**[If Question 9 = “Cattle were NOT given any antibiotics in feed”, SKIP to Question 11.]**

**Question 10. Record-keeping for antibiotic use in feed**

Enter how frequently antibiotic use information was available or captured/calculated in a record-keeping system for antibiotic use in feed. It does not matter if the information was recorded by paper records or data entered into a computer. For each row, check one box

indicating whether the information was recorded never, sometimes, most of the time, or always. Note that some feedlots may use the term “lot” and some may use the term “pen.” Row (e) asks if the date is recorded when the animal has completed an antibiotic withdrawal period and may be shipped to slaughter. There is an option to check in row (e) if there is no withdrawal period for any antibiotic used; if this applies, check the box and leave the rest of the row blank. Ionophores (Rumensin®), Bovatec®, Cattlyst®) and tylosin (Tylan®, Tylovet®) do not have a withdrawal period when used in cattle feed.

For many of the larger feedlots (e.g., 1,000-head capacity and larger), antibiotic use in feed will be recorded during ration development in feedlot software programs. Examples of these programs include TurnKey, Micro Beef Technologies, Beef Tracker, Walco International, CattleXpert, and Hi-Plains Systems. If Producers are using any of these programs for ration development, they should always be recording the information in 10a. through 10.e.

### **Question 11. Antibiotic use in water**

Check “Yes” or “No” to indicate whether any cattle were given antibiotics in water from January 1, 2020 to December 31, 2020. Most feedlots will answer “No” to this question; antibiotic use in water is uncommon on feedlots. In the 2017 NAHMS Antibiotic Use Survey on U.S. Feedlots, only 8.5% of feedlots reported using antibiotics in water (9.1% of small feedlots and 1.1% of large feedlots). The purpose of this question is to determine whether the Producer should complete the table in Question 12.

**[If Question 11 = NO, SKIP to Question 13.]**

### **Question 12. Record-keeping for antibiotic use in water**

Enter how frequently antibiotic use information was available or captured/calculated in a record-keeping system for antibiotic use in water. It does not matter if the information was recorded by paper records or data entered into a computer. For each row, check one box indicating whether the information was recorded never, sometimes, most of the time, or always. Note that some feedlots may use the term “lot” and some may use the term “pen.” Row (e) asks if the date is recorded when the animal has completed an antibiotic withdrawal period and may be shipped to slaughter is recorded.

*The following 3 questions ask about electronic record-keeping systems.*

### **Question 13. Electronic record-keeping systems**

Check “Yes” or “No” to indicate whether the feedlot uses an electronic record-keeping system to store production and/or animal health related information. The software used for ration development (e.g., TurnKey, Micro Beef Technologies, Beef Tracker, Walco International, CattleXpert, and Hi-Plains Systems) can also store this type of information.

**[If question 13 = NO, SKIP to question 16.]**

### **Question 14. Primary electronic record-keeping system used**

Select the electronic record-keeping system that best describes the primary electronic record-keeping system used on this feedlot. Options include: commercially available software designed for use in feedlots (e.g., TurnKey, Micro Beef Technologies, Beef Tracker, Walco International, CattleXpert, and Hi-Plains Systems), custom software

specifically designed for use by a consulting practice or by this feedlot, or other spreadsheet or general database software (such as Microsoft Excel or Access). If the feedlot uses some other type of electronic record-keeping system, check “other” and record what type of system they use.

**Question 15. Importance of electronic record-keeping systems**

Select the level of importance: very important, somewhat important, or not important; for each of the listed factors regarding the importance of electronic record-keeping systems for this feedlot. The questions include: comparing your feedlot to other feedlots, comparing current information to historical information for this feedlot, determining and recording when animals have completed antibiotic withdrawal periods, tracking production, and tracking economic records.

*The following 2 questions ask about participation in Beef Quality Assurance trainings and Feedyard Assessments.*

**Question 16. Participation in Beef Quality Assurance (BQA) training (online, national, State, or local)**

Check “Yes”, “No”, or “Don’t Know” to indicate if the respondent or anyone representing this feedlot has attended or completed a Beef Quality Assurance (BQA) meeting or training session (online, national, State, or local), during the previous 5 years.

**Question 17. Participation in a Beef Quality Assurance (BQA) Feedyard Assessment**

Check “Yes”, “No”, or “Don’t Know” to indicate if this feedlot has participated in a Beef Quality Assurance (BQA) Feedyard Assessment during the previous 5 years.

