

Please contact us at [support@cowsense.com](mailto:support@cowsense.com) or 800-584-0040 for any questions or assistance.

## Discussion

Cow Sense® herd management software is certified by the National Cattlemen's Beef Association, Integrated Resource Management (NCBA/IRM) subcommittee. Certification is a status granted to those who successfully incorporate the Standardized Production Analysis (SPA) guidelines into management tools such as computer software.

Midwest MicroSystems has incorporated the standardized analysis terminology, and calculations for reproduction and performance measures into a user-friendly feature of Cow Sense NxGen. Beef producers that use Cow Sense herd management software for maintaining computerized reproduction and performance records in their cow-calf operations can generate a SPA-P (performance) report with a simple selection from the Standard Reports menu. All the calculations are done automatically with validations to make sure the data is reflected accurately. The power of the SPA-P report can now be utilized in Cow Sense NxGen without the tedious job of recalling, assembling and calculating historical production information.

In 1991, the National Cattlemen's Association (the predecessor to today's National Cattlemen's Beef Association) adopted the Standardized Production Analysis (SPA) system developed through efforts of NCA producers, the National Integrated Resource Management Coordinating Committee and Extension Specialists. The first objective of SPA is to determine the production and financial performance of the producer's cow-calf enterprise. SPA helps the producer to measure progress in meeting business objectives. Please see the link below for more detail about SPA requirements: <https://agecoext.tamu.edu/wp-content/uploads/2016/12/N2.-User-Manual-for-SPA-Reproduction-Grazing-and-SPA-Calculations-3-8-2017.pdf>

SPA has become an important tool for today's beef producer. It (SPA) provides a method of comparing an operation's performance between production years, different producers, production regions, and production systems. Cow-Calf SPA presents standardized analysis terminology, calculation procedures, interpretations and limitations of the performance measures for the cow-calf enterprise. Certification provides cow-calf producers confidence that SPA Certified products such as Cow Sense have met the necessary criteria and in effect can carry the NCBA/IRM logo much like that of a Good Housekeeping Seal.

Cow Sense NxGen is designed so that the SPA computations can be carried out with minimal additional data entry. The following information explains some of the concepts involved with SPA and will assist you to enter data so that your reports accurately reflect SPA guidelines. **First and foremost** is to accurately generate the SPA-P report requires that you enter data through the Cow Sense NxGen Breeding and Calving Wizards. In addition, all dams of calves included in the Calving Season specified must have Birth Dates recorded on their record. Step-by-step instruction for generating the SPA-P report follows the explanation of how the data points are gathered.

Document  
Number:  
**NGG\_013**  
Issue Date:  
**07/10/2018**  
Product: Cow  
Sense® NxGen  
Version: **5 and  
later**  
Page: **1 of 4**

