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Production Records for Cow/Calf Producers

Few people really enjoy keeping records, but they can be a great help when you need them. Cow/calf operations require considerable capital investment. Good records enable producers to make sound management decisions and to maximize returns in the face of rising prices, regulatory uncertainty, and price volatility. Records are required for participation in disaster-assistance and value-added marketing programs, and increasingly, to show compliance with regulations. Effective January 2017, legislation that aims to reduce the development of antibiotic resistance, will require producers to retain copies of veterinary feed directives for two years.

Records for cow/calf producers fall into two main categories — those that characterize the herd and those that pertain to individual animals. Herd-level measurements such as pregnancy rate and weaning weight per cow exposed are critical in management decisions affecting the entire herd. In most cases, cows are fed and managed as groups and not as individuals. Group performance is measured to assess the feeding and management program. Ultimately, group performance determines profitability. Measurements that capture successes and failures in the production system enable producers to maximize efficiency.

The amount of information a producer collects on individual animals depends on the goals of the operation. In some cases, animals may be identified before marketing or culling based solely on physical location. If sorting is not possible, tagging outliers may be less expensive than tagging every animal in the herd.

Group Management

Herd records can either show how certain groups of animals are managed or summarize group performance. Group management records include animal inventories and movements, vaccination and parasite treatment records, purchases and births, death losses, sales, antibiotic use, pasture use, supplementation history, and body condition scores. Such records can be invaluble in the case of an illness or death of the herd manager.

Inventory-Tracking Systems

Managers need a system for tracking inventory changes such as deaths, sales, purchases and births. A good system enables a producer to record changes immediately without having to enter the same information in multiple places. An accurate inventory is beneficial in evaluating the results of a grazing plan or monitoring mineral consumption.

Health Records

Vaccination records provide details about the administration of specific products, including serial number, lot number, expiration date, withdrawal date, administration site, and the animal(s) treated. They are a reminder of the product used the previous year and can be used to help trace problems with a vaccine. Vaccination records may be required for value-added calf or preconditioning programs.

Treatment records show that an appropriate withdrawal period has passed before an animal is sold. This ensures a high-quality, safe food supply and builds consumer confidence in the final product. A process verification program (PVP) for a calf or fed-cattle marketing program may require the producer to provide treatment records for third-party audit.

Pasture use records, noting the number and class of animals and body weights, together with *precipitation records,* guide decisions on optimal stocking rates and assist in development and implementation of drought-management plans.

Group Performance

Overall herd nutrition and management is reflected in several key measures. Producers can compare records from year-to-year and evaluate herd performance in relation to others in the industry using standard performance analysis (SPA). SPA allows for such comparisons by defining terms that have varied widely in the past — for example, "percent calf crop." To some producers this meant the percentage of cows at weaning that had a calf. Others defined it as the percentage of cows in the herd at calving that actually calved. Losses captured by those values are much narrower than those captured by today's industry standard — the number of weaned calves as a proportion of cows exposed to bulls the season weaned calves were conceived.

Although a full SPA analysis includes both financial and production performance measures, this publication focuses solely on production records. Learn more about SPA at www.beefusa.org/spacalculationsworksheet.aspx.

Information and calculations for key SPA production measures are summarized in Table 1. This is a simplified example. In many herds, the cows exposed count would need to be adjusted based on females that move in or out of the herd — for example, cows that died after turnout, planned culls still exposed to bulls, or cows purchased pregnant or exposed but sold pregnant. Visit KSUBeef.org for a simple spreadsheet to guide you through the inventory changes and calculations. Look for the reproduction link and cow-calf records.

Table 1. 2016 production summary for example herd.

1. Breeding – 2015		
Cows exposed	246	hd
2. Preg Check – 2015		
Diagnosed pregnant	215	hd
3. Calving – 2016		
Total calves born live	204	hd
4. Calves weaned – 2016	190	hd
5. Average weaning weight	490	lbs
Calculations		
6. Pregnancy percentage		
(line 2/line 1) x 100	87.4	%
7. Calving percentage		
(line 3 / line 1) x 100	82.9	%
8. Percent calf crop		
(line 4/line 1) x 100	77.2	%
9. Pounds weaned/cow exposed		
(line 5 x line 8)/100	378	lb

Percent calf crop, also known as weaning percentage, is the number of calves weaned divided by the number of cows exposed for breeding, multiplied by 100. For a spring-born 2016 calf crop, for example, percent calf crop would be the number of calves weaned in 2016 divided by the number of cows exposed in 2015. Weaning weight per cow exposed adjusts weaning weight for all the reproductive and management losses that occur from breeding one season to weaning the next.

