Traceability, Biosecurity and Health Management by U.S. Cow-Calf Operations

2018 Survey Summary

- Survey conducted by Kansas State University.
- Survey distributed by BEEF Magazine.
- Data collected October 22, 2018 to January 31, 2019.

Kansas State University
Extension and Outreach

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Objective

This study was conducted to understand beef industry characteristics, traceability adoption and perceptions, biosecurity adoption and perceptions, and management and marketing factors influence producer traceability and biosecurity decision making. This survey focused on collecting information from seedstock and cow-calf operations.

Survey and Sample Design

This survey was developed by James Mitchell, assistant professor of agricultural economics and agribusiness at the University of Arkansas (formerly Kansas State University Ph.D. student), Glynn Tonsor, professor of agricultural economics at Kansas State University, and Lee Schulz, associate professor and extension livestock economist at Iowa State University. The survey questionnaire was vetted internally. Informa Engage formatted and printed the final survey questionnaire

BEEF Magazine developed an eligible mail distribution list of 1,500 United States cattle producers based on the requirement that the operation has at least 20 head of beef cows in inventory. In an effort to increase survey response, a $1 bill, cover letter, and postage-paid return envelope were included in each invitation packet.

Data Collection and Survey Response

Survey procedures were approved by the Kansas State University Committee on Research Involving Human Subjects and Institutional Review Board (Proposal Number 9434). Informa Engage provided data collection and processing. Printed survey invitation packets were mailed on October 22, 2018, with no follow-up solicitation. Survey responses were accepted until January 31, 2019.

Data for 301 partially complete or complete responses were received on December 21, 2018. Data for an additional 17 partially complete or complete responses were received on February 20, 2019. The final response rate was 22%, and data included 318 partially complete or complete responses

Acknowledgements

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2018 Survey Summary

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Which operation type best describes your cattle operation?

	Number reporting	Percent reporting
Commercial	245	77.3%
Both Commercial and Seedstock	45	14.2%
Seedstock	17	5.4%
Other	10	3.2%
Total	**317**	**100.0%**

Which marketing method do you most frequently use in marketing your operation's cattle?

	Number reporting	Percent reporting
Sale barn/auction	189	59.8%
Direct-Video/Internet auction	21	6.6%
Direct-private treaty	65	20.6%
Consignment	4	1.3%
Forward contact	9	2.8%
Carcass basis	12	3.8%
Other	16	5.1%
Total	**316**	**100.0%**

Do the same buyers purchase cattle from your operation each year?

	Number reporting	Percent reporting
No	135	43.8%
Yes	173	56.2%
Total	**308**	**100.0%**

Do you usually provide buyers with information about your operation's health programs?

	Number reporting	Percent reporting
No	101	32.3%
Yes	212	67.7%
Total	**313**	**100.0%**

How is this information most frequently shared?

	Number reporting	Percent reporting
Written documentation	93	44.5%
Electronic documentation	5	2.4%
Tell buyer orally	100	47.8%
Other	11	5.3%
Total	**209**	**100.0%**

Has your operation had any of the following disease outbreaks in the last 5 years?

	Bovine Viral Diarrhea		Trichomoniasis	
	Number reporting	Percent reporting	Number reporting	Percent reporting
Yes	16	5.5%	1	0.4%
No Disease Problem	274	94.5%	283	99.6%
Total	**290**	**100.0%**	**284**	**100.0%**

If yes, how many months ago was the most recent case?

	Bovine Viral Diarrhea		Trichomoniasis	
	Number reporting	Percent reporting	Number reporting	Percent reporting
Less than 1 month ago	0	0.0%	0	0%
1 to 6 months ago	6	42.9%	0	0%
7 to 12 months ago	5	35.7%	0	0%
13 to 18 months ago	1	7.1%	0	0%
19 to 24 months ago	0	0.0%	0	0%
25 to 39 months ago	0	0.0%	0	0%
31 to 36 months ago	2	14.3%	0	0%
37 months or more	0	0.0%	1	100%
Total	**14**	**100.0%**	**1**	**100%**

	Bovine Tuberculosis		Vesicular Stomatitis	
	Number reporting	Percent reporting	Number reporting	Percent reporting
Yes	1	0.4%	0	0.0%
No	283	99.6%	284	100.0%
Total	**284**	**100.0%**	**284**	**100.0%**

If yes, how many months ago was the most recent case?

