

B. Collections of Information Employing Statistical Methods

1. Describe the potential respondent universe and any sampling or other respondent selection methods to be used.

The potential respondent universe of the Feedlot 2011 Study is all feedlot operations that are on the NASS list frame with cattle on feed for the States in the respective components of the study – small and large size feedlots. Thirteen States were identified for inclusion for feedlots with fewer than 1,000 head capacity and 12 States for the large size feedlot component. The preliminary selection of States to be included in the study was done in November 2010. The goal of NAHMS national studies is to include States that account for at least 70 percent of the animals and operators/producers in the United States. The reference population for the study is the number of feedlot operations with cattle on feed for the slaughter market and the number of cattle on feed for the slaughter market on those operations, in the respective study States.

The number of large feedlots with 1,000 head or more capacity is fairly stable because of the availability of both calves and feed in the States in which they are located. The Feedlot '99 Study included 12 of 13 States studied in 1994 (Illinois dropped out). NASS publishes monthly inventory numbers by State for these major cattle on feed States which now excludes New Mexico (included in the estimates for “other States” due to confidentiality concerns). So the initial review for State selection (see Appendix A) started with the review of those States published individually in the monthly cattle on feed program. These 1,000 + head capacity feedlots account for over 80 percent of all cattle on feed in the U.S. and this has been the case for at least the last four years. Eleven individual States are now published which account for 96 percent of the cattle on feed in feedlots with 1,000+ head capacity. We included New Mexico, although no longer published individually by NASS, to assure comparability to the 1999 study and due to the interest in health and management practices in States bordering Mexico. The 12 State coverage is approximately 97 percent of cattle on feed in the 1,000+ head capacity feedlots and coverage for number of feedlots is no longer available.

Small size feedlots tend to be more centrally located in the U.S. due to the availability of calves from smaller cow-calf operations and an available grain supply. NASS no longer publishes State-level inventories in feedlots with fewer than 1,000 head capacity. Therefore, an evaluation of the 2007 Census of Agriculture data for farms and inventory for those farms with less than 500 head of cattle on feed (slightly different criteria than feedlot capacity) using a rule of 2 percent or more of the U.S. total of either farms or inventory confirms the importance of those individual States published by NASS (Feb. 2009) with the exception of North Dakota. This State was published by NASS but only had .67 percent of the US feedlots and only 1.02 percent of the US inventory of less than 500 head which did not meet the criteria. In addition, two States met the criteria but were not published – Kansas and Texas. The resulting 13 States for the study cover 85.39 percent of the farms with less than 500 head of cattle on feed and 90.54 percent of the U.S. less than 500 head inventory.

Based on data from previous NAHMS Feedlot Studies (Appendix B), the estimated response rate for the NASS CATI component of the Feedlot 2011 Study is 75.0 percent including zero cattle inventory responses (response rate calculations appear in Appendix C) and 69.0 percent including zero cattle inventory responses for the enumerator component. All respondents with

cattle on feed for the slaughter market, from the NASS enumerator component will be eligible to participate in the APHIS data collection phase (Phase II) of the study. Criterion for eligibility is one or more cattle or calves on feed for the slaughter market as reported on the General Feedlot Management Report.

The descriptive reports from the Feedlot 2011 Study will include a Methodology Section explaining the study processes – information needs assessment, sample selection, data collection, validation and editing, estimation, and response rates. In addition, the appendix will include a table identifying the specific reference population in terms of the number of operations with cattle on feed for the slaughter market and the number of cattle on feed for the slaughter market.

2. Describe the procedures for the collection of information including:

Statistical methodology for stratification and sample selection:

Stratification: A total of 13 States for the small size feedlot study and 12 States for the large size feedlot study were selected for inclusion in the study. The States were selected based upon each State's contribution to the U.S. total number of operations with cattle on feed for the slaughter market and the number of cattle on feed for the slaughter market as well as geographic representation (Appendix A).