You can use this information to compare the previous year's data for the same herd or to a benchmark data set. The 2010-2014 CHAPS database average (Table 2) shows a percent calf crop of 90, whereas the Southwest database (2006–2010 summary; New Mexico, Oklahoma, Texas) shows a value of 82 percent. Weaning weight per cow exposed for the example herd is 378 pounds, compared to benchmark values of 495 and 434 pounds for CHAPS and Southwest, respectively. Calf death loss for the example herd is greater than either database, and pregnancy loss is greater than the CHAPS average. Calving distribution information indicates how quickly cows are able to conceive in the breeding season. Calving distribution is directly linked to weaning weight. Early born calves weigh more than later-born calves at weaning.

Table 2. SPA performance measures from 2010-2014 CHAPS (88,000 cows) and SW Cow-Calf SPA 2006-2010 (36,377 cows) databases and example herd.

Item	CHAPS	SW	2014
Pregnancy percentage	93.1	89.4	87.4
Pregnancy loss	0.7	4.0	4.5
Calving percentage	92.5	85.4	82.9
Calf death loss, %	3.4	3.3	5.7
Calf crop percentage	89.8	82.1	77.2
Calving Distribution			
% calves born d 1–21	61.1		62.4
% calves born d 1–42	86.4		92.6
% calves born d 1–63	96.0		100
% calves born d 63+	4.0		0
Weaning Data			
Average weaning weight	558	525	490
Pounds weaned/exposed female	495	434	378

CHAPS: www.chaps2000.com/benchmarks.htm

SW Cow-Calf SPA summary: agrisk.tamu.edu/files/2012/07/SW-Key-Measures-Summary-_Last-5-Years_.pdf

How to Use the Data

You can use the performance data in Table 2 to identify problems. For instance, if the goal is to improve the calf crop percentage for the herd, it is critical to understand why cows failed to conceive or causes of calf death loss. Information on pregnancy rate, pregnancy loss, and calf deaths that pinpoint timing of losses can help you determine what changes to consider. It may be worthwhile to analyze this data by age group — 2-year-olds, 3-year-olds, and mature cows. The data enables you to

estimate whether a management change to improve pregnancy rate would increase pounds weaned per cow exposed sufficiently to cover the cost of the change.

Measuring and monitoring reproductive loses over time is the key to finding and correcting problems early. The goal is not to maximize reproductive response, but to find the optimal level of reproduction associated with cost effective use of feed resources.

Individual Performance Records

Seedstock producers rely heavily on individual performance records to make decisions about genetic selection. Commercial cow-calf producers may look at key performance measures for management decisions such as bull evaluation. To someone with a busy schedule, collecting performance records may seem like a chore that is not critical to achieving business objectives, when, in fact, it can pay great dividends. How much time you invest and the amount of performance information you collect depends on your business objectives. If you are a seedstock producer aiming to fully document cattle performance, make performance testing a priority and track of all of the traits in Table 3.

Once information has been recorded, transfer it to appropriate forms or software and report it to the proper breed association(s). Invest in the tools and make time to distill performance measures into useful information. For example, body condition scores can be factored into day-to-day management decisions and in the computation of genetic predictors.

Commercial cow/calf producers should gather data that aligns with marketing goals. If you sell calves at weaning, use weaning weights to evaluate previous decisions on sire selection. If you retain ownership of calves through harvest, collect carcass data for insight into effectiveness of sire selection. Focus on high-impact, low-cost data. For example, traits such as mature weight and body condition that not only provide information about cow genetics but are useful for monitoring feed allocation.

Look for opportunities when collecting data. For instance, if you need to compute total calf production for herd level data analysis, you could replace individual calf weaning weights with draft weights, which is easier and less costly with a large number of cattle. A scoring system is handy for recording traits such as calving ease and udder conformation. Consider Beef Improvement Federation guidelines (beefimprovement.org/content/uploads/2015/08/REVISED-MasterEd-BIF-GuidelinesFinal-08-2015.pdf) before developing your own.