	Bovine Tuberculosis		Vesicular Stomatitis	
	Number reporting	Percent reporting	Number reporting	Percent reporting
Less than 1 month ago	0	0.0%	0	0.0%
1 to 6 months ago	1	100.0%	1	100.0%
7 to 12 months ago	0	0.0%	0	0.0%
13 to 18 months ago	0	0.0%	0	0.0%
19 to 24 months ago	0	0.0%	0	0.0%
25 to 39 months ago	0	0.0%	0	0.0%
31 to 36 months ago	0	0.0%	0	0.0%
37 months or more	0	0.0%	0	0.0%
Total	**1**	**100.0%**	**1**	**100.0%**

	Infectious Bovine Rhinotracheitis (IBRV)		Other*	
Column1	Number reporting	Percent reporting	Number reporting2	Percent reporting3
Yes	4	1.4%	14	6.1%
No	276	98.6%	215	93.9%
Total	280	100.0%	229	100.0%

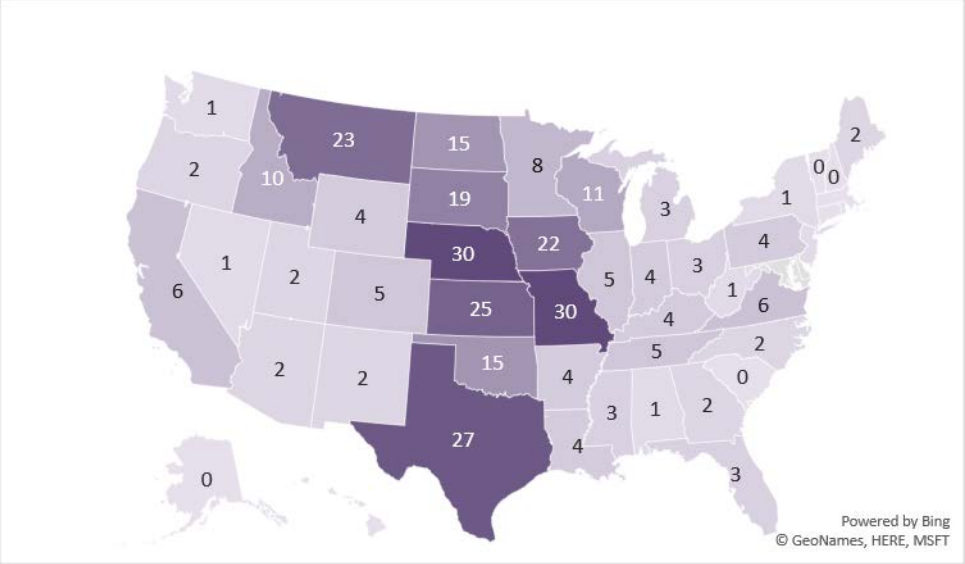
If yes, how many months ago was the most recent case?

	Infectious Bovine Rhinotracheitis (IBRV)		Other*	
	Number reporting	Percent reporting	Number reporting	Percent reporting
Less than 1 month ago	0	0.0%	0	0.0%
1 to 6 months ago	5	50.0%	6	50.0%
7 to 12 months ago	2	20.0%	1	8.3%
13 to 18 months ago	0	0.0%	3	25.0%
19 to 24 months ago	1	10.0%	0	0.0%
25 to 39 months ago	0	0.0%	1	8.3%
31 to 36 months ago	0	0.0%	1	8.3%
37 months or more	2	20.0%	0	0.0%
Total	**10**	**100.0%**	**12**	**100.0%**

During the last 12 months, did your operation consult a veterinarian for:

	Number reporting	Percent reporting	Number reporting	Percent reporting
Disease diagnosis or treatment?	148	35%	154	15.7%
Disease prevention?	173	41%	119	12.1%
Livestock deaths?	66	16%	210	21.4%
Information on biosecurity prevention?	20	5%	245	24.9%
Information on foreign animal diseases?	10	2%	254	25.9%
Total	**417**	**100%**	**982**	**100.0%**

In which state is your cattle operation?