Sampling methodology— Feedlot 2011 study: 3,500 feedlot operations (see 'degree of accuracy needed' section for sample size determination) will be selected from NASS' list frame of producers with one or more cattle on feed. The sample will be selected as a stratified random sample with the strata being both State and operation size. Operation size is based on cattle on feed inventory. The State-level allocation will be based on a weighted proportion of the number of operations in the State and the cattle on feed inventory relative to the U.S. levels with smoothing to prevent excessive workload for some States (Appendix A). The percentage of U.S. operations with cattle on feed in the State will get a weight of 0.6 and the percentage of cattle on feed will get a weight of 0.4. The allocation will be adjusted to move some of the sample from States with large samples to other States with fewer samples. Within States, the State-level sample will be allocated within size strata. Allocation will follow the same strategy as the State-level allocation since proportions of operations and proportions (ratios) of cattle on feed will be estimated using the data obtained from this study (Appendix D and E – Final NAHMS Feedlot 2011 Sample Allocations).

For the CATI component (2,500 feedlots), NASS will mail a pre-survey letter announcing the Feedlot 2011 Study. NAHMS-265 Feedlot 2011 General Management Questionnaire (CATI) will be administered via Computer Assisted Telephone Interviews. Data will be validated and edited during the telephone interview and the data file provided to NAHMS.

For the enumerator component (1,000 feedlots), up to seven telephone calls will be made by the NASS enumerator to set up a convenient time to introduce and explain the study. If the enumerator cannot contact the producer via phone, the enumerator will drive to the feedlot to initiate contact and will either complete the interview at that time or establish

another time for the interview. If the feedlot location cannot be established, the selected unit will be coded as inaccessible. Once contact is made, the NASS enumerator will administer NAHMS-264 (Feedlot 2011 General Management Questionnaire (Enumerator)). Upon completion of the interview, the respondent will be asked to sign a consent form allowing NASS to turn their name over to APHIS for continuation in the study; this will complete Phase I of the study. Approximately 2 out of 3 producers will sign the consent form. NASS will provide the list of producers willing to participate in the second phase of the study (additional questionnaires and in some cases, biologic sampling) to NAHMS coordinators in each State immediately following Phase I. Once all the information on NAHMS-264 has been entered and validated, NASS will send a dataset to NAHMS along with completed questionnaires via mail. The estimated overall response rate based on previous NAHMS feedlot studies is 69 percent for Phase I (as shown on APHIS-71, 10 percentage points of these are either out of business or have zero cattle on feed).

Phase II of the study consists of an on-farm interview administered by an APHIS-designated data collector, typically a veterinary medical officer (VMO). The data collector will contact the producer to set up a time to administer the study questionnaires and collect biological samples if indicated. Upon arrival on the premises, the data collector will present NAHMS-266 (Producer Agreement) to the producer which allows the producer to indicate what portion(s) of the Feedlot 2011 study they agree to participate in. Once NAHMS-266 is completed and signed, the data collector will administer NAHMS-267 (Feedlot 2011 Initial VS Visit Questionnaire) to the producer. Once NAHMS-267 has been completed, a separate time will be set up for the data collector to come back and administer NAHMS-268 (Feedlot 2011 Second VS Visit Questionnaire) and take biologic samples [NAHMS-269 (Feedlot 2011 Fecal Sample Collection and Submission Record)] depending on what the producer indicates on NAHMS-266. The data collector may set up separate times to come back to the farm to complete the biological sampling. Once NAHMS-269 has been completed, and all of the samples indicated on NAHMS-266 have been taken, Phase II of the study will be complete. The completed questionnaires will be returned to NAHMS via U.S. Mail. The estimated response rate based on previous NAHMS feedlot studies is 40 percent for the Phase II questionnaires. Approximately 90 percent of operations that complete the Phase II questionnaire and are invited will participate in collection of biological samples.

1. Estimation procedures:

The sampling design is a stratified random sample with unequal probabilities of selection. The statistical estimation will be undertaken using either SAS survey procedures or SUDAAN. Both software packages use a Taylor series expansion to estimate appropriate variances for the stratified, weighted data.

