



Record-keeping Practices on U.S. Beef Cow-calf Operations

Maximizing production efficiency—and operation profitability—requires that beef producers be able to evaluate the effects that changes in management practices have on herd productivity. To establish accurate benchmarks for measuring the effects of management changes, producers need to maintain detailed records on herd health and production, natural resources, and finances. The information producers gain by tracking changes will enable them to make logical management decisions and take full advantage of advances in health management and breeding practices.

For example, producers can evaluate the impact that altering the vaccination protocol for pregnant cows has on calf survival; however, to really understand the difference, they should also have records on other factors that could affect calf survival, such as weather events, sire, etc.

In 2007–08, the U.S. Department of Agriculture’s National Animal Health Monitoring System (NAHMS) studied beef cow-calf health and management practices. The Beef 2007–08 study was conducted in 24 States, grouped into 4 regions,* representing 79.6 percent of U.S. operations with beef cows and 87.8 percent of U.S. beef cows. Herds were grouped into 4 size categories: 1 to 49, 50 to 99, 100 to 199, or 200 or more cows.**

One goal of the Beef 2007–08 study was to examine record-keeping practices on cow-calf operations, as reported by the producers.

General record-keeping practices

Collection of detailed management data is facilitated by a good record-keeping system, whether it be hand-written notes or a computer program. According to NAHMS Beef 2007-08, the majority of operations (83.3 percent) kept some form of records, and more than 90 percent of operations with 100 or more cows kept

records (table 1). Across herd sizes, more than three-fourths of operations kept hand-written records. The percentage of operations that kept records on a computer located on the operation ranged from 13.3 percent of operations with 1 to 49 beef cows to 37.4 percent of operations with 200 or more beef cows. A higher percentage of operations with 200 or more beef cows kept records on a computer located off the operation than operations in any other size category. (Examples of records kept on a computer located off the operation include performance records maintained by a beef improvement association and production records maintained by a private firm.)

Table 1. Percentage of Operations by Record-keeping System Used, and by Herd Size:

Record-keeping System	Percent Operations				
	Herd Size (Number of Beef Cows)				
	1-49	50-99	100-199	200 or More	All Ops.
Hand-written records (e.g., ledger, notebook, pocket diary)	76.2	80.8	89.1	88.5	78.6
Computer on operation	13.3	24.5	21.8	37.4	17.0
Computer off operation	2.0	4.2	3.7	10.8	2.9
Any of above	80.5	87.0	93.6	95.0	83.3

Hand-written records (such as ledgers, notebooks, or pocket diaries) were used on a higher percentage of operations in the Central region (86.2 percent) compared with operations in the South Central and East regions (77.1 and 73.3 percent, respectively) [table 2]. On-site computer records were used on a higher percentage of operations in the West region (28.7 percent) than operations in the South Central or East regions (14.7 and 13.5 percent, respectively).

*** Regions/States:**

West: California, Colorado, Idaho, Montana, New Mexico, Oregon, Wyoming

Central: Iowa, Kansas, Missouri, Nebraska, North Dakota, South Dakota

South Central: Oklahoma, Texas

East: Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, Tennessee, Virginia

** If no cows were present on Oct. 1, 2007, then July 1, 2007, inventory was used.

Table 2. Percentage of Operations by Record-keeping System Used, by Region:

Record-keeping System	Percent Operations			
	Region			
	West	Central	South Central	East
Hand-written records	82.3	86.2	77.1	73.3
Computer on operation	28.7	20.3	14.7	13.5
Computer off operation	5.2	2.7	4.0	1.6
Any of above	88.2	90.6	82.2	77.6

In three NAHMS beef studies conducted from 1992 to 2007, the percentage of operations that kept hand-written records increased from 1992 to 1997 but was similar for the 1997 and 2007 studies (table 3). The percentage of operations that used an on-site computer for record keeping increased from 1992 to 2007 (4.7 to 17.0 percent). Despite this increase, less than one of five operations used an on-site computer for record keeping in 2007. The use of any record-keeping system was similar for the 1997 and 2007 studies.

Table 3. Percentage of Operations by Record-keeping System Used, 1993–2007:

Record-keeping System	Percent Operations			
	1992/93 CHAPA ^{1,2}	Beef '97 Comparable ^{2,5}	Beef '97 ³	Beef 2007-08 ⁴
Hand-written records	65.2	80.0	79.1	78.6
Computer on operation	4.7	9.5	10.2	17.0
Computer off operation	3.8	3.3	3.5	2.9
Computer on or off operation	7.7	12.3	13.0	18.9
Any of above	66.8	82.3	81.3	83.3

¹Cow/calf Health and Productivity Audit.

²Population: spring calving operations with 5 or more cows in 18 States.

³Population: all cow-calf operations in 23 States.

⁴Population: all cow-calf operations in 24 States.

⁵For its first trends report (published May 1998) NAHMS reanalyzed the Beef '97 data to provide estimates for the same subset of operations covered by the 1992/93 CHAPA study (i.e., spring calving operations with five or more cows).