Biosecurity for beef cattle operations is often defined as the implementation of protocols designed to reduce the likelihood of unwanted pests and disease threats from entering the cattle herd. Which practice best describes the level of biosecurity implemented on your operation?

	Number reporting	Percent reporting
Maintain a closed herd	101	32.7%
No entry of new cattle but reentry of existing cattle allowed	25	8.1%
Entry of new cattle with known medical records and initial quarantine	67	21.7%
Entry of new cattle with known medical records but no initial quarantine	67	21.7%
Entry of new cattle with no known medical records and no initial quarantine	49	15.9%
Total	**309**	**100.0%**

How would you rate the biosecurity of your operation compared to other operations in your area?

	Number reporting	Percent reporting
Very low-1	13	4.3%
2	7	2.3%
3	17	5.6%
4	10	3.3%
5	69	22.8%
6	32	10.6%
7	53	17.5%
8	33	10.9%
9	44	14.5%
Very high-10	25	8.3%
Total	**303**	**100.0%**

Approximately, what portion of your total annual cow costs are allocated to biosecurity efforts?

	Number reporting	Percent reporting
Less than 10 percent	173	71.5%
10 to 19 percent	39	16.1%
20 to 29 percent	12	5.0%
30 to 39 percent	4	1.7%
40 to 49 percent	0	0.0%
50 percent or more	14	5.8%
Total	**242**	**100.0%**

For the biosecurity practices listed below, please check the left column for those used on your operation. Also please indicate by circling a number, how feasible you believe implementation of each would if an FMD outbreak occurred in the U.S.

There is a designated biosecurity manager for the operation

	Number reporting	Percent reporting
Used	28	14.1%
Highly Infeasible	47	23.7%
Infeasible	26	13.1%
Neutral	44	22.2%
Feasible	37	18.7%
Highly Feasible	16	8.1%
Total	**198**	**100.0%**

An operation-specific, written, enhanced biosecurity plan has been developed

	Number reporting	Percent reporting
Used	9	5.3%
Highly Infeasible	33	19.3%
Infeasible	29	17.0%
Neutral	56	32.7%
Feasible	36	21.1%
Highly Feasible	8	4.7%
Total	**171**	**100.0%**

Animals come only from sources with documented enhanced biosecurity practices

	Number reporting	Percent reporting
Used	46	19.9%
Highly Infeasible	21	9.1%
Infeasible	19	8.2%
Neutral	57	24.7%
Feasible	61	26.4%
Highly Feasible	27	11.7%
Total	**231**	**100.0%**

A plan exists to manage animals in a biosecure manner on-site in the event animal movement is stopped for several weeks

	Number reporting	Percent reporting
Used	48	20.6%
Highly Infeasible	21	9.0%
Infeasible	14	6.0%
Neutral	62	26.6%
Feasible	57	24.5%
Highly Feasible	31	13.3%
Total	**233**	**100.0%**

Feedstuffs are delivered, stored, mixed, and fed in a manner that minimizes contamination, and feed spills are cleaned promptly

	Number reporting	Percent reporting
Used	135	38.7%
Highly Infeasible	14	4.0%
Infeasible	8	2.3%

Neutral	39	11.2%
Feasible	81	23.2%
Highly Feasible	72	20.6%
Total	**349**	**100.0%**

A line of Separation (LOS) is an outer control boundary around, or within, the premises to limit movement of virus into areas where animals can be exposed. Please check the left column for those used on your operation. Also please indicate by circling a number, how feasible you believe implementation of each would be if an FMD outbreak occurred in the U.S.