2. Degree of accuracy needed:

In order to obtain an estimate of 10% +/- 2.0% a sample size of 864 operations is needed when a simple random sample (SRS) is taken. This applies to operations with less than

1,000 cattle on feed (CATI) because the sample size is small relative to the population size. For operations with 1,000 or more cattle on feed (enumerator), a finite population correction factor is applied because the sample size is large relative to the population size, resulting in a sample size of 587 operations. Similarly, to obtain a prevalence/proportion estimate of 10% +/- 3.0% requires a simple random sample of 384 for the CATI and 317 for the enumerator component.

However, the complex survey design typically results in variances that are inflated, requiring larger sample sizes than would be needed with a SRS. Design effects for previous NAHMS studies typically ranged from less than one up to three. Assuming a typical design effect of 2.0 and a CATI “completed” survey rate of 55 percent (Appendix C), a sample size of 3,142 $[(864*2.0)/0.55]$ or 1,396 $[(384*2.0)/0.55]$ would be needed to obtain the desired precision nationally when the estimate is 10% +/- 2% or 3% respectively. Thus, if NASS selects a sample of 2,500 feedlot operations with capacity less than 1,000 cattle on feed (CATI) and we expect approximately 1,375 complete NASS responses (Appendix C), this will allow national estimates of approximately 50% +/- 3%, 20% +/- 2%, 10% +/- 1.6%.

For operations with capacity of 1,000 or more cattle on feed (enumerator), we assume a “completed” survey rate of 59 percent. Again assuming a typical design effect of 2.0, a sample size of 1,990 $[(587*2.0)/0.59]$ or 1,075 $[(317*2.0)/0.59]$ would be needed to obtain the desired precision nationally when the estimate is 10% +/- 2% or 3% respectively. Thus, if NASS selects a sample of 1,000 feedlot operations with capacity of 1,000 or more cattle on feed (enumerator) and we expect approximately 590 good NASS responses (Appendix C), this will allow national estimates of approximately 50% +/- 4%, 20% +/- 3%, 10% +/- 2.5%.

The design of the Feedlot '99 Study was very similar to the proposed design for the Feedlot 2011 Study. The initial sample size for the NASS phase was similar ($n=1,250$ in 1999). Estimates, standard errors and coefficients of variation based on 520 completed questionnaires (Appendix D) indicated that the minimum degree of precision that was desired was attained and, in some cases, exceeded for the NASS component.

Of the initial sample of 1,250 operations in the Feedlot '99 Study, 341 operations consented to be contacted for Phase II, of which 275 completed the questionnaire (yielding a response rate of 80.6 percent). With this sample size, we still achieved a level of precision of 10% +/- 3.5%.

For the Feedlot 2011 Study, the expected number of complete questionnaires for Phase II is 320, which would allow a level of precision of 10% +/- 3.3% for this phase of the 2011 survey.

- **Unusual problems requiring specialized sampling procedures and data collection cycles:**

There are no unusual problems requiring specialized sampling procedures and data collection cycles.

3. Describe methods to maximize response rates and to deal with issues of non-responses:

Study Design:

- ❑ Many previously used and proven questions have been repeated from NAHMS feedlot studies conducted in 1994 and 1999.
- ❑ The study minimizes collection of data to that which is absolutely necessary to meet the stated objectives.
- ❑ NAHMS staff will develop training for NASS enumerators that explains the purpose of the study and addresses anticipated difficulties with questions, including proper pronunciation of diseases and animal health products.
- ❑ After participating in a telephone conference call training session with NAHMS staff, each State's NAHMS coordinator (VMO) will help train NASS enumerators in their respective State.
- ❑ The NAHMS coordinator conducting training will acquaint the NASS enumerators with the NAHMS program, the enumerator's role in the information collection, the APHIS role in the data collection, and respondent benefits including the type of information to be reported resulting from the data collected.
- ❑ Similarly, for the APHIS phase, each State's NAHMS coordinator will receive up to three days of specialized training via NAHMS staff and in return train the APHIS-designated data collectors in their respective State.
- ❑ The beef specialist for NAHMS has made numerous contacts and collaborative efforts to identify the information needs of the industry and the best way to ask for information via questionnaire.
- ❑ A sample of 2,500 small feedlots and 1,000 larger feedlots will be drawn from NASS' list sampling frame. Most of the large feedlots are being contacted on a monthly basis by NASS for their monthly cattle on feed program. Coordination of these data collection efforts will be made a priority and will help in minimizing respondent burden.