The BQA Feedyard Assessment is an educational tool that allows for assessing and benchmarking key indicators of animal care and well-being, as well as feedyard conditions. The Feedyard Assessment focuses on three main areas: 1. Animals, 2. Records, and 3. Protocols, facilities, and equipment. The Feedyard Assessment may be performed as a self-assessment, completed by a second party (e.g., consulting veterinarian, nutritionist, feedyard staff, extension personnel, BQA coordinator, etc.), or conducted by a third-party assessor.

*The following 5 questions ask about veterinary use.*

**Question 18. Use of a veterinarian from January 1, 2020 to December 31, 2020**

Check “Yes” or “No” to indicate whether the feedlot used the services of a veterinarian from January 1, 2020 to December 31, 2020. It is expected that most feedlots will answer “Yes” to this question.

**[If question 18 = NO, ANSWER question 19 and then SKIP to Question 23.]**  
**[If question 18 = YES, SKIP to Question 20.]**

**Question 19. Why wasn’t a veterinarian used from January 1, 2020 to December 31, 2020**

For feedlots that did not use the services of a veterinarian, check the appropriate response to capture the primary reason why the feedlot did not use a veterinarian during this time

period.

**Question 20. Type of veterinarian used from January 1, 2020 to December 31, 2020**

For feedlots that did use a veterinarian, check the appropriate response to capture the type of primary veterinarian or veterinary clinic used.

*Common question regarding Question 20*

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**What if the feedlot uses a veterinary consultant who makes routine visits?** This veterinarian may work as part of a group of veterinary consultants rather than as part of a veterinary clinic, but he or she is not “on-staff” at the feedlot. Select option 2 for a veterinarian who makes regular or routine visits.

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**Question 21. Number of times this feedlot was visited by a veterinarian**

Enter the number of times a veterinarian visited this feedlot (physically present on the feedlot) from January 1, 2020 to December 31, 2020, for reasons related to the feedlot operation.

**Question 21.a. Difference in number of times this feedlot was visited by a veterinarian in 2020 compared with 2019 due to COVID-19 or its effects**

If the number of times a veterinarian was physically present on the feedlot in calendar 2020 was different from the number of times a veterinarian was physically present on the feedlot in calendar 2019 due to COVID-19 or its effects, answer “yes.” Otherwise enter “no.”

**[If question 21a = No, SKIP to Question 22.]**

**Question 21.b. Number of times this feedlot was visited by a veterinarian in 2020 more or fewer than in 2019 due to COVID-19 or its effects**

If the number of times a veterinarian was physically present on the operation in 2020 was more than in 2019 due to COVID-19 or its effects, select “more than 2019.” It is unlikely a veterinarian was on the operation more often in 2020 compared to 2019 due to quarantines, stay-at-home orders, or travel restrictions due to COVID-19. If the number of times a veterinarian was physically present on the operation in 2020 was fewer than in 2019 due to COVID-19 or its effects, select “fewer than 2019.”

**Question 22. Number of times this feedlot was in contact with a veterinarian other than in person**

Enter the number of times a veterinarian was in contact with this feedlot other than in person, including by telephone, video conference, or data transfer, from January 1, 2020 to December 31, 2020, for reasons related to the feedlot operation.

**Question 22.a. Difference in number of times this feedlot was in contact with a veterinarian other than in person in 2020 compared with 2019**

If the number of times this feedlot was in contact with a veterinarian other than in person (e.g., by telephone, video conference, or data transfer) in calendar 2020 was different from the number of times this feedlot was in contact with a veterinarian other than in person in calendar 2019 due to COVID-19 or its effects, answer “yes.” Otherwise enter “no.”

**[If question 22a = No, SKIP to Question 23.]**

**Question 22.b. Number of times this feedlot was in contact with a veterinarian other than in person in 2020 more or fewer than in 2019 due to COVID-19 or its effects**

If the number of times this feedlot was in contact with a veterinarian other than in person (e.g., by telephone, video conference, or data transfer) in 2020 was more than in 2019 due to COVID-19 or its effects, select “more than 2019.” Due to quarantines, stay-at-home orders, or travel restrictions due to COVID-19, veterinarians may have consulted more often over the telephone or by videoconference in 2020 compared with 2019. If the number of times this feedlot was in contact with a veterinarian other than in person (e.g., by telephone, video conference, or data transfer) in 2020 was fewer than in 2019 due to COVID-19 or its effects, select “fewer than 2019.”