A line of separation is clearly defined and marked in the operation

	Number reporting	Percent reporting
Used	26	13.5%
Highly Infeasible	32	16.6%
Infeasible	27	14.0%
Neutral	43	22.3%
Feasible	52	26.9%
Highly Feasible	13	6.7%
Total	**193**	**100.0%**

Entry to the operation is restricted to a limited number of access points

	Number reporting	Percent reporting
Used	68	26.9%
Highly Infeasible	28	11.1%
Infeasible	22	8.7%
Neutral	34	13.4%
Feasible	70	27.7%
Highly Feasible	31	12.3%
Total	**253**	**100.0%**

Nose-to-nose contact with livestock on adjacent premises is prevented

	Number reporting	Percent reporting
Used	68	26.3%
Highly Infeasible	38	14.7%
Infeasible	37	14.3%
Neutral	28	10.8%
Feasible	59	22.8%
Highly Feasible	29	11.2%
Total	**259**	**100.0%**

Access is limited to individuals who are essential to the operation

	Number reporting	Percent reporting
Used	68	26.4%
Highly Infeasible	25	9.7%
Infeasible	25	9.7%
Neutral	33	12.8%
Feasible	72	27.9%
Highly Feasible	35	13.6%
Total	**258**	**100.0%**

Vehicles, trailers, and equipment that cross the LOS are properly cleaned at an Access Point

	Number reporting	Percent reporting
Used	29	14.3%
Highly Infeasible	33	16.3%
Infeasible	28	13.8%
Neutral	41	20.2%
Feasible	54	26.6%
Highly Feasible	18	8.9%
Total	**203**	**100.0%**

Animals leaving the operation only move in one direction across the LOS at an Access Point

	Number reporting	Percent reporting
Used	53	23.2%
Highly Infeasible	27	11.8%
Infeasible	26	11.4%
Neutral	39	17.1%
Feasible	55	24.1%
Highly Feasible	28	12.3%
Total	**228**	**100.0%**

The area designated for loading/unloading animals is not a people entry point

	Number reporting	Percent reporting
Used	47	21.1%
Highly Infeasible	30	13.5%
Infeasible	33	14.8%
Neutral	37	16.6%

Feasible	52	23.3%
Highly Feasible	24	10.8%
Total	**223**	**100.0%**

Areas contaminated by personnel or animals after unloading are properly cleaned and disinfected

	Number reporting	Percent reporting
Used	14	7.8%
Highly Infeasible	33	18.4%
Infeasible	43	24.0%
Neutral	41	22.9%
Feasible	35	19.6%
Highly Feasible	13	7.3%
Total	**179**	**100.0%**

Please indicate your level of agreement with the following statements.

I am willing to take animal health risks in order to make more money

	Number reporting	Percent reporting
Strongly disagree	127	43.8%
Disagree	85	29.3%
Neutral	38	13.1%
Agree	32	11.0%
Strongly agree	8	2.8%
Total	**290**	**100.0%**

With respect to the conduct of my business, I prefer certainty to uncertainty

	Number reporting	Percent reporting
Strongly disagree	18	6.3%
Disagree	11	3.8%
Neutral	38	13.3%
Agree	153	53.5%
Strongly agree	66	23.1%
Total	**286**	**100.0%**

I am willing to take financial risks in order to realize higher average returns

	Number reporting	Percent reporting
Strongly disagree	41	14.3%
Disagree	47	16.4%
Neutral	102	35.5%
Agree	85	29.6%
Strongly agree	12	4.2%
Total	287	100.0%

My cattle operation is protected from financial risks

	Number reporting	Percent reporting
Strongly disagree	29	10.1%
Disagree	73	25.5%
Neutral	116	40.6%
Agree	54	18.9%
Strongly agree	14	4.9%
Total	**286**	**100.0%**

My cattle operation is protected from animal disease risks

	Number reporting	Percent reporting
Strongly disagree	23	7.9%
Disagree	42	14.4%
Neutral	102	34.9%
Agree	104	35.6%
Strongly agree	21	7.2%
Total	**292**	**100.0%**

With respect to animal health, I prefer certainty to uncertainty

	Number reporting	Percent reporting
Strongly disagree	12	4.1%
Disagree	4	1.4%
Neutral	35	12.0%
Agree	145	49.7%
Strongly agree	96	32.9%
Total	**292**	**100.0%**

Which animal identification methods do you currently use?