A pre-survey letter¹ will be sent along with the marketing information sheet². Once personal contact is made by the enumerator the marketing information sheet will again be presented so there is a connection back to the pre-survey letter introducing the study.

Contacting Respondents:

- ❑ The study has been announced and is supported by the National Cattlemen's Beef Association (NCBA) and others allied to the feedlot industry.
- ❑ Producers selected in the large size feedlot sample will be called by the NASS enumerator up to seven times followed by an on-farm visit before they are listed as a refused or inaccessible operation. NASS enumerators have gone through specific training to help them answer questions of reluctant producers in order to maximize response rates.
- ❑ Producers selected in the small size feedlot sample will be called by NASS telephone enumerators up to 5 times before coding the sample inaccessible.
- ❑ The APHIS-designated data collector will contact farms that have consented to continue in the study and set up a convenient time for the producer to complete the questionnaire and conduct biological sampling. Training for the APHIS-designated data collector will include specific suggestions from the NASS trainers based upon their experience in avoiding refusals.

Data Collection Steps:

- ❑ Pretesting will take place in the States of Colorado and Texas during the week of April 4, 2011.
- ❑ The NASS enumerators will complete NAHMS-264 for the 1,000 or more head capacity feedlot sample, and ask eligible producers to sign the consent form during the period August 1-30, 2011.
- ❑ The NASS telephone interviewer, via CATI, will complete NAHMS-265 for the less than 1,000 head capacity feedlot sample during the period August 1-30.
- ❑ The APHIS-designated data collectors will administer NAHMS-266 to consenting producers from October 3 through December 9.

Data Analysis Steps:

Response rates, given the methods described above, are expected to be approximately 75 percent (completed including reports of zero inventory) for the CATI component one and 69 percent (completed including reports of zero inventory) for the enumerator component, phase 1 and for phase 2 80 percent completed. If the respondents differ substantially from the non-respondents there will be the potential for bias. There are two

¹ Sample of pre-survey letter is attached.

² Brochure is attached.

approaches that we will use to examine for potential bias. First, NASS' control data on their list frame will be available for both respondents and non-respondents to allow for examination of potential differences in the types of responding and non-responding producers. The information will include number of cattle on feed for each selected unit on a specific date and will be used for an evaluation of potential bias in the data collected using CATI for the small feedlots and also for the data collected by enumerators for larger feedlots. For the second phase, APHIS data collection via VMOs will have the data from the enumerator completed questionnaire for comparing respondents versus non-respondents as well as the control data from the NASS list frame. Secondly, we can compare estimates from the study with available indicators from other sources. For example, although we do not publish estimates of cattle on feed, the survey results will allow us to make estimates that we can use to compare against NASS' inventory estimates.

The complex sampling design necessitates the use of weights which reflect the initial sample selection probabilities (the inverse of the selection interval). Weights of non-respondents will be transferred to responding operations that are most similar based on available data. These data will be available from the NASS list frame for phase 1 of the study. The phase 2 weight adjustments will be based on data available from both the NASS list frame and the phase 1 results. Within categories, the sum of weights of the non-respondents and respondents will be divided by the sum of the weights of the respondents only. This factor will be used to adjust the weights of the respondents within the category. All weights for non-respondents will be set to zero. In addition, a cattle on feed inventory weight adjustment will be made using NASS published estimates.

1. *Describe any tests of procedures or methods to be undertaken.*

The proposed questionnaires will be tested during the pretest involving less than 10 respondents. Results of these pretests will be utilized to refine the questionnaires in order to reduce respondent burden and improve the usefulness of the information collected.

2. *Provide the name and telephone number of individuals consulted on statistical aspects of the design and the name of the agency unit, contractor(s), grantee(s), or other person(s) who will actually collect and /or analyze the information for the agency.*

The statistical aspects of the design were coordinated by Mr. George Hill, Statistician, USDA: APHIS, Veterinary Services, CEAH, Fort Collins, CO, (970) 494-7250.

