ZIM UNDA FARMING

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AGRI-ECONOMICS

Cover crops Beefing-up cattle

FARM FOCUS

Heterosis at Gwaai Farm

POULTRY

Rainy Season Diseases

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DISCLAIMER

COVER

The aim of ZiMunda Farming is to provide correct and relevant farming information to farmers. Every effort is made to check the content of every article, the directors will thus not be held responsible for errors or omissions in such articles. Farmers should thus consult with the references and resource

people before making any financial or production decisions.



Healthy maize crop at A.R.T Farm -Fossil Agro field day 2019

Breed Focus - Capturing Hybrid Vigour at Gwaai Farm

By Andrew Lock, Macheke

With the mating season upon us, it is a good time to share insights on the topic of crossbreeding and how this breeding method has benefited our commercial beef breeding cow herd at Gwaai farm.

It is always advantageous for cattle not to excel in only one trait but to be complete in their genetic profile for reproductive, environmental and disease tolerance, growth, and end product merit. But it is unfortunately challenging for one breed to have all this in an efficient manner. One of the oldest and truest methods of finding that balance is via the use of crossbreeding. Through a learning cycle we have embraced the power of heterosis in our breeding system.

A TOUCH OF HISTORY

In 1981 we purchased a herd of Simmental from a neighbouring farmer which was financed by the Cold Storage Commission's (CSC) Cattle Grazier Scheme. This was an excellent scheme whereby the cattle belonged to the CSC until the loan was paid off through sales of steers, cull cows and excess heifers. The Simmental cattle breed is a **Bos Taurus** animal (European origin). We read that there were a lot of advantages to be gained by crossing it with **Bos Indicus** breeds (Indian Zebu origins) - mainly hybrid vigour.

To achieve this goal, we did not have to look further than across the Macheke River in the Highveld area where Carmen Stubbs was running an excellent Mashona Pedigree Herd. For many years we bought Mashona bulls from her (and still do). Her record keeping was second to none, in turn this made our breeding records comprehensive. The result of the Simmental cross with the Mashona was a breeding animal that did not need as much supplementary feeding as the purebred Simmental, re-conception rates went up and it was hardy with lower mortality rates and longevity. We also now had cows that could produce weaners up to two thirds of their own weight.

After a while we reached a stage where we were fully stocked and with the

increase in cropping hectarage, we could not keep the numbers of cattle we had at our farm. Since we did not want to reduce the herd, we had to find grazing land further afield. Fortunately, we managed to do this but this meant that we could no longer see our cattle on a daily basis and there was now a degree of "Out of sight - Out of mind" phenomena happening. As a results, this was when we saw the Mashona stand out, with its traits of hardiness, disease tolerance, lower supplementary feeding requirements and high fertility. As a result of this experience and observation, we dropped the Simmental and our herd became dominantly Mashona.

About 10 years ago, we heard about the Boran Breed at Forrester Estate, Mvurwi. We went to have a look and were pleased with the breed. We ended up buying four bulls from the estate.

WHAT ATTRACTED US TO THE BORAN BREED?

The Borans where not too big in stature and had good fleshing – these traits

were an instant attraction for us since medium stature is easier for nutrition management and good fleshing is correlated to decent beef production. While at the estate we saw a group of steers in the feed pens, these had traits of both the Mashona and the Boran. Upon questioning the owner of the estate on these steers, he confirmed that a Mashona bull from the neighbouring communal land had 'jumped the fence' and serviced some of his Boran heifers. In my view, these were outstanding animals. We were immediately excited about the prospect of putting Boran bulls onto our Mashona cows.

However, one only really learns about a breed when they are actually rearing the breed under their conditions.

WHAT DID WE FIND WITH THE BORAN?

The breed **can survive and even do** well under relatively harsh conditions.

Our farm is located in an area that experiences a long dry season June to November, particularly after frost where there is very little nutrition in the natural veld (sour veld), but the animals kept in condition with good body scores.

It is disease tolerant. Theileriosis is rife in Mashonaland and even though some of the Boran animals contracted the disease, we lost very few. Early detection of sick animals also made a big difference.

Longevity - A very strong trait in the Boran breed. Most of our bulls are

surviving beyond their economic working life.

A strong herd instinct. If one is herding cattle, this trait makes it easier for them to manage the herd in the pastures.

The re-conception rates are very good as long as we gave the animals adequate winter supplementation.

However, the most exciting and rewarding results was the feedback we got from the pen feeding abattoirs where we had sent our **yearning steers.** We generally keep our weaner steers over the following summer on the veld where they would grow to around 300kg and hereafter, sell them end of March/ April to the feedlot companies at about 18/