	Number reporting	Percent reporting
Plastic ear tag	288	38.7%
Metal ("Bright") tag	54	7.2%
Brand	172	23.1%
Tattoo	67	9.0%
Brucellosis tag	124	16.6%
Electronic ear tag (RFID)	24	3.2%
None	11	1.5%
Other	5	0.7%
Total	**745**	**100.0%**

What would it cost you to participate in a Visual Traceability program that involved applying “traditional ear tags” that are read manually upon human inspection?

	Number reporting	Percent reporting
Less than $1/head	33	11.9%
$1 to $4/head	178	64.0%
$5 to $8/head	57	20.5%
$9 to $12/head	3	1.1%
$13 to $16/head	4	1.4%
More than $16/head	3	1.1%
Total	**278**	**100.0%**

What would it cost you to participate in an Electronic Traceability program would involve applying "button-like" radio frequency identification tags readable by electronic readers?

	Number reporting	Percent reporting
Less than $1/head	8	3.6%
$1 to $4/head	38	17.3%
$5 to $8/head	59	26.8%
$9 to $12/head	47	21.4%
$13 to $16/head	22	10.0%
More than $16/head	46	20.9%
Total	**220**	**100.0%**

In designing a national, individual animal traceability system how important are the following in the U.S. beef industry?

Monitoring/managing disease

	Number reporting	Percent reporting
Entirely Unimportant	4	1.4%
Unimportant	1	0.3%
Neutral	34	11.6%
Important	138	46.9%
Very Important	117	39.8%
Total	**294**	**100.0%**

Increasing consumer confidence

	Number reporting	Percent reporting
Entirely Unimportant	3	1.0%
Unimportant	3	1.0%
Neutral	32	10.8%
Important	118	40.0%
Very Important	139	47.1%
Total	**295**	**100.0%**

Enhancing marketability

	Number reporting	Percent reporting
Entirely Unimportant	2	0.7%
Unimportant	1	0.3%
Neutral	48	16.4%
Important	140	47.8%
Very Important	102	34.8%
Total	293	100.0%

Maintaining current foreign markets

	Number reporting	Percent reporting
Entirely Unimportant	5	1.7%
Unimportant	4	1.4%
Neutral	45	15.2%
Important	116	39.2%
Very Important	126	42.6%
Total	**296**	**100.0%**

Accessing foreign markets

	Number reporting	Percent reporting
Entirely Unimportant	6	2.0%
Unimportant	3	1.0%
Neutral	60	20.5%
Important	95	32.4%
Very Important	129	44.0%
Total	**293**	**100.0%**

Improving on-farm management

	Number reporting	Percent reporting
Entirely Unimportant	6	2.0%
Unimportant	8	2.7%
Neutral	70	23.6%
Important	145	49.0%
Very Important	67	22.6%
Total	**296**	**100.0%**

Managing the supply chain

	Number reporting	Percent reporting
Entirely Unimportant	4	1.4%
Unimportant	13	4.5%
Neutral	83	28.4%
Important	129	44.2%
Very Important	63	21.6%
Total	**292**	**100.0%**

Enhancing food supply

	Number reporting	Percent reporting
Entirely Unimportant	5	1.7%
Unimportant	4	1.4%
Neutral	41	13.9%
Important	115	39.1%
Very Important	129	43.9%
Total	**294**	**100.0%**

In designing national, individual animal traceability system how concerned are you regarding the following issues in the U.S. beef industry?

Cost to participating producer

	Number reporting	Percent reporting
Entirely unconcerned	2	0.7%
Unconcerned	9	3.3%
Neutral	26	9.4%
Concerned	145	52.5%
Very Concerned	94	34.1%
Total	**276**	**100.0%**

Confidentiality of information

	Number reporting	Percent reporting
Entirely unconcerned	5	1.7%
Unconcerned	19	6.3%
Neutral	62	20.7%
Concerned	117	39.0%
Very Concerned	97	32.3%
Total	**300**	**100.0%**

Reliability of technology

	Number reporting	Percent reporting
Entirely unconcerned	7	2.3%
Unconcerned	10	3.3%
Neutral	62	20.6%
Concerned	135	44.9%
Very Concerned	87	28.9%
Total	**301**	**100.0%**