The contact person for data collection is:

- Dr. John Clifford, Deputy Administrator, USDA: APHIS, Veterinary Services, Washington, DC (202) 447-6835.

Analysis of the data will be accomplished by NAHMS veterinarians, epidemiologists, and statisticians under the direction of:

- Dr. Bruce Wagner, National Animal Health Monitoring System, USDA: APHIS, VS, CEAH, 2150 Centre Avenue, Building B MS2E7, Fort Collins, CO 80526-8117 (970) 494-7256.

Consultants used for the Feedlot 2011 study are:

-Dr. Mike Aplev, Kansas State University, Kansas State University College of Veterinary Medicine, Manhattan, KS 66506 (785) 532-5660.

-Dr. Dave Smith, Veterinary and Biological Sciences, University of Nebraska – Lincoln, 124 Veterinary and Biological Sciences, Lincoln, NE 6853-0905 (402) 472-2362.

-Dr. Rod Moxley, Institute of Agriculture and Natural Resources School of Veterinary Medicine and Biomedical Sciences P.O. Box 830905, East Campus Loop and Fair Street Lincoln, NE 68538-0905 (402) 472-2952.

-Dr. Elizabeth Parker, Chief Veterinarian, National Cattlemen’s Beef Association, 1301 Pennsylvania Avenue NW, Suite 300, Washington D.C. 20004 (202) 347-0228.

-Dr. Mandy Carr Johnson, Executive Director National Cattlemen’s Beef Association, 9110 East Nichols Avenue, Suite 300, Centennial, CO 80112 (303) 694-0305

- Mr. Ryan Ruppert, Director of Beef Quality Assurance, National Cattlemen’s Beef Association, 9110 E. Nichols Ave. #300, Centennial, CO 80112, (303) 694-0305 .

- Dr. Tom Field, Executive Director of Producer Education, 9110 E. Nichols Ave. #300, Centennial, CO 80112, (303) 694-0305.

Appendix A: State Selection

State Selection and Sample Allocation for NAHMS Feedlot 2011

Background

The 2011 study will be the third in depth look at the feedlot industry by NAHMS. A quick overview of these studies shows:

Previous Studies

Cattle on Feed Evaluation (COFE) 1994

12 States

August 1-16, 1994

Telephone 2,070 and completed 913 (questions were a subset of the enumerator version; less than a 1,000 head capacity)

Enumerator 1,144 and completed 498 (1,000 head or more capacity)

Oct. 3-Dec. 24

VMO 498 turned over and 453 completed

Feedlot '99

12 States

1,000+ head capacity

August 16-Sept. 22, 1999

Enumerator 1,250 and completed 650

Oct. 12-Dec. 7

VMO 341 turned over and 275 completed

The first feedlot study included both small (less than 1,000 head capacity) and large feedlots (1,000 head or more one time. The second study only examined the large feedlots that had a onetime capacity of 1,000 or more head.

Recent NASS Cattle on Feed Inventory Reports

Sources

Jan. 1 Cattle Report – cattle on feed inventory published for most States annually.

Feb. Cattle on Feed Report – historically contains feedlot numbers and inventories, State-level estimates for States with a large number of cattle on feed are published as well as a few important States with less than a thousand head capacity.

US Level Estimates

A look at US level published information for 2007 – 2009 is warranted for the small and large lots. Historically, relatively few lots had most of the cattle on feed inventory. This is still seen as on January 1, 2010 these 1,000+ capacity lots accounted for only 2.6 percent of all feedlots in the US but had 80.7 percent of the cattle on feed in the US.