Table 3. Evaluation criteria and data collection times for seedstock and commercial* cow-calf producers

Trait	Class	Timing
Calving ease *	Calves	at birth
Birth weight	Calves	at birth
Vigor	Calves	at birth
Weaning weight*	Calves	160–250 days of age**
Yearling weight***	Calves	320–410 days of age**
Yearling hip height	Calves	320–410 days of age**
Ultrasound composition data	Calves	320–410 days of age**
Yearling scrotal circumference	Calves	bulls 320-410 days of age**
Reproductive tract score*	Calves	heifers approximately 12 months of age
Heifer pregnancy*	Calves	heifer pregnancy diagnosis 16–20 months
Chute score (disposition)	Calves	with weaning and yearling processing
Carcass data	Calves	harvest (commercial if retained ownership)
Mature weight*	Cows	semiannually, pre-calving and post weaning with a corresponding body condition score
Body condition score *	Cows	semiannually, pre-calving and post weaning
Mature height	Cows	semiannually, pre-calving and post weaning
Udder/teat score	Cows	annually at calving
Pregnancy status*	Cows	annually at pregnancy check
Dentition	Cows	annually at pregnancy check
Feet and leg scores	Cows/ Bulls	annually at pregnancy check/weaning

* Recommended for commercial herds.
**Age ranges for reporting vary by breed. Contact your breed association for specific requirements.

***Yearling or pre-breeding weight of replacement heifers can be useful for tracking heifer development in relation to performance goals.

Record-Keeping Systems

There is no one *right* way to keep records. Records can be handwritten, but there are more options for data management and automated reports with electronic records. The best method of collecting and storing records depends on the number of people involved, your comfort with technology, access to electricity or internet service, and record-keeping requirements. Perhaps the most widely used tool is the *Red Book,* developed by beef specialists at the University of Idaho and now produced by the National Cattlemen's Beef Association. The print version of this classic provides space to collect all of the key herd management and production records mentioned in this publication. Pocket-sized versions of the book have been known to meet tragic fates in washing machines, mud puddles, or worse, so an Excel version (www.beefusa.org/redbookworksheet.aspx) is recommended as a backup to the paper copy.

Choosing a Software Program

When choosing a record-keeping system, think about herd goals and the records you will need to achieve them. Software programs are designed to suit a wide range of clients, so pick one that can be customized to your operation. If your needs are relatively simple, reports and features can seem overwhelming. Identify data you may want to collect and analyze in the future, realizing your needs may change over time.

Features of various cow/calf management software programs are outlined in a publication available online from Oklahoma State (pods.dasnr.okstate.edu/docushare/dsweb/Get/Document-1926/CR-3279web15.pdf). Once you have an idea of the records you need, review this list to identify measures you may not have considered. If you are a beginner, resist the urge to collect more data than you can use. The report, last updated in August 2015, includes computer requirements and technical specifications provided by each software company. Most of the programs listed offer trial versions, but training and support should be part of your product evaluation. There is value in working with an established company with a reputation for keeping up with the technological advancements and data systems. Look for software that can be integrated with smartphones, scales, and electronic ID readers. These capabilities are valuable and will become even more so as data-collection technologies advance. The ability to import and export data as Excel spreadsheets, add or update records, and share information with industry partners are other key features.

Training and Implementation

Allow yourself time to set up and learn a new electronic cow/calf record-keeping system. The more you use the tool, the easier it will become. Rely on team members who are comfortable with technology. Though your knowledge of records is the key, a local 4-H or FFA member would make a good partner if you need a little extra help with computing.

If you have good computer skills and fairly simple requirements, Excel spreadsheets or a database program such as Access may work as well as a commercial program. Start by downloading a spreadsheet template to calculate adjusted 205-day and yearling weights from www.asi.k-state.edu/species/beef/research-and-extension/breeding-and-genetics.html. Incorporate scores for calving difficulty, udder scores, death loss, or reasons for disposal based on the Beef Improvement Federation guidelines mentioned earlier. While scores can be useful for summarizing the data, you may still want to record details about an event.

Some producers use Google Forms to customize data collection. This is a free tool that enables you to gather production and operation data in the field using a smartphone or tablet, and then download it to your computer as a spreadsheet. An internet connection is required to complete the online forms.

Technology is not the answer to every problem, but it is handy for storing and reporting data. The more you know about key characteristics of your cows and herd, the better your management decisions and the better your chances of achieving production goals.

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