**Question 23. Resources to manage label changes on this feedlot**

As of January 1, 2017, medically important antimicrobials were no longer approved by the FDA for use in food producing animals for growth promotion purposes, and medically important antimicrobials used in animal feed required veterinary oversight (i.e., a veterinary feed directive or VFD). There was a great deal of effort made by various groups to educate veterinarians and producers about the rule change before it went into effect. The purpose of this question is to get an idea of the effectiveness of these educational efforts.

Indicate how strongly the Producer agrees or disagrees with the following statement, with options including strongly agree, agree, neither, disagree, or strongly disagree.

“On January 1, 2017, I felt I had all of the resources (e.g., access to veterinarians knowledgeable about the VFD, training, finances) necessary to manage the VFD rule change on this feedlot.”

**Question 24. Informed consent to turn over contact information to APHIS-VS for Phase II**

Given that this questionnaire will likely be self-administered or administered by either paper-assisted telephone interview (PATI) or computer-assisted telephone interview (CATI), Question 24 will take the place of a paper consent form. Ask Producers who complete the Phase I Questionnaire if they will give NASS permission to release the Producer’s name and contact information to APHIS-Veterinary Services (VS)-NAHMS for participation in a farm visit and questionnaire to be administered by APHIS:VS:NAHMS. Answering “yes” will serve as consent to release contact information to APHIS:VS:NAHMS. In trying to obtain consent, briefly talk about Phase II of the study and provide the Producer with information that explains Phase II and the benefits of participation in this phase of the study. All Producers who provide consent to participate in Phase II will be contacted by USDA-APHIS-VS.

**Question 25. Informed consent for feedlots in the State of California**

Given that this questionnaire will likely be self-administered or administered by paper-assisted telephone interview (PATI) or computer-assisted telephone interview (CATI), Question 25 will take the place of a paper consent form. This question is only relevant to California Producers who complete Phase I. Answering “yes” will serve as consent to release California state level aggregate data obtained from the Phase I Questionnaire to

the California Department of Food and Agriculture for purposes of fulfilling California Food and Agricultural Codes 13300-14408. The California Department of Food and Agriculture (CDFA) is mandated by California Food and Agricultural Codes 14400-14408 to monitor antimicrobial use and management practices in livestock. The California Law furthermore directs that, when applicable, this information be gathered in coordination with NAHMS. The California Law stipulates that these data are collected in a voluntary manner. The collected data will be used for monitoring and educational, not regulatory, purposes.

***Only to be completed by operations in California.***

**Section C—Office Use Only**

Complete this page for all operations, even if they were inaccessible, were backgrounder/stocker operations only, out of business, had no cattle placed in calendar year 2020, or were otherwise out of scope, or were refusals. This information is important for proper analysis of the survey data.

**1. Interview response code**

Select one response code that best applies to this feedlot. If option 3 – “Refused” is selected, complete Question 2 and the ending time, and then nothing else needs to be completed on the Office Use page. If option 2 is selected – “Complete, Question B.24 equals no” (they completed the Phase I questionnaire but refused consent to have the opportunity to participate in Phase II) complete Questions 2, 3, 4, and the ending time. If option 1 – “Complete, Question B.24 equals yes” (they completed the Phase I questionnaire and consented to have the opportunity to participate in Phase II) is selected, skip Question 2 and complete Questions 3, 4, and the ending time. If options 4, 5, 6, 7, 8, or 9 are selected, complete the ending time, and no other questions need to be completed.

**2. Refusal response code**

Select one refusal response code that best describes why this feedlot refused to complete either the Phase I survey (if the response code, Question C.1 equals 3) or refused to consent to have the opportunity to participate in Phase II (if the response code, Question C.1 equals 2).

**3. Respondent’s position on this operation**

Select one response option that best describes the respondent’s position on this operation.

**4. Use of records**

Check “yes” or “no” to indicate if the respondent used records to assist in answering this survey.

**5. Ending time**

Include the time when the interview ended in military format.

**Comments page.**

A comments section is provided for producers to provide comments about the survey or any other information about their feedlot they think is relevant, including any information about the impact of COVID-19 and its effects on the operation of the feedlot. Questionnaire administrators can also use this page to provide comments. However, indicate whether comments are from Producers or enumerators.