NASS Feb. 2009 Cattle on Feed report:

Capacity	2007				2008			
	Lots		1/08 Inv.(1,000 hd.)		Lots		1/09 Inv.(1,000hd.)	
	No.	%	No.	%	No.	%	No.	%
Less than 1,000 hd.	85,000	97.5	2,734.7	18.4	80,000	97.4	2,616.7	18.9
1,000 hd. or more	2,160	2.5	12,092	81.6	2,170	2.6	11,234	81.1
All feedlots in US	87,160	100.0	14,826.7	100.0	82,170	100.0	13,850.7	100.0

NASS Feb. 2010 Cattle on Feed report:

Capacity	<u>2008</u>				<u>2009</u>			
	Lots No.	%	1/09 Inv.(1,000 hd.) No.	%	Lots No.	%	1/10 Inv.(1,000hd.) No.	%
Less than 1,000 hd.	80,000	97.4	2,621.7	18.9	80,000	97.4	2,634.2	19.3
1,000 hd. or more	2,170	2.6	11,234	81.1	2,170	2.6	11,008	80.7
All feedlots in US	82,170	100.0	13,855.7	100.0	82,170	100.0	13,642.2	100.0

State-Level Estimates

This report contained published estimates for 12 States (in the monthly program) accounted for 96.8 percent of the cattle on feed in US feedlots with 1,000+ capacity. The Feb. Cattle on Feed report has historically published State-level number of feedlots and associated inventory but the series for number of lots was discontinued in Feb. 2009. This report provided the most recent available estimates for number of lots by State which was for 2007. State-level number of lots will now only be published in conjunction with the Census of Agriculture every five years. This report provided 11 State-level estimates for lots with capacity of less than 1,000 head as shown below. These 11 States accounted for 65.9 percent of the lots in 2007 and 81.6 percent of the inventory in lots with less than 1,000 head capacity on Jan. 1, 2008.

NASS Feb. 2009 Cattle on Feed report – State-level estimates:

	<u>No. Lots '07</u>		<u>1/08 Inv. 1,000 hd)</u>		<u>No. Lots '08</u>		<u>1/09 Inv. 1,000hd)</u>	
	Number	%	Number	%	Number	Number	Number	Number
Less than 1,000 hd.								
IL	4,800	5.7	109	4.0	NA	NA	NA	NA
IN	5,400	6.4	101	3.7	NA	NA	NA	NA
IA	7,500	8.8	780	28.5	NA	NA	NA	NA
MI	3,200	3.8	122	4.5	NA	NA	NA	NA
MN	5,300	6.2	221	8.1	NA	NA	NA	NA
MO	2,500	2.9	55	2.0	NA	NA	NA	NA
NE	3,800	4.5	170	6.2	NA	NA	NA	NA
ND	1,000	1.2	28	1.0	NA	NA	NA	NA
OH	6,400	7.5	166	6.1	NA	NA	NA	NA
PA	4,600	5.4	68	2.5	NA	NA	NA	NA
SD	3,000	3.5	170	6.2	NA	NA	NA	NA
WI	8,500	10.0	241	8.8	NA	NA	NA	NA
Other sts.	29,000	34.1	503.7	18.4	NA	NA	NA	NA
US total	85,000	100.0	2,734.7	100.0	80,000		2,616.7	
1,000 head or more								
AZ	6	.3	368	3.1	NA	358	3.2	
CA	21	1.0	560	4.3	NA	490	4.4	
CO	132	6.1	1,100	9.1	NA	1,000	8.9	

ID	39	1.8	235	2.0	NA	220	1.9
IA	345	16.0	570	4.7	NA	500	4.5
KS	200	9.3	2,480	20.5	NA	2,270	20.2
NE	770	35.6	2,530	20.9	NA	2,370	21.1
NM	8	.3	160	1.3	NA	164	1.5
OK	23	1.1	350	2.9	NA	335	3.0
SD	176	8.1	230	1.9	NA	220	1.9
TX	128	5.9	2,960	24.5	NA	2,790	24.8
WA	12	.6	159	1.3	NA	157	1.4
Other sts.	300	13.9	390	3.2	NA	360	3.2
US total	2,160	100.0	12,092	100.0	2,170	11,234	100.0
Total US – all feedlots	82,160		14,826.7			13,850.7	

NASS Feb. 2010 Cattle on Feed report – State-level estimates:

Less than 1,000 head – no State-level estimates published for number of lots or inventory.
 1,000 hd. or more – no State-level estimates published for number of lots. The 12 published States accounted for 96.3 percent of the Jan. 1, 2010 inventory. The previous year inventories were also published and were unchanged from the original publication.