Liability of participating firms

	Number reporting	Percent reporting
Entirely unconcerned	4	1.3%
Unconcerned	9	3.0%
Neutral	44	14.5%
Concerned	117	38.6%
Very Concerned	129	42.6%
Total	**303**	**100.0%**

Non-participating firms benefitting

	Number reporting	Percent reporting
Entirely unconcerned	7	2.4%
Unconcerned	11	3.7%
Neutral	92	31.1%
Concerned	97	32.8%
Very Concerned	89	30.1%
Total	**296**	**100.0%**

Failure of system to meet stated goals

	Number reporting	Percent reporting
Entirely unconcerned	5	1.7%
Unconcerned	4	1.3%
Neutral	68	22.8%
Concerned	134	45.0%
Very Concerned	87	29.2%
Total	**298**	**100.0%**

Implementing individual animal traceability systems:

"is more effective for larger cow-calf operations."

	Number reporting	Percent reporting
Strongly disagree	14	4.7%
Disagree	40	13.4%
Neutral	103	34.4%
Agree	116	38.8%
Strongly agree	26	8.7%
Total	**299**	**100.0%**

"results in more liability for cow-calf producers than cattle owners at other stages of production."

	Number reporting	Percent reporting
Strongly disagree	9	3.0%
Disagree	21	7.0%
Neutral	103	34.6%
Agree	128	43.0%

Strongly agree	37	12.4%
Total	**298**	**100.0%**

"is unnecessary if COOL (country-of-origin labeling) was implemented nationally."

	Number reporting	Percent reporting
Strongly disagree	27	9.1%
Disagree	62	20.8%
Neutral	112	37.6%
Agree	64	21.5%
Strongly agree	33	11.1%
Total	**298**	**100.0%**

"as a mandated system is exaggerated in need."

	Number reporting	Percent reporting
Strongly disagree	14	4.8%
Disagree	41	13.9%
Neutral	116	39.5%
Agree	94	32.0%
Strongly agree	29	9.9%
Total	**294**	**100.0%**

What is your age?

	Number reporting	Percent reporting
21-30 years	4	1.3%
31-40 years	14	4.6%
41-50 years	21	7.0%
51-60 years	58	19.2%
61-70 years	96	31.8%
71-80 years	78	25.8%
81 years or more	31	10.3%
Total	**302**	**100.0%**

What is your gender?

	Number reporting	Percent reporting
Male	283	92.2%
Female	24	7.8%
Total	**307**	**100.0%**

What is the highest level of education that you have completed?

	Number reporting	Percent reporting
High school graduate/GED	141	45.6%
Some college or 2-year college/technical degree	70	22.7%
4-year college degree	63	20.4%
Graduate degree (MS, PhD, DVM, etc.)	33	10.7%
Other	2	0.6%
Total	**309**	**100.0%**

Approximately, what portion of your household income is from off-farm sources?

	Number Reporting	Percent Reporting
0% to 25%	47	16%
26% to 50%	69	24%
51% to 75%	39	13%
76% to 99%	58	20%
100%	78	27%
Total	**291**	**100%**

What was your inventory on January 1, 2018 of cows, replacement (bred or open), and bulls?

Cows

	Number reporting	Percent reporting
Less than 100	98	33.8%
100 to 249	128	44.1%
250 to 499	44	15.2%
500 or more	20	6.9%
Total	**290**	**100.0%**

Replacement Heifers

	Number reporting	Percent reporting
Less than 25	146	57.0%
25 to 49	53	20.7%
50 to 74	24	9.4%
75 or more	33	12.9%
Total	**256**	**100.0%**

Bulls

	Number reporting	Percent reporting
Less than 5	100	36.4%
5 to 14	113	41.1%
15 to 24	30	10.9%
25 or more	32	11.6%
Total	**275**	**100.0%**

What was your total annual cow cost for 2018?