**Please thank the Producer for their help completing this survey. Use the back of the questionnaire to communicate any additional comments about the survey or any other information about health management on this feedlot that the Producer wants to share.**

### **III. Completing the NAHMS Health Management on U.S. Feedlots 2021 Consent to Contact Form**

Since in-person interviews are not likely to be conducted for this study, the consent will be captured in Question 24 in Section B. The full Consent form language is provided in Appendix D of the Appendices document that comes as a part of the pre-survey packet so both you and the Producer know what this consent entails. Answering “yes” on Question 24, Section B provides consent from the Producer to share their contact information with APHIS to be contacted to participate in Phase II of the study.

Review the form with the Producer and answer any questions he or she may have regarding Phase II of the study.

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## **Appendix D. Consent to Contact for Section B, Question 24**

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The USDA’s Animal and Plant Health Inspection Service’s (APHIS) National Animal Health Monitoring System (NAHMS) is conducting a study of U.S. feedlot operations with a capacity of 50 or more cattle. NAHMS studies are voluntary and nonregulatory. This study will take an in-depth look at U.S. feedlots and provide new and valuable information regarding animal health and management practices in the U.S. feedlot industry. To initiate the study, a sample was selected from the confidential list of operations maintained by USDA’s National Agricultural Statistics Service (NASS). Your feedlot was selected for participation and will represent a number of unselected feedlots.

By consenting, you are agreeing to allow USDA–NASS staff to provide the following information to the State NAHMS Coordinator, who is employed by USDA–APHIS: your name, address, phone number, email address, and inventory. All data from this questionnaire will be shared with NAHMS state coordinators.

The NAHMS Coordinator will share this information with a Federal or State veterinary medical officer (VMO), who will contact you to administer a phase II questionnaire. Only the Federal or State VMOs collecting the data will know the identity of study participants.

Confidentiality of your data is crucially important to us. No name or contact information will be associated with individual data, and no data will be reported in a way that could reveal the identity of a participant. Data are presented only in aggregated summaries.

When you are contacted by a Federal or State VMO and asked to participate in the study, you are free to accept or decline participation at that time. A copy of the questionnaire that will be administered when you’re contacted by the Federal or State VMO can be found at: [www.aphis.usda.gov/nahms](http://www.aphis.usda.gov/nahms). If you have been selected but have not been contacted or if you have questions regarding the study, please call: (866) 907-8190.

Please indicate your willingness to consent in Section B, Question 24 on the Health Management on U.S. Feedlots, 2021 web questionnaire.

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**IV. Completing the Health Management on U.S. Feedlots 2021 Informed Consent for Feedlots in the State of California**

***Only for operations in California***

Since in-person interviews are not likely to be conducted for this study, consent will be captured in Question 25 in Section B rather than with a paper form. The full Consent form language is provided in Appendix E of the Appendices document that comes as a part of the pre-survey packet so both you and the Producer know what this consent entails . Answering “yes” on Question 25, Section B provides consent from the Producer to release California **state level aggregate data** obtained from the Phase I questionnaire to the California Department of Food and Agriculture for the purposes of fulfilling California Food and Agricultural Codes 13300-14408.

Review the form with the Producer and answer any questions he or she may have regarding the NASS California Informed Consent form.

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**Appendix E. Informed Consent for Feedlots in the State of California for Section B, Question 25**

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The U.S. Department of Agriculture's National Agricultural Statistics Service (NASS), Animal and Plant Health Inspection Service (APHIS), the California Department of Food and Agriculture and the State of California, and the Producer hereby enter into this National Animal Health Monitoring System (NAHMS) Health Management on U.S. Feedlots 2021 INFORMED CONSENT, the terms of which are set forth below.

1. The California Department of Food and Agriculture (CDFA) is mandated by California Food and Agricultural Codes 14400-14408 to monitor antimicrobial use and management practices in livestock. The California Law furthermore directs that, when applicable, this information be gathered in coordination with NAHMS. The California Law stipulates that these data are collected in a voluntary manner. The collected data will be used for monitoring and educational, not regulatory, purposes.
2. Since the NAHMS Health Management on U.S. Feedlots 2021 study will include collection of data regarding antimicrobial use and health management in feedlot cattle in California, CDFA has requested that NAHMS share aggregate data collected in the NAHMS Health Management on U.S. Feedlots 2021 study from California cattle feedlots with them for the purposes of fulfilling California Food and Agricultural Codes 14400-14408.
3. Only aggregate (summary) data, not individual data, will be shared with CDFA. The identity of the Producer will be withheld. No individual responses will be shared or published.

Please indicate your consent to have received this information in Section B, Question 25 on the Health Management on U.S. Feedlots, 2021 web questionnaire.