Animal identification records

To accurately assess the effects of changes in breeding and other management practices, producers

should be able to identify individual animals to monitor resulting changes over time. For example, to compare the weight gain in calves from different sires, producers need to be able to identify the calves from those sires. Nearly two-thirds of operations (66.1 percent) used some form of individual animal identification (ID) on at least some cows, and 79.1 percent of cows had some form of individual ID (table 4). Plastic ear tags were the most common type of individual cow ID for operations and individual cows (50.4 and 57.5 percent, respectively).

Table 4. Percentage of Operations and Percentage of Cows, by Type of Individual Animal ID Used on at Least Some Cows:

Individual ID Type	Percent Operations	Percent Cows*
Hot-iron brand	12.2	20.5
Freeze brand	2.4	3.9
Ear notch	4.8	9.8
Electronic ID or microchip responder	0.8	1.2
Brucellosis vaccination ear tag (Bang's tag)	24.2	38.1
Other metal ear tag	1.6	2.1
Plastic ear tag	50.4	57.5
Ear tattoo (other than for brucellosis vaccination)	8.1	7.7
Other method	0.7	0.9
Any identification	66.1	79.1

*Percentage of all beef cows in the 24 States studied.

The percentage of operations that used any form of individual animal ID on at least some cows ranged from 59.3 percent of operations with 1 to 49 cows to 89.1 percent of operations with 200 or more beef cows. Plastic ear tags were the most common type of individual animal ID across all herd sizes.

Nearly half of operations (46.7 percent) used some form of individual animal ID on at least some calves, and 64.8 percent of calves had some form of individual ID. The most common type of individual ID for calves was a plastic ear tag; 37.7 percent of operations used this form of ID and 50.2 percent of calves had plastic ear tags. For more information from the NAHMS Beef 2007-08 study about animal identification practices, see "Cattle Identification Practices on U.S. Beef Cow-calf Operations."¹

Natural resources records

An important part of maximizing a cow-calf operation's efficiency is tracking the role of natural resources in production outcomes. A producer who has records that document the operation's natural resource conditions will be positioned to evaluate the effects of

changing conditions on herd productivity and assess the needs for alternative strategies in managing natural resources. Failure to track and recognize the potential for declining pasture quality could have long-term negative effects on production.

A higher percentage of operations with 200 or more cows kept records of natural resource conditions compared with smaller operations (table 5).

Table 5. Percentage of Operations that Kept Written, Computer, or Pictorial Records of Natural Resource Conditions, and by Herd Size:

Percent Operations				
Herd Size (Number of Beef Cows)				
1-49	50-99	100-199	200 or More	All Ops.
4.4	9.4	4.4	17.9	5.9

A higher percentage of operations in the West region (17.7 percent) kept records of natural resource conditions compared with operations in all other regions (table 6).

Table 6. Percentage of Operations that Kept Written, Computer, or Pictorial Records of Natural Resource Conditions, by Region:

Percent Operations			
Region			
West	Central	South Central	East
17.7	7.1	4.5	3.1

Use of standardized performance analysis

One potential use of detailed production and financial records is Standardized Performance Analysis (SPA), a management approach sponsored by the National Cattlemen's Beef Association (NCBA) and the USDA Extension Service to help cow-calf producers calculate financial and productivity parameters.² SPA enables producers to compare operation performance across years and with other operations to help identify management changes that could increase operation profitability. For example, through use of production and financial records, SPA can help producers establish benchmarks related to reproduction, grazing and raised feed, and financial performance, such as rate of return on assets, net income per cow, pounds weaned per exposed cow, and grazing and feed costs per cow.

Less than 1 of 25 operations (3.5 percent) used SPA to determine the profitability of producing beef calves (table 7). The percentages of operations that used SPA were similar for all herd sizes.

Table 7. Percentage of Operations that Used Standardized Performance Analysis to Determine the Profitability of Producing Beef Calves, and by Herd Size:

Percent Operations				
Herd Size (Number of Beef Cows)				
1-49	50-99	100-199	200 or More	All Ops.
3.0	3.9	5.8	6.0	3.5

Across all regions, a similar percentage of operations used SPA to determine the profitability of producing beef calves; percentages ranged from 2.0 in the Central region to 5.2 in the East region.

Summary

A record-keeping system provides producers with many important capabilities, such as furnishing buyers with records for individual animals, tracking and maximizing use of natural resources, and calculating vaccination and feed costs per cow. The data must be gathered in a consistent manner and on a regular basis, however, so that meaningful comparisons can be made. Producers should determine which management practices they would like to improve and then collect the data necessary to provide appropriate benchmarks. They must then evaluate the data and incorporate the findings into their management plans. By basing management decisions on carefully collected and evaluated data, producers can measure the differences associated with management changes and maximize the operation's profitability.

References

1. National Animal Health Monitoring System, "Cattle Identification Practices on U.S. Beef Cow-calf Operations," #537.0209, February 2009; <http://www.aphis.usda.gov/nahms>
2. National Cattlemen's Beef Association website, <http://www.beefusa.org>

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