

Understanding Days to Calving EBVs

Reproductive performance is a key determinant of profitability in a beef cattle enterprise. Consequently, selection for improved reproductive performance should be an important consideration for all beef cattle producers.

One major component influencing a beef enterprise's reproductive performance is the fertility of the female herd. The job of a female in a beef producing herd is to conceive, preferably as early in the joining period as possible, carry a foetus during gestation, deliver a live calf and raise it until weaning, within every 12 month period of her breeding life. A female that does not do this is failing to do her job and eroding herd profitability.

While many producers manage the reproductive performance of their female herd using different management strategies, in particular the culling of females that fail to get in calf, research has shown that female fertility is influenced by the genetics of the breeding herd. Consequently, Days to Calving EBVs provide a useful tool that breeders can use to improve the genetics of their females for fertility, in association with their routine management and culling strategies.

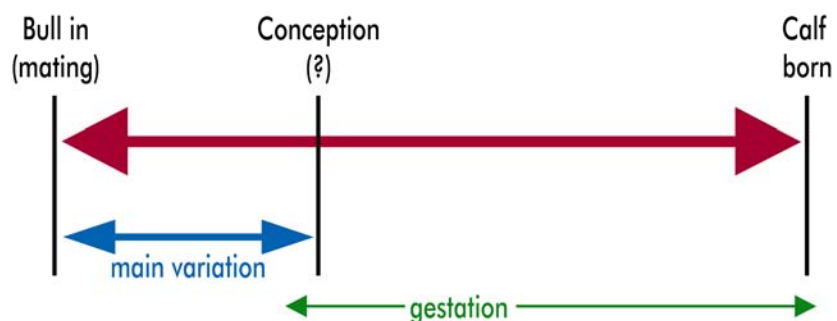
Interpreting Days to Calving EBVs

Days to Calving EBVs are estimates of genetic differences between animals in the time from the start of the joining period (ie. when the female is introduced to a bull) until subsequent calving. Days to Calving EBVs are expressed in days and are calculated from the joining records submitted for both heifers and mature cows.

The Days to Calving EBV promotes cows that calve earlier in the season compared to those that calve later, while penalising cows that do not calve. Variation in days to calving is mainly due to differences in the time taken for females to conceive after the commencement of the joining period.

Lower, or more negative, Days to Calving EBVs are generally more favourable. For example, a bull with a Days to Calving EBV of -5 days would be expected to produce daughters that conceive earlier in the joining period than the daughters of a bull with a Days to Calving EBV of +5 days. Females with shorter Days to Calving EBVs also tend to be those that show early puberty as heifers and return to oestrous earlier after calving.

Time between first mating and calf being born



Recording Information for Days to Calving

Breeders interested in the Days to Calving EBV need to record all ‘events’ associated with the natural joining of their females from the start of the mating period in each breeding season through to when the subsequent calves are born. This includes those females that have only been joined naturally within a breeding season - not those that have been included in artificial insemination/embryo transfer programs or artificially induced to cycle prior to joining with the bull outside of such programs.

Broadly, the information to be collected should include:

1. Joining details of **all** females naturally mated within the herd.
2. Details of **all** females removed from the herd, particularly those present at joining that were no longer within the herd by the time of the subsequent calving.
3. Details of **all** calves (dead or alive) that are born as a result of these joinings.

While not currently included in the Days to Calving analysis, research is now underway to determine whether details from artificial insemination (AI) and embryo transfer (ET) programs could be utilised by BREEDPLAN. Breeders interested in submitting details of their AI & ET programs to assist this research should refer to the “Collecting Better Female Fertility Data” tip sheet.

Recording Joining Details for Days to Calving EBVs

- ❑ Record each natural joining event to which a female (cow or heifer) is exposed within the breeding season whether this was the successful joining or not. For situations where females are joined to several bulls in a mating season, record all joinings for the female, not just the first or successful joining.
 - For each natural joining event within the breeding season, record the bull the female was joined to, the date she was joined (‘bull in’ date) and the date the bull was removed (‘bull out’ date). Knowing the end of the joining period is important in analysing the Days to Calving trait.
 - The joining event code to be used when recording natural joining events is ‘N’ (Natural/Paddock mating).
- ❑ Record management group information to identify any cow/s within a joining group whose fertility may have been affected either prior to or during the joining program due to non-genetic factors. e.g. significantly different nutrition, sickness, injury. A maximum of three characters (letters and/or numbers) can be used to describe each management group.

Recording Female Disposal Information

- ❑ Record the date and reason for any female removed from the herd, particularly those present at the start of joining that are no longer within the herd by the time of the subsequent calving. The fate/disposal code information is critical to the Days to Calving analysis and is used to determine whether females that have a joining record but no subsequent calf should be penalised for being “culled for infertility” or not penalised because they were culled for other reasons e.g. structure, performance etc. In the future, this information may also be used as part of the calculation of a Female Longevity EBV.

The codes to be used to record a female fate/disposal event are as follows:

Culled or sold

A	Cast for age
B	Sold surplus breeding female - but not code J or F
C	Calving incident
D	Disease (e.g. pesti, eye cancer, etc)
E	Eyes (pigment, hooding, etc)
F	Not in calf (i.e. failed preg test or did not calve)
G	Genetic condition (e.g. genetic carrier)
H	Horns
J	Cull unjoined heifer surplus to requirements
K	Coat Type
P	Poor performance (e.g. poor milking, low body condition, etc)
Q	Appearance (type, colour, markings, Society standards, etc)
R	Reproduction abnormality (eg freemartin, mal-formed uterus, pelvic area)
S	Structural problem (e.g. feet, legs, navel, etc)
T	Poor temperament
U	Udder or teat problems
V	Poor EBVs
W	Calved but failed to rear calf to weaning
X	Susceptible to parasites (ticks, buffalo fly, worms, etc)

Died or missing

C	Calving incident (e.g. dystocia, prolapsed)
D	Disease (e.g. pesti, bloat, 3 day, etc)
M	Missing assumed dead
X	Parasites (ticks, buffalo fly, worms, etc)
Y	Unknown cause
Z	Accident (e.g. injury, drowned, poisoned, etc)

Note: These codes are specific to BREEDPLAN for the purpose of Days to Calving and are separate to the disposal information submitted routinely to your Breed Society. Disposal information submitted to your Breed Society will not be used in the calculation of the Days to Calving EBV, and likewise the disposal codes submitted to BREEDPLAN will not be utilised by your Breed Society.

Recording Calf Details

- ❑ All calves that are born as a result of these joinings need to be recorded with the Breed Society. Not recording all calves (including dead calves) with your Breed Society will reduce the accuracy of Days to Calving EBVs.

Recording Pregnancy Test Results

- ❑ Optionally, where pregnancy test results are available, record the date and result of the test for each female joined. This information is not currently included in the Days to Calving analysis, however it may be utilised in the future to either enhance the calculation of Days to Calving EBVs, or for the calculation of other female fertility EBVs.

- Pregnancy test results should be reported as: N = Not pregnant, P = Pregnant, or between 3-20 = Number of weeks pregnant as advised by a qualified technician. Where the foetus is over 20 weeks old, a 'P' should be used.

Important Considerations when Recording Information for Days to Calving

- ❑ Joining details for all cows in the recorded herd need to be collected in order to accurately reflect the cow fertility in the herd. Simply recording those cows that have a calf or those cows that remain on inventory in the next year is not adequate.
- ❑ Ensure that you record details for all heifers joined – not just the ones that calve or are added to inventory. Information on heifers is very important as many herds cull heifers that do not conceive in the first year of joining. The heifers that do not calve supply as much information to the analysis as those that do calve.
- ❑ Record the details of all joining events in which the female was involved even if you know the joining was unsuccessful. For situations where females are joined to several bulls in a mating season, record all joinings for each cow and heifer within the joining period, not just the first or successful joining.
- ❑ Accurately recording the fate/disposal codes of all females that leave the herd is extremely important. In the Days to Calving analysis, this fate/disposal code information is used to determine whether a female should be penalised for being “culled for infertility” or not penalised because she was culled for other reasons (eg. structure, performance etc.)
- ❑ Joining details for females that have been joined to multiple sire groups (rather than a single sire) should also be recorded. In this scenario, the sire ident that is specified should be the multiple sire ident, rather than the ident of the individual sire that resulted in the calf. Similarly, joining details for females mated to sires not recorded with the Breed Society (e.g. sires of another breed) should also be submitted.
- ❑ Herds with either a very wide calving spread (eg. cows joined all year around) or several calvings each year (eg. an autumn, winter and spring calving) may have difficulty collecting joining information that is useful for the calculation of Days to Calving EBVs. Herds in such situations should contact staff at BREEDPLAN for further advice.

Submitting Days to Calving Information

Similarly to other performance information, the joining details and fate/disposal information for your females should be submitted directly to BREEDPLAN. Note that the joinings or fate/disposal information that is submitted to your Breed Society as part of your calf registrations or cow inventory is **not** included in the Days to Calving analysis.

There are two different methods available to submit the joining details and fate/disposal information to BREEDPLAN:

- ❑ Herds that use BREEDPLAN compatible herd recording software packages (eg. HerdMASTER, Stockbook, CattleLink) should be able to extract the joining details from their computer program and submit the details to BREEDPLAN electronically.



BREEDPLAN Tips

Herds that require assistance either entering the joining details of their herd into their software program or extracting the joinings and fate/disposal information for BREEDPLAN, should contact their software supplier.

- ❑ A Microsoft Excel template is available for herds not using a BREEDPLAN compatible herd recording software package. The template can be accessed from the Technical area on the BREEDPLAN website or by contacting staff at BREEDPLAN.

Note: there is no longer a paper form available for the submission of joinings information to BREEDPLAN. Herds that are unable to submit information electronically are advised to contact staff at BREEDPLAN to discuss alternative methods of submission.

For more information regarding Days to Calving EBVs or the submission of joinings information, please contact staff at BREEDPLAN.