	<u>No. Lots '09</u>		<u>1/10 Inv. 1,000 hd)</u>	
	Number	%	Number	%
1,000 hd. or more				
AZ	NA		287	2.6
CA	NA		465	4.2
CO	NA		1,010	9.2
ID	NA		215	2.0
IA	NA		570	5.2
KS	NA		2,250	20.4
NE	NA		2,360	21.4
NM	NA		(D) /1	-
OK	NA		365	3.3
SD	NA		235	2.1
TX	NA		2,680	24.4
WA	NA		166	1.5
Other sts.	NA		405	3.7
US total	NA		11,008	100.0

(D) Withheld to avoid disclosing data for individual operations.

1/ New Mexico is included with other States total.

Conclusion – States Selected for 1,000 + Capacity Feed Lot Study

These feedlots account for over 80 percent of all cattle on feed in the US (1/10 – 80.7%; 1/9 – 81.1 % and 1/8 – 81.6%) although only accounting for less than 3 percent of the feedlots in the US (2009 -2.6%; 2008 – 2.6% and 2007 – 2.5%).

The 12 States in the program account for over 96 percent of the cattle on feed in the 1,000 + capacity feedlots in the US (1/10 – 96.3%; 1/9 – 96.8% and 1/9 – 96.8%). These States should therefore be the focus of the in-depth cattle on feed study.

Discussion and Conclusion – States Important for – Less than 1,000 head Capacity Feed Lot Study

As seen in the table above the NASS Feb. 2009 Cattle on Feed report published State-level estimates for the following 12 States: IL, IN, IA, MI, MN, MO NE, ND, OH, PA, SD and WI.

An evaluation of the 2007 Census of Agriculture data for farms and inventory for those farms with less than 500 head of cattle on feed (slightly different criteria than feedlot capacity) using a rule of 2 percent or more of the US total of either farms or inventory confirms the importance of those individual States published by NASS with the exception of North Dakota. This State was published by NASS but only had .67 percent of the US feedlots and only 1.02 percent of the US inventory of less than 500 head. In addition, two States met the criteria but were not published – Kansas and Texas. The following table shows the resulting important 13 States which cover 85.39 percent of the farms with less than 500 head of cattle on feed and 90.54 percent of the US less than 500 head inventory.

State	Number	% of U.S.		Number	% of U.S.
Illinois	3167	6.82		162291	6.31
Indiana	2554	5.50		81397	3.17
Iowa*	6190	13.32		559587	21.77
Kansas*	1033	2.22		106666	4.15
Michigan	2810	6.05		104246	4.06
Minnesota	5336	11.49		320841	12.48
Missouri	1448	3.12		55649	2.16
Nebraska*	1899	4.09		223542	8.70
Ohio	3925	8.45		128475	5.00
Pennsylvania	2993	6.44		108899	4.24
South Dakota*	1541	3.32		175629	6.83
Texas*	1320	2.84		63045	2.45
Wisconsin	5455	11.74		237334	9.23
United States	46,458	100.00		2,570,705	100.00
Total 13 States	39,671	85.39		2,327,601	90.54
Total*	11,983	25.79		1,128,469	43.90
* Core 1,000+ capacity States					

Sample Allocation for 1,000+ Capacity Feedlots

Sample allocation will be performed in conjunction with the NASS monthly cattle on feed program. One thousand feedlots will be selected from the 1,860 feedlots as published in Feb. 2009 report. This means approximately one half of feedlots in each State will be selected within strata for each State.

Sample Allocation for Less Than 1,000 head Capacity Feedlots

State	Farms		Inventory		Wtd %	Sample
	Number	% of total	Number	% of total		
Illinois	3,167	7.98	162,291	6.97	7.38	184
Indiana	2,554	6.44	81,397	3.50	4.67	117
Iowa*	6,190	15.60	559,587	24.04	20.67	517
Kansas*	1,033	2.60	106,666	4.58	3.79	95
Michigan	2,810	7.08	104,246	4.48	5.52	138
Minnesota	5,336	13.45	320,841	13.78	13.65	341
Missouri	1,448	3.65	55,649	2.39	2.89	72
Nebraska*	1,899	4.79	223,542	9.60	7.68	192
Ohio	3,925	9.89	128,475	5.52	7.27	182
Pennsylvania	2,993	7.54	108,899	4.68	5.82	146
South Dakota*	1,541	3.88	175,629	7.55	6.08	152
Texas*	1,320	3.33	63,045	2.71	2.96	74
Wisconsin	5,455	13.75	237,334	10.20	11.62	290
Total	39,671	100.00	2,327,601	100.00	100.00	2500