## Where Cow Sense Gets the Data

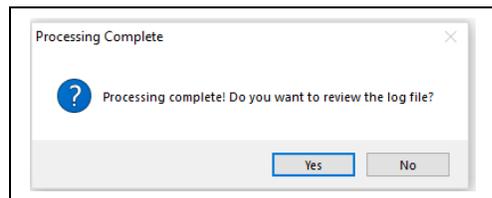
<p><i>Exposed Females</i></p>	<p>SPA is based on a production cycle that begins when females are exposed to breeding and ends with weaning. Reproductive performance measures are all relative to the number of females exposed. Cow Sense <i>NxGen</i> acquires this information from breeding records recorded in the Breeding Wizard, which defines the number of cows exposed. ET (Embryo Transfer) Breedings <b>ARE NOT</b> included in the reproductive analysis.</p>																																				
<p><i>Replacements</i></p>	<p>Cow Sense detects replacements automatically by looking for cows that did not calve in any of the previous Calving Seasons. If this is the first Calving Season data entered in Cow Sense then we are not going to consider replacements for that Calving Season.<sup>1</sup></p>																																				
<p><i>Breeding Outcomes</i></p>	<p>The Calving Wizard must be used to record <b>outcomes</b> of breedings and the calves produced because that is how the calf is linked to the breeding record. Calves that are entered other ways such as by import or through the Individual form are not linked to a breeding record and are considered to be outside sourced calves (e.g. purchased) and then <b>ARE NOT</b> included in the reproductive analysis. Outside sourced calves <b>ARE</b> included in the weaning output analysis.</p> <p>NOTE: If a twin is produced, it must be initialized through the Calving Wizard because that is how the twin is linked to the breeding record. When one of the twin codes is selected in the “Twin Code” field it will trigger the creation of a twin record for completion in the Individual Form. If both twins are dead at birth, record both losses so they are both included in the evaluation. See the “Calving Wizard Video Tutorial Script Notes” for additional direction <a href="http://midwestmicro.us/wp-content/uploads/2017/11/calving_wizard.pdf">http://midwestmicro.us/wp-content/uploads/2017/11/calving_wizard.pdf</a></p>																																				
<p><i>SPA Production Summary Analysis Log</i></p>	<p>Upon running a SPA-P Report in Cow Sense <i>NxGen</i>, all Breeding Outcomes recorded via the Calving Wizard are reviewed and logged in SPA Production Summary Analysis Log using the following codes:</p> <ul style="list-style-type: none"> <li>• "L" = Live Calf. This outcome will be included in the evaluation.</li> <li>• "D" = Dead at Birth. This outcome will be included in the evaluation.</li> <li>• "A" = Abortion. This is relevant data; the outcome should be recorded and will be included in the evaluation.</li> <li>• "B" = Bred. This record will be excluded as the outcome is indefinite.</li> <li>• "F" = Failed to Conceive. If a cow is disposed because of a reproductive failure (or other problem that prevents calving), this outcome should be recorded and will be included in the evaluation.</li> <li>• "P" = Prior Conception. Although exposed, the cow conceived to a prior mating and this record will not be included for evaluation.</li> <li>• "S" = Sold Bred. The cow was transferred out, so the record will not be included for evaluation.</li> <li>• "U" = Unknown. An outcome of “Unknown” will be excluded in evaluation.</li> <li>• "X" = Empty. Missing outcome data will exclude the record from evaluation.</li> </ul> <p>If multiple Breeding records are Recorded (ex. an AI and Natural Service breeding) each Breeding Outcome will be logged as reflected in this example. </p> <table border="1" data-bbox="836 1648 1274 1921"> <thead> <tr> <th>Cow Tag</th> <th>Codes</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>RN34</td> <td>LX</td> <td>Live calf</td> </tr> <tr> <td>RR52</td> <td>LX</td> <td>Live calf</td> </tr> <tr> <td>RR55</td> <td>LX</td> <td>Live calf</td> </tr> <tr> <td>RR56</td> <td>L</td> <td>Live calf</td> </tr> <tr> <td>RS65</td> <td>LX</td> <td>Live calf</td> </tr> <tr> <td>RS62</td> <td>XL</td> <td>Live calf</td> </tr> <tr> <td>RS66</td> <td>LX</td> <td>Live calf</td> </tr> <tr> <td>RT71</td> <td>XL</td> <td>Live calf</td> </tr> <tr> <td>RT72</td> <td>LX</td> <td>Live calf</td> </tr> <tr> <td>RU86</td> <td>LX</td> <td>Live calf</td> </tr> <tr> <td>RU89</td> <td>XXL</td> <td>Live calf</td> </tr> </tbody> </table>	Cow Tag	Codes	Result	RN34	LX	Live calf	RR52	LX	Live calf	RR55	LX	Live calf	RR56	L	Live calf	RS65	LX	Live calf	RS62	XL	Live calf	RS66	LX	Live calf	RT71	XL	Live calf	RT72	LX	Live calf	RU86	LX	Live calf	RU89	XXL	Live calf
Cow Tag	Codes	Result																																			
RN34	LX	Live calf																																			
RR52	LX	Live calf																																			
RR55	LX	Live calf																																			
RR56	L	Live calf																																			
RS65	LX	Live calf																																			
RS62	XL	Live calf																																			
RS66	LX	Live calf																																			
RT71	XL	Live calf																																			
RT72	LX	Live calf																																			
RU86	LX	Live calf																																			
RU89	XXL	Live calf																																			

<i>Beginning Calving Date</i>	SPA Guidelines offer two methods of identifying the start date for calving distribution. One is based on the date the bull was turned in with mature cows (285 days after), the other is based on the third calf born from mature cows (3 or older). Cow Sense uses the latter method. Accordingly, Birth Dates MUST be present on all Cow records (dams of calves for the specified Calving Season) for the report to be generated accurately.
<i>Calving Distribution</i>	This shows the length of the calving season and the distribution of births recorded for the total number of calves born. The distribution is displayed by 21-day intervals to reflect pregnancies by heat cycle. Accumulative total is displayed for the first 63 days and remaining percentage for the balance of the calving period.
<i>Pregnancy Loss Percentage</i>	SPA Guidelines offer two methods of computing pregnancy loss percentage. Cow Sense adopts the first method (Pregnant Females that Fail to Calve/Females Diagnosed Pregnant)

## Steps to Create a Cow Sense *NxGen* SPA-P Report

1. Choose Calving Season. From the Task Pane on the left select the Standard Reports Menu > Options. Locate the “Select By Calving Season” Tab. Choose the Calving Season for which you wish to generate the SPA-P Report and click the ‘Apply button. A SPA-P report can only be generated on a single Calving Season at a time.

2. Initiate Report. From the Task Pane on the left select the Standard Reports Menu > Summary > SPA Production Summary. Cow Sense will review and assemble the required data. When Processing is complete you will be presented with the following window...



3. Review Log File. Choose “Yes” to review the log file created. This information describes the processes Cow Sense completed to generate the report. You may find it useful to print this document as a reference as you review the report. After you have completed your review, close the Log File. By default, it will be saved in your Documents Directory > Cow Sense > Logs folder. You may wish to rename and save it to a different location as this file (stored in the default location) will be overwritten by generating subsequent SPA-P Reports..

4. Review SPA-P Report. Following is an explanation of the calculations

### Reproduction Performance Measures

- *Pregnancy Percentage* = (Number of Exposed Females Diagnosed as Pregnant) / (Number of Exposed Females)
- *Pregnancy Loss Percentage* = (Abortions + No Calf) / Pregnant Cows
- *Calving Percentage* = (Number of Calves Born) / (Number of Exposed Females)

- *Calf Death Loss* = (Number of Calves that Died Prior to Weaning) / (Number of Exposed Females). This is expressed as a percentage based on exposed females
- *Weaning Percentage* = (Number of Calves Weaned) / (Number of Exposed Females)
- *Female Replacement Percentage* = Replacements / Mature Cows Exposed
- *Calf Death Loss Based on Number of Calves Born* = (Number of Calves that Died Prior to Weaning) / (Number of Calves Born). This is expressed as a percentage based on calves born.

#### Calving Distribution

Accumulative percentage of total births is displayed for the first 63 days and remaining percentage for the balance as follows:

- births within the first 21-days of the calving season;
- births between 22 and 42 days;
- births between 43 to 63 days;
- and births after 63 days.

#### Production Performance Measures

These measures are summarized from weaning weight data stored on the individual calf records that are a part of the Calving Season selected.

- *Average Age at Weaning (Months)* = (Total Age of all Weaned Calves / Total Number of Calves Weaned)
- *Steer/Bull Calf Weaning Weight* = (Total Weight of Weaned Steer and Bull Calves / Total Number of Weaned Steer and Bull Calves)
- *Heifer Calf Weaning Weight* = (Total Weight of Heifer Calves Weaned / Total Number of Heifer Calves Weaned)
- *Average Weaning Weight* = (Total Weight of Weaned Calves / Total Number of Calves Weaned)
- *Pounds Weaned Per Exposed Female* = (Total Pounds Weaned / Number of Females Exposed)

5. If you wish to run several reports by Calving Season, after you have run a report for the first season, return to the Standard Reports Options menu and choose the next season. Repeat this process on all seasons for which you wish to run a SPA-P Report.

<sup>1</sup> For the purposes of SPA, you may create a simulated Breeding Season for all mature cows to initialize a Calving Season in Cow Sense so that replacements to the first true Calving Season can be properly identified. To avoid having to enter false calf data, assign each of the records in the artificial Calving Season a Breeding Outcome of "U" for Unknown.