	Number reporting	Percent reporting
Less than $250 per head	25	14.3%
$250 to $499 per head	58	33.1%
$500 to $749 per head	71	40.6%
$750 to $999 per head	16	9.1%
$1000 or more per head	5	2.9%
Total	**175**	**100.0%**

How many years of experience in cattle production of you have?

	Number reporting	Percent reporting
Less than 20 years	20	6.7%
20 to 39 years	67	22.4%
40 to 59 years	154	51.5%
60 to 79 years	52	17.4%
80 years or more	6	2.0%
Total	**299**	**100.0%**

How many more years do you expect to be in cattle production?

	Number reporting	Percent reporting
Less than 10 years	62	25.7%
10 to 19 years	88	36.5%
20 to 29 years	54	22.4%
30 to 39 years	18	7.5%
40 to 49 years	6	2.5%
50 years or more	13	5.4%
Total	**241**	**100.0%**

Scenario #1 Question 29-C1

	Number reporting	Percent reporting
Visual Traceability	39	42.4%
Electronic Traceability	42	45.7%
No Traceability	11	12.0%
Total	**92**	**100.0%**

Scenario #2

	Number reporting	Percent reporting
Visual Traceability	39	41.5%
Electronic Traceability	29	30.9%
No Traceability	26	27.7%
Total	**94**	**100.0%**

Scenario #3

	Number reporting	Percent reporting
Visual Traceability	54	60.0%
Electronic Traceability	15	16.7%
No Traceability	21	23.3%
Total	**90**	**100.0%**

Scenario #4

	Number reporting	Percent reporting
Visual Traceability	26	30.2%
Electronic Traceability	47	54.7%
No Traceability	13	15.1%
Total	**86**	**100.0%**

Scenario #5

	Number reporting	Percent reporting
Visual Traceability	35	40.2%
Electronic Traceability	39	44.8%
No Traceability	13	14.9%
Total	**87**	**100.0%**

Scenario #1 Question 26-C2

	Number reporting	Percent reporting
Visual Traceability	31	32.3%
Electronic Traceability	43	44.8%
No Traceability	22	22.9%
Total	**96**	**100.0%**

Scenario #2

	Number reporting	Percent reporting
Visual Traceability	51	54.3%
Electronic Traceability	38	40.4%
No Traceability	5	5.3%
Total	**94**	**100.0%**

Scenario #3

	Number reporting	Percent reporting
Visual Traceability	24	25.8%
Electronic Traceability	53	57.0%
No Traceability	16	17.2%
Total	**93**	**100.0%**

Scenario #4

	Number reporting	Percent reporting
Visual Traceability	31	34.8%
Electronic Traceability	37	41.6%
No Traceability	21	23.6%
Total	**89**	**100.0%**

Scenario #5

	Number reporting	Percent reporting
Visual Traceability	76	81.7%
Electronic Traceability	10	10.8%
No Traceability	7	7.5%
Total	**93**	**100.0%**

Scenario #6

	Number reporting	Percent reporting
Visual Traceability	24	27.0%
Electronic Traceability	48	53.9%
No Traceability	17	19.1%
Total	**89**	**100.0%**

Scenario #1 Question 29-C3

	Number reporting	Percent reporting
Visual Traceability	19	25.7%
Electronic Traceability	44	59.5%
No Traceability	11	14.9%
Total	**74**	**100.0%**

Scenario #2

	Number reporting	Percent reporting
Visual Traceability	21	28.0%
Electronic Traceability	44	58.7%
No Traceability	10	13.3%
Total	**75**	**100.0%**

Scenario #3

	Number reporting	Percent reporting
Visual Traceability	18	25.4%
Electronic Traceability	29	40.8%
No Traceability	24	33.8%
Total	**71**	**100.0%**

Scenario #4

	Number reporting	Percent reporting
Visual Traceability	11	14.9%
Electronic Traceability	51	68.9%
No Traceability	12	16.2%
Total	**74**	**100.0%**

Scenario #5

	Number reporting	Percent reporting
Visual Traceability	15	20.0%
Electronic Traceability	36	48.0%
No Traceability	24	32.0%
Total	**75**	**100.0%**

Biosecurity and Health Management by U.S. Cattle Producers

2018 Survey Summary

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