Appendix B: Review of Previous Response Rates

1. Cattle on Feed Evaluation (COFE) 1994

a. Response rates:

Questionnaire	Collection dates	Sample	Compl.	Compl. %	Good*	% good
Feedlot Mgmt Rept – Small Lots (NASS)	8/1/94-9/16/94	2,070	913	44.1	913	44.1
Feedlot Mgmt Rept – Large Lots (NASS)	8/1/94-9/16/94	1,144	498	43.5	498	43.5

Health and Health Mgmt (VMO)	10/3/94-12/21/94	498	453	91.0	453	91.0
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2. Feedlot '99
a. Response rates:

Questionnaire	Collection dates	Sample	Compl.	Compl. %	Good*	% good
Feedlot Mgmt Rept (NASS)	8/16-9/22/99	1,250	650	52.0	520	41.6
Health and Health Mgmt (VMO)	10/12-1/7/99	341	275	80.6	275	80.6

*Complete data and were in scope.

Appendix C: NAHMS Feedlot 2011 Estimated Response Rates

Phase	Response category	Percentage in phase	Expected counts
CATI	Zero on hand	20.0	500
	Complete	55.0	1375
	Refusal	25.0	625
	Total	100.0	2500
Phase I Enumerator	Complete and agree to continue	40.0	400
	Complete and do not agree to continue	19.0	190
	Complete Phase I	59.0	590
	Zero on hand	10.0	100
	Out of scope	1.0	10
	Refusal	30.0	300
	Total	100.0	1000
Phase II VMO	Complete	32.0	320
	Refusal	8.0	80
	Subtotal	40.0	400
	Ineligible from first phase	11.0	(100 + 10) 110
	Refusal from first phase	49.0	(190 + 300) 490
	Total	100.0	1000

**Appendix D: NAHMS Feedlot 2011 Sample
State and Strata Sample Allocations for fewer than 1,000 head feedlots***

Final NAHMS Feedlot 2011 State Sample Allocations						
		Herd Size				
State	FIPS Code	1-99	100-199	200-499	500-999	Total
Illinois	17	93	37	43	34	207
Indiana	18	48	16	16	13	93
Iowa	19	110	76	110	115	411
Kansas	20	52	33	46	53	184
Michigan	26	59	23	29	20	131
Minnesota	27	105	49	58	50	262
Missouri	29	33	16	17	17	83
Nebraska	31	57	43	65	65	230
Ohio	39	73	28	30	25	156
Pennsylvania	42	62	23	26	16	127
South Dakota	46	45	39	62	63	209
Texas	48	98	33	44	30	205
Wisconsin	55	90	42	42	28	202
Total		925	458	588	529	2500

*General Feedlot Management Questionnaire (CATI).

**Appendix E: NAHMS Feedlot 2011 Sample
State and Strata Sample Allocations for 1,000 head or more feedlots***

Final NAHMS Feedlot 2011 State Sample Allocations							
State	FIPS Code	Herd Size					Total
		1-4K	4-8K	8-16K	16-32K	32K+	
Arizona	4	0	1	0	1	2	4
California	6	3	2	1	5	7	18
Colorado	8	31	19	10	14	11	85
Idaho	16	4	3	4	2	2	15
Iowa	19	176	23	6		1	206
Kansas	20	18	19	20	24	30	111
Nebraska	31	190	73	38	22	13	336
New Mexico	35	8	2	1	2	1	14
Oklahoma	40	3	2	2	3	7	17
South Dakota	46	64	13	3	1	0	81
Texas	48	7	7	12	36	34	96
Washington	53	7	4	1	2	3	17
Total		511	168	98	112	111	1000

*General Feedlot Management Questionnaire (Enumerator).