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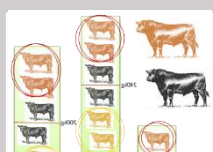


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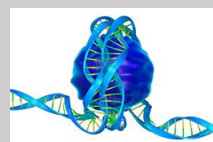
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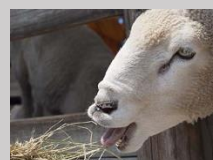
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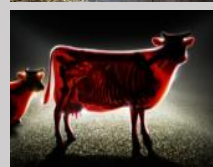
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Feed efficiency of the Cow Herd

Helena Theron

It makes sense to measure and improve feed efficiency in the cow herd, as it has been estimated that the cow herd utilizes approximately 70% of the available feed on the farm. In beef cattle, Feed Efficiency is measured with Feed Conversion Ratio (FCR), which is the ratio of feed intake to weight gain. It has traditionally been measured on young growing bulls in feed intake growth tests. However, some breeders would like to measure feed efficiency on their entire herd, the bulls as well as the heifers, because it will speed up genetic progress and increase efficiency in the cowherd as well.

Heifers are tested separately from bull calves and can therefore be tested following the testing of the bull calves for better utilization of the test centre. Heifers should be 151 to 300 days old at the beginning of the adaptation period of the test. As heifers tend to become fat at an earlier age than bull calves, the test is only 56 days long, compared to 84 days for bull calves. The roughage in the ration for heifers is also increased to prevent excessive fat deposition. At least 10 heifers are tested together, but preferably the whole weaning group should be tested. Heifers may

also be tested in a farm growth test.

Creole Breeds

The Creole breeds were formed when Spanish occupiers took their cattle from Spain to the North, South-, and Central Americas in the late 1400s. These breeds originated from the Iberian (Spanish) *Bos taurus*, and over time have formed several breeds and lines that are well adapted to harsh tropical environments. After the 1600s, Northern European breeds were re-introduced to the Americas, mainly because of their higher production. The Zebu breeds (Brahman, Gir and Nelore) were also introduced. There was thus a mixing of breeds to combine the adaptability of the Creole and Zebu breeds with the higher production of the European breeds. Creole breeds show the slick phenotype, which is characterized as a fine, sleek hair coat with fewer hair follicles, shorter hair length and larger sweat glands.



One of the Creole composite breeds, the Romosinuano, exhibit the slick hair coat which has been associated with thermo-tolerance in tropical and sub-tropical climates.

Deterrent for lions and leopards?



The predation of livestock by carnivores, and the retaliatory killing of carnivores, as a result, is a major global conservation challenge. Lions and leopards rely on stalking their prey, and sometimes being seen by their prey can lead them to abandon the hunt. This caused researchers to test whether this response could reduce livestock losses in Botswana's Okavango Delta region.

Working with Botswana Predator Conservation and local herders, the researchers painted eyes on the backsides of 2,061 cattle from 14 herds over a period of four years. Before release from their overnight enclosure, one-third of each herd were painted with an artificial eye-spot design on the rump, one-third with simple cross-marks, and left the remaining third of the herd unmarked. The cattle were exposed to similar risks. None of the 683 painted "eye-cows" were killed by ambush predators during the four-year study, while 15 (of 835) unpainted, and 4 (of 543) cross-painted cattle were killed. Cattle marked with simple crosses were significantly more likely to survive than unmarked cattle from the same herd. This suggests that cross-marks were better than no marks at all, which was unexpected.

However, the study has some limitations. It is unclear whether painting would be effective if there are unmarked cattle in the herd, although applying artificial marks to the highest-value individuals would probably be effective. Predators may also get used to it and eventually ignore the deterrent. This is a fundamental issue for nearly all non-lethal approaches. Whether the technique remains effective in the longer term is not yet known in this case.

From: Dr J Weldon McNutt (Director, Botswana Predator Conservation) and Tshepo Ditlhabang (Coexistence Officer, Botswana Predator Conservation) <https://theconversation.com/lions-are-less-likely-to-attack-cattle-with-eyes-painted-on-their-backsides-142488>

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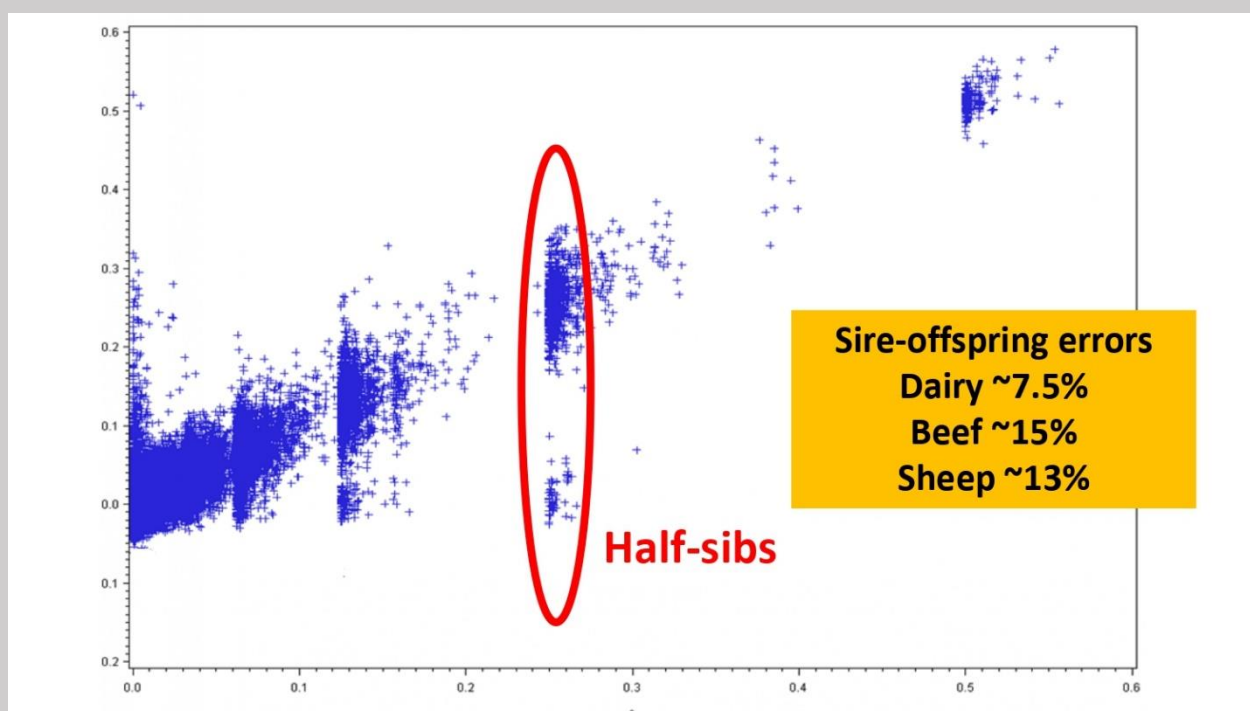
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SA Stud Book Breeding Symposium 2019

SA Stud Book's Breeding Symposium for 2020 has unfortunately been postponed due to Covid-19. The Breeding Symposium of 2019 provided breeders with the latest information to make the right selection and breeding decisions. The keynote speakers were from left to right: Professor Hannes Rautenbach, Professor Darrah Bullock from the USA, and Doctor Donagh Berry from Ireland. Here are some of the highlights from their respective lectures. The full lectures are available at www.SAStudBook.co.za, click on Publications and Alfa Expo 2019.

Prof. Donagh Berry: 'Knowledge of the Genotype: Pushing Selection Boundaries.'



Progeny Equivalence for Genomics Testing in AAA and IGS

Trait	h^2	r	Progeny Equivalent
Calving Ease Direct	.20	.67	24
Birth Weight	.42	.69	13
Weaning Weight	.20	.56	19
Yearling Weight	.20	.68	24
Dry Matter Intake	.31	.73	17
Scrotal Circumference	.47	.80	16
Docility	.37	.68	11
Heifer Pregnancy	.13	.62	22
Milk	.14	.37	14
Carcass Weight	.38	.60	7
Marbling	.45	.65	8

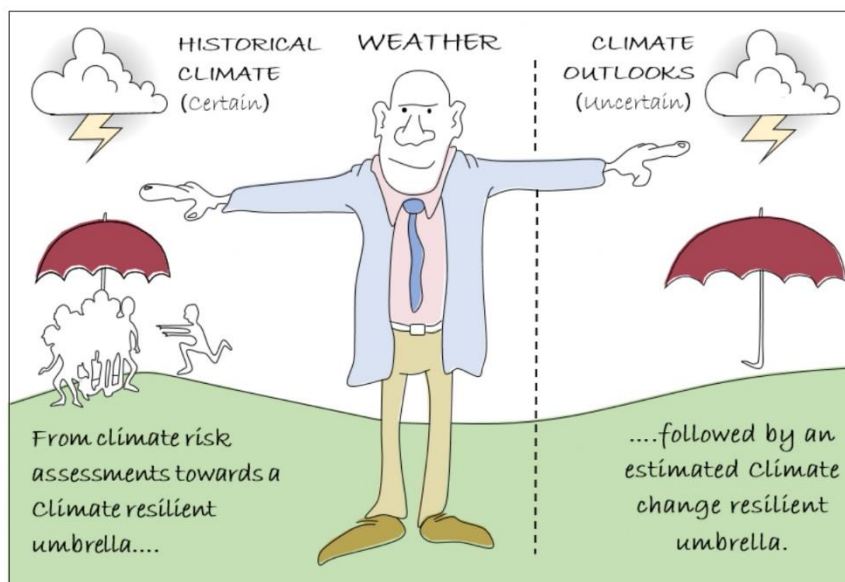
Steve Miller (AGI), 2016 NBCEC Brown Bagger

Trait	Progeny Equivalent
Calving Ease Direct	15
Birth Weight	21
Weaning Weight	22
Yearling Weight	24
Milk	14
Stayability	25
Calving Ease Maternal	3
Carcass Weight	6
Marbling	6
Rib Eye Area	8
Backfat	8

Mahdi Saatchi (IGS), 2019 Personal Communication

Prof Hannes Rautenbach: 'Will Global Climate Change Affect Breeding Objectives?'

Climate change adaptation and resilience can be achieved by following a **SUSTAINABLE ROTATING CLIMATE SENSITIVE ROUTE**, based on good observations, regular updates and risk assessment and response planning according to observed weather and climate events, while aligning these to weather forecasts, seasonal predictions and climate change projections, as they happen at the location of interest.



Brands and Herd Designation Marks

Herman Labuschagne

Improved control measures at auctions following the recent foot-and-mouth crisis have made everyone more aware of the importance of identifying cattle. Brands are essential to enable traceability, as it is linked to an owner and location and is registered on a database. This is especially important in stock theft cases. Auctioneers are also now checking whether animals are marked with either a valid brand or tattoo. However, the validity of different marks sometimes confuses livestock farmers and authorities. The authorities are also not always aware of the marks used by stud breeders.

Breeders' Associations issue a Herd Designation Mark (HDM) to each of their stud breeders. However, it may be duplicated over breeds and is therefore not unique. Also, the brand issued by DAFF to commercial livestock farmers may duplicate with stud brands. This causes great confusion.

Two laws apply:

- Animal Improvement Act 62 of 1998 (Stud Breeders' Herd Designation Marks)
- Animal Identification Act of 2002 (Brands)

The latter Act excludes the Animal Improvement Act in paragraph 15.2. The Animal Improvement Act was promulgated before the Animal Identification Act and the herd designations were already granted when the Animal Identification Act was promulgated. There are therefore duplications between stud animals and commercial animals.

The Animal Identification Act stipulates that an animal must be permanently marked with a hot iron, freeze brand, or tattoo. The constitution of each of the Stud Breeders' Societies determines how their animals should be marked, usually a tattoo or brand. Ear tags are not sufficient for identification because they are not permanent due to possible loss or damage. Identification is also impossible if a stolen animal's ears are for example cut off.

Brands are permanently assigned to a person or farm upon registration and when that person passes or ceases farming, the brand may no longer be used. The Registrar of Brands must then be notified. DAFF also needs to be notified even when brands are transferred from father to son.

Herd Designation Marks (HDM) are permanently issued to a person or farm for as long as the breeder is actively farming, and the stud is active. When the breeder stops farming, the mark may not be used again in the breed. The HDM, therefore, has a valid period within which it can be used. In the case of crossbreeding, the offspring is not registrable, and the stud breeder must use his commercial cattle's brand for those animals. If the dam is a stud cow, she is marked with the herd mark for stud breeding.

Unfortunately, there is no current central database where authorities can confirm brands, but it will certainly be addressed by the new LIDS system for traceability. The SAPS' Stock Theft Units do have access to both the Departmental data base and SA Stud Book's Logix database.

Contact details:

Department of Agriculture:

- Correspondence, applications, and enquiries: animalid@daff.gov.za
- Information and application forms: www.daff.gov.za/daffweb3/daff-services/registrations

SA Stud Book:

- Application for registered stud breeders: helpdesk@studbook.co.za



BLUP Breeding Values

Helena Theron



The dilemma of selection: Measurements alone cannot be used successfully to select animals, because the animal's performance is largely determined by the environment, such as feed, and not just by its genetics. The animal may therefore appear superior but will not necessarily breed superior calves. In addition to feed, other influences that determines performance include age, sex, etc.

The solution: Measure similar offspring from different bulls in the same environment and estimate breeding values.

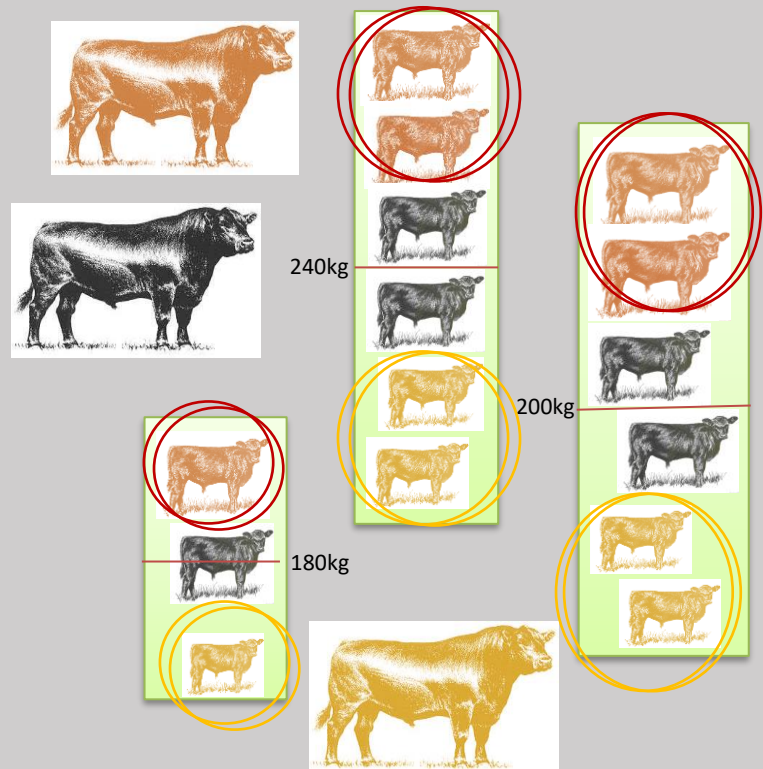
This is possible when:

- The animal is in a **herd that measures performance** and information such as parentage, date of birth and sex is known.
- The animal is measured in a **contemporary group**. This is a group of animals that were exposed to the same environment and received the same feed. The effect of the environment is therefore the same on all the animals in the group, and if other effects such as sex and age are also considered, the differences in the measurements are due to the animals' genetics.

Pedigree information is also used: if Bull A's calves, for example, consistently do better than Bull B's calves in different contemporary groups, regardless of the environment, this means that he breeds heavier calves, and will therefore also have a higher breeding value. Bulls are therefore ranked according to their calves' performance.

Breeding values are therefore estimated by using measurements within contemporary groups.

If an animal does not have measurements, its breeding values can be estimated from family, provided they were measured in contemporary groups.



The principle of BLUP breeding values: Calves are measured in contemporary groups relative to the group average. Parents who tend to breed above-average calves, regardless of the environment, get above-average breeding values.

Wean Contemporary Groups

Helena Theron

What is a contemporary group?

These are animals of the same age group reared in the same camp at the same time, in other words animals that were exposed to the same management and nutritional conditions

Guidelines:

- Animals are weaned at approximately 7 months (205 days). Any weights between 151 - 270 days of age (± 5 to 9 months) are accepted.
- Calves born in the same season and differ less than 100 days in age are compared.
- The group should be as large as possible, with a minimum of at least 3 to 5 animals.
- Animals that have been treated differently or have been exposed to a different environment are placed in separate groups.
- Try to have more than 1 bull's offspring and also more than 1 offspring of a bull in a group.
- Weigh all calves in a group on the same date, not every calf on exactly 205 days of age, and close the group. After that, animals that are not used for breeding can be culled.

Determine the weighing date with Logix:

- Click on 'Shortcuts', Cattle, then 'Calculate weight dates (Cattle)'.
- Give the group a name e.g. "Summer 2020" and fill in the oldest and youngest calves' date of birth.
- Logix will calculate the earliest, latest, and best date on which the calves can be weighed.

Fill in the weights:

- The weights are recorded under Shortcuts -> Cattle -> Beef: Record Weights (Beef Cattle).
- Select A22-Wean Test as the Test Type and fill in the weighing date. Click on 'Create New'.
- A list of all your calves will be shown. Record all the information.
- If necessary, the group can be split into the different treatment groups by using the Calf Rearing codes, the Feeding Status Codes or the Comment Codes.

Tips:

- Work accurately: Before submitting data, make sure everything is correct. For example, wrong measurements or sexes of calves cause unstable breeding values, so make sure there were no typing errors.
- Do not manipulate groups to make phenotypic data look good. It slows down genetic progress.

Calf Rearing codes

1	Calf suckles to own mother
2	Calf suckles adopted mother
3	Twins both suckle on their own mother
4	One twin suckles on own mother
5	Calf suckling mother & mother are milked
6	Calf hand reared
7	Embryo transfer - calf suckling recipient mother

Feeding status codes

1	Calcium/Phosphate lick
2	Protein/Energy lick
3	No lick
4	Concentrate or Creep feed
5	Another lick
6	Planted pastures
7	Crop residues

Comment codes

1	Age beyond limits
2	Mother ill / injured
3	Animal sick or injured
4	Animal weight off limits
5	Animal index out of bounds



Further information

100 days age difference: If the animals in a group differ more than 100 days in age, the group is automatically divided into two, or the breeder can divide the group.

Group size: There group should preferably be as large as possible, with an optimum of about 10 to 50 animals and a minimum of 3 to 5. If there are only 1 or 2 animals in the group, the calves' data are not included in the BLUP analysis. Large groups should not unnecessarily be divided into many small groups. Bulls and heifers should also not be placed in different groups.

Management and nutritional differences: The breeder is the only one that knows whether the calves in the group are comparable. Cows and calves bought from other herds, show animals, selective creep feeding, etc., should receive different codes.

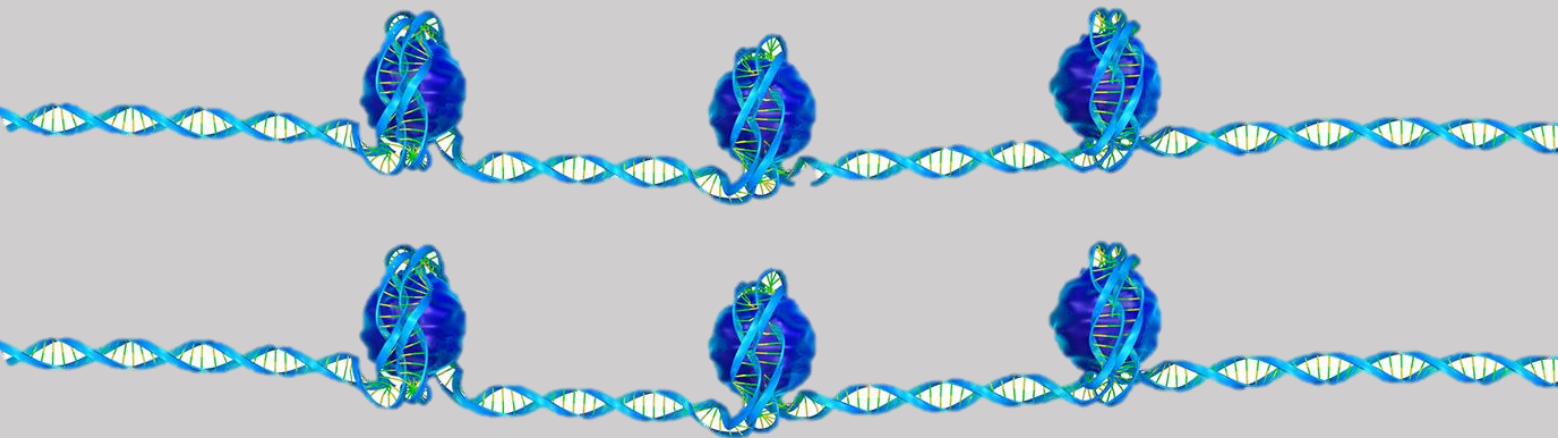
If the environment of a large group has changed between birth and weaning (e.g. onset of rain or drought, movement of animals, etc.), it may advisable to divide the group (e.g. all the calves born within a certain month), so that calves are compared within their own age group, rather than within the whole group.

Progeny of more than one bull: Swop heifers and cows between groups or merge groups so that heifers and cows wean calves from different bulls in the same camp. Sometimes mating groups can also be kept intact as a contemporary group, provided the current mating group are different from the previous mating season as the calves at foot will then have different sires.

Small herds with only 1 bull: Some cows can be artificially inseminated or mated to another breeder's bull.

Some more tips

- Weigh the calves and their dams, as well as the previous year's weaners still on the farm. This will add mature weights and 18 months weights as well, which in turn will increase the accuracies of the breeding values in the herd.
- The Kraal list can also be used to identify the animals which have not yet been weighed and the animals can be divided according to this list into the age groups for weighing. On Logix, go to 'Reports', click on 'Administrative Reports' and select 'Administrative selection list'.



Epigenetics

Jason Reding

Epigenetics is a complicated but fascinating subject. Epigenetics is the ability of certain genes to switch 'on' or 'off' due to environmental stress.

Recently, there has been a lot of novel studies in livestock species with regards to epigenetics. Epigenetics is defined as heritable changes in gene activity and expression and consequently in phenotype, which occur without alteration to the underlying DNA sequence. This means that the DNA sequence remains unchanged, but the process of transcribing and translating the DNA into proteins and hormones is affected, which ultimately is reflected as a change in phenotype and production. These stressors are “stored” in the cells “memory” and if the animal was to encounter the same stress again, the animal would have a better response as the animal cell’s have been “primed” to the specific type of trauma. The epigenome refers to all the stressors and trauma experienced or inherited by an organism’s genome that affect the expression of the phenotype.

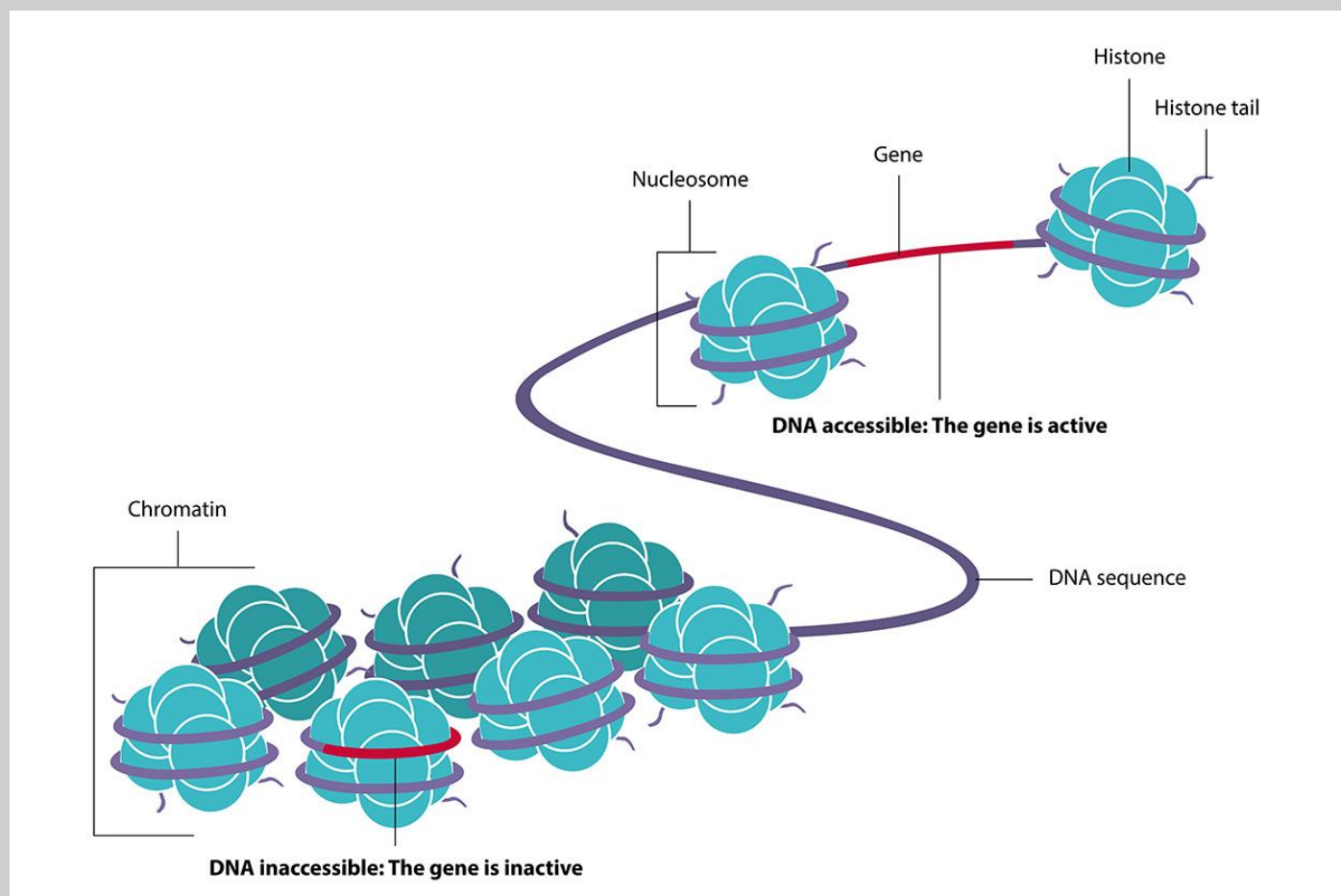
Heritability

These stressors can “prime” the germline cells of these animals which subsequently prepares the offspring of the stressed animal to be able to respond to the stressor sufficiently. An example from a recent study indicates that daughters of cows that suffered from clinical diseases in the lactation when the pregnancy was generated had reduced incidences of clinical diseases as a young heifer and as a first-lactation cow. This is called a predictive adaptive response as the fetus was exposed to the stressor in the pre-natal environment and now has the epigenome that is “primed” to the environment the offspring will be born into. Thus, that heifer is “primed” to have an improved resilience or tolerance to the clinical disease the parent of the offspring was exposed to! If the animal exposed to a stressor is currently in gestation, the germline cells of the fetus can inherit the epigenetic information resultant of that stressor. This means that the grandchildren of the stressed animal will carry the epigenetic changes and is “primed” to respond accordingly to the same stressor experienced by its grandparent. This is known as transgenerational inheritance of epigenetic information.

Gene activity

Most geneticists refer to the epigenetic features as having the ability to “switch-on-or-off” certain genes due to an environmental trigger. A good example of genes being “switched-on-and-off” is the alpha casein gene. The alpha casein gene is normally switched on during lactation, but switched off in the dry period. During lactation, this gene has been “switched-on” as the cow is producing milk, a physiological trigger. Studies have shown that when the mammary gland becomes infected with *E. coli* or *Streptococcus uberis*, the alpha-casein gene is subsequently “switched-off”. This

can be observed in that as the SCC of the cow's milk increases, the level of milk components falls/decreases. This may be resultant of the epigenome of the cow to be "primed" to move energy resources towards a higher expression of an immune response related gene activity in the presence of these bacteria. Animal whose epigenomes are not "primed" to these bacterial infections may have a delayed immune response resulting in a higher SCC due to more bacteria being present.



A lot more research has to be done in livestock, especially with how the epigenomes of male animals affects their progeny, especially if the environmental pressures experienced are completely different, for example use of an American AI bull's semen in a South African cow. That bull's semen carries the epigenome of the American environment and may not allow progeny born in different environmental settings to be "primed" to respond sufficiently to the SA environment.

Epigenetics will not drastically change our current understanding of predicting progeny performance. As animal scientists we have always acknowledged the effect that the environment places on an animal's level of performance. Epigenetics will provide the link between the expected phenotype according to the animal's genotype and the observed phenotype which is resultant of the environmental pressures that alter the expression and activity of the animal's genes.

References

Carvalho, M.R., Aboujaoude, C., Peñagaricano, F., Santos, J.E.P., DeVries, T.J., McBride, B.W. & Ribeiro, E.S., 2020. Associations between maternal characteristics and health, survival, and performance of dairy heifers from birth through first lactation. *J. Dairy Sci.* 103, 823–839 <https://doi.org/10.3168/jds.2019-17083>.

Chavatte-Palmer, P., Velazquez, M.A., Jammes, H. & Duranthon, V., 2018. Review: Epigenetics, developmental programming and nutrition in herbivores. *Animal* 12, S363–S371 <https://doi.org/10.1017/S1751731118001337>.

Thompson, R.P., Nilsson, E. & Skinner, M.K., 2020. Environmental epigenetics and epigenetic inheritance in domestic farm animals. *Anim. Reprod. Sci.* <https://doi.org/10.1016/j.anireprosci.2020.106316>.



Genotyping of Animals: Single Gene Traits and Haplotypes

Dr Bernice Mostert

One of the benefits of genotyping animals is to obtain information regarding the genetic composition of certain recessive traits and haplotypes. A trait can be dominant, recessive, or additive, or it can interact with other genes.

Recessive trait: CVM

A recessive trait means that an animal must have 2 copies of the gene (alleles) for the trait to be expressed. Animals that have only 1 or none of these alleles will therefore display the normal phenotype. An example of a recessive trait is Complex Vertebral Malformation (CVM). Animals with 2 CVM alleles abort or are stillborn, while animals with only 1 allele are normal.

Dominant trait: Polled

In dominant traits, animals carrying 1 or 2 copies of the gene will display the trait. For the normal phenotype, therefore, the animal should not carry any of these alleles. An example of this is the polled allele. Animals with 1 or 2 copies of the polled allele will be polled, while only those animals with no polled allele will be horned.

Additive trait: Some colour genes

With additive properties, each copy of the gene increases the effect of the trait, in other words animals with 1 allele will have a phenotype that is in the middle of the phenotypes caused by 0 and by 2 alleles. An example of this is the Silver Diluter 1 allele. Animals with 0 copies of the gene will display the breed's basic colour e.g. Black, while animals with 1 allele will be light grey and animals with 2 copies will be white.

Incomplete penetrance

Sometimes an allele has incomplete penetration. In such cases, even animals that are homozygous for the allele (both copies are carried) will not display the trait. This is usually when several genes influence the expression of the trait and of the other genes involved mask the specific allele's effect.



Mating risks for expression of recessive genes

Mating of two normal animals:

(0% chance of affected calf)

$AA \times AA = 100\% AA$

Mating of two affected animals:

(100% chance of affected calf)

$aa \times aa = 100\% aa$

Mating of normal animal and carrier:

(0% chance of affected calf)

$AA \times Aa = 50\% AA : 50\% Aa$

Mating of a carrier and affected animal:

(50% chance of affected calf)

$Aa \times aa = 50\% Aa : 50\% aa$



Mating of two carriers:

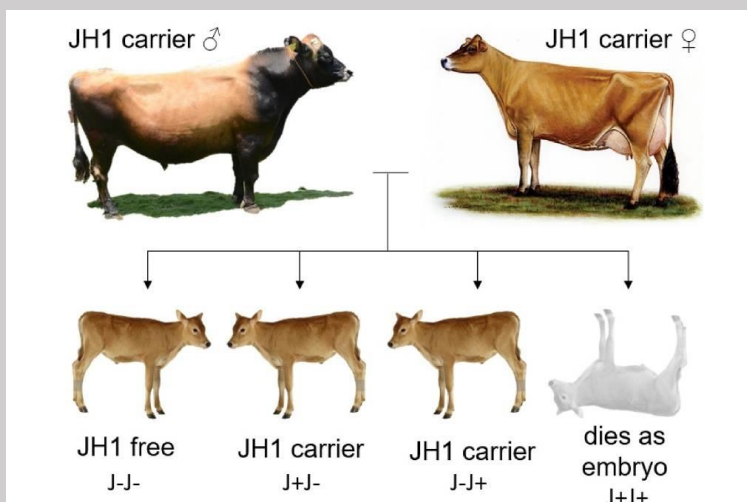
(25% chance for an affected calf, 50% chance for the calf to be a carrier and 25% chance to have a normal calf)

$Aa \times Aa = 25\% aa : 50\% Aa : 25\% AA$

The difference between a recessive trait and a haplotype

In each breed, genetic disorders, known as recessive traits, occur. Examples of this are Brachyspina, CVM, BLAD etc., as well as the traditional gene for red hair colour. By genotyping it can be determined whether the animal is a carrier of the gene or "clean", with almost 100% certainty.

Haplotypes are traits that are affected by short pieces of DNA. In the Holstein breed, for example, 6 haplotypes were identified (HH1 - HH6: Holstein Haplotypes Nos. 1 to 6) and for the Jersey breed 1 (JH1), which affects fertility. Another haplotype identified in the Holstein breed is the HCD haplotype (Haplotype Associated with Cholesterol Deficiency) which causes animals that carry both copies of the gene (homozygous for the gene) to die within 6 months of birth.



SA Stud Book's Genomic Selection Service

Participation in SA Stud Book's Genomic Selection Service enables us to establish a central database for various single gene traits and haplotypes that occur in South African populations. The frequency of the genes can therefore be determined and their increase / decrease over time can be monitored. It will also be possible to determine the frequency of desired / undesirable traits at herd level and enable our breeders to apply precision breeding. The best way to avoid problems associated with genetic disorders is not to mate animals that are carriers of an unwanted gene / genes. To get this right, a breeder must of course know which animals in his herd are carriers of unwanted genes and which animals are "clean" of the unwanted gene. It is not necessary to eliminate carrier bulls from your bull selection, if you make sure that the bull is not used on cows that are also carriers. However, the frequency of unwanted genes and haplotypes can be significantly reduced at herd level and in the population by using bulls that are not carriers.

The Disadvantages of Overfeeding Rams and Ewes



Dr BE Mostert

The overfeeding of animals is detrimental in any environment and management system. However, the perception exists that larger rams fetch better prices at auctions and buyers think that larger rams will breed fast-growing offspring. While overfeeding will increase ram size, the ram's genetic ability to grow as well as the management to which the lambs are subjected to determines how well the ram's offspring will grow.

The purchase of overfed rams has the following adverse effects (Ian McDougall MRCVS, Australia):
In the Short Term:

- **Infertility (usually for a period of 2-3 months after purchase).** Fat deposits in the scrotum isolate the testicles which consequently increase testicular temperature. Furthermore, as overweight rams are unfit (heart and lungs), any physical exercise raises their body temperature and complicates their ability to maintain low testicular temperature. Hot testicles = infertility.
- **Poor mating ability** - overweight rams struggle to mate with an adequate number of ewes during the mating season. This can be attributed to a number of factors: Reduction in the number of ewes mated within a given period, impaired mating ability, reduction in the frequency of mating (fit rams will mate with ewes more than once during the oestrus period, which is positively correlated with an ewe's pregnancy rate and multiplication percentage), lower fertility in young ewes (young ewes have a shorter oestrus period than older ewes and are therefore more disadvantaged by rams that are unfit or have poor mating ability). Overweight rams also have more pressure on their hind legs' joints during mating.
- **Rams quickly lose condition** when they are put with the ewes immediately after purchase and may even become unfit for breeding. It takes about 3 weeks for the microbes in the rumen to adapt when overfed rams suddenly

have pasture as their only food source. During this time, the ram can lose a lot of weight as well as testicular mass. If purchased rams are immediately placed with the ewes, this problem is exacerbated, because the ram now also chases ewes which further burns more energy than he can ingest.

In the Long Term:

- Overfed breeding rams cannot survive on grazing alone as a food source. In commercial herds, these rams survive for only 1-2 breeding seasons before they die or are culled due to hoof / leg problems or due to poor condition.
- Breeding rams have persistently poor mating ability due to unfitness, being overweight, having weak hooves and legs and possibly cartilage weaknesses.

Overfeeding of ewes has the following adverse effects (Stephany Wilkes, PhD, USA):

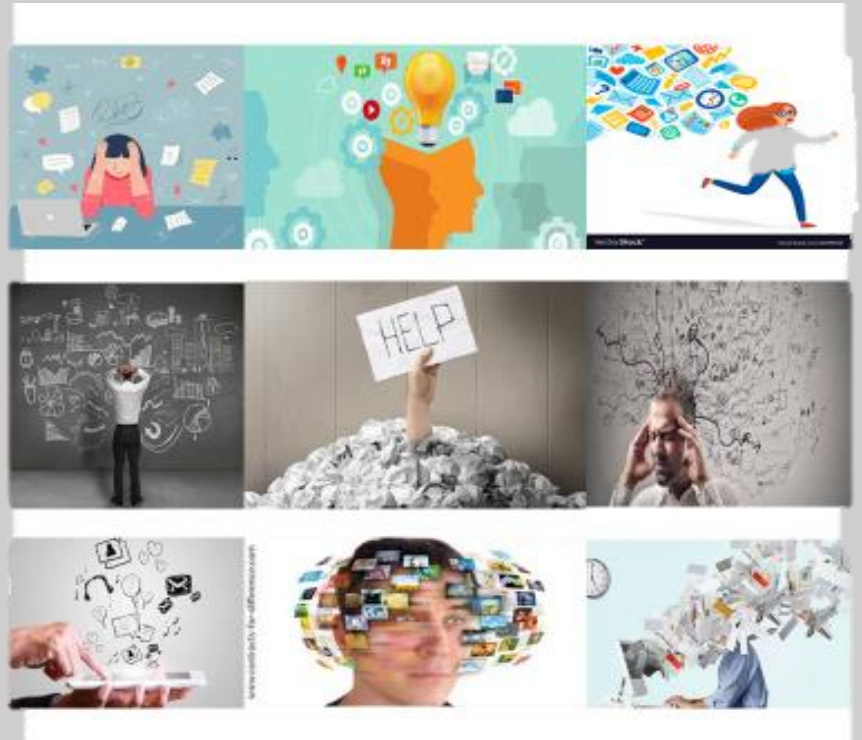
- It complicates lambing. Lambs become too large due to overfeeding of the ewes, especially during the last 4-5 weeks of gestation and must often be pulled at birth.
- It contributes to prolapse of the uterus.
- It lowers fertility.
- It impairs udder development.
- It impairs the survival of weak lambs.
- It can lead to acidosis, which can be a fatal condition. Acidosis is caused by overeating specific grains in the diet. The bacteria in the rumen use the carbohydrates in grain to produce acid. If too much acid is formed, it is absorbed into the bloodstream with the result that the animal's whole body's pH becomes too low.
- It makes wool coarser and shorter. An excess of protein increases fibre diameter, while an excess of fat can reduce staple length. An improvement in wool density can therefore indicate that the sheep has been overfed. The ewe's genetics affect the extent to which the wool will grow coarser, implying that not all sheep will be affected to the same extent.
- Overweight sheep can have difficulty breathing, handling heat and may be more difficult to handle.



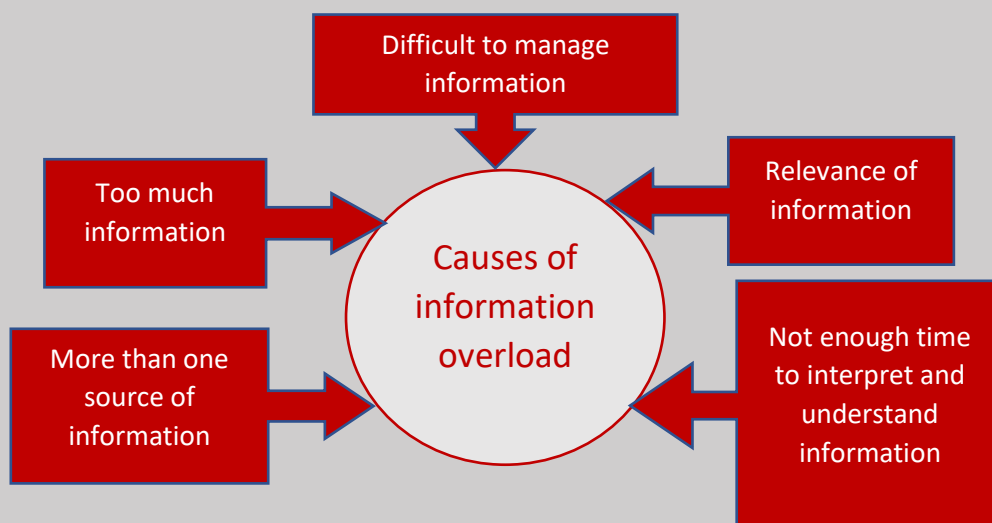
Data overload: Let us help!

Suretha Francis

Do you
regularly feel
like this?



We live in an age of information. Are only certain age groups / generations nowadays feeling overloaded with all the information they are bombarded with? When opening your email, there is another report and more data. Sometimes you do not even feel like reading either the email or report. Too much information results in decisions being postponed or no decisions being made at all.



What are the real causes of “Information Overload”?

Information is received from many sources. To name just a few dairy examples: A lot of information is collected daily / weekly / monthly from dairy farm software systems (Delpro, Alpro and Afikim), as well as information from production recording, information from study groups and management consultants and the list goes on.

There is simply just too much information. This makes it difficult to manage information. The relevance of the information is also of great importance. As we all know, farming consists of many branches, so the farmer's time is really limited in trying to interpret and understand information.

The effective use of data turns darkness into light!



How do you prevent information overload?

To name but a few:

- **Manage the information:**
 - Prioritize and use the data effectively.
 - Get all the experts involved to evaluate data, identify critical data, and then integrate it.
- **Set goals for your herd as “Key performance indicators”.**
 - Keep it as simple as possible.
- **Data can be displayed in the form of action lists.**
 - All available data is evaluated, integrated by Stud Book staff, and is then displayed in easily understandable action lists without any unnecessary information.

SA Stud Book staff are available to help breeders understand and use data in a way that is easy and practical to use. This means that the breeder can also farm more purposefully, and that farming will be more profitable.

Contact Suretha Francis (Suretha@StudBook.co.za) or Schalk Greyling (Schalk@StudBook.co.za) for more information

Memories of Alfa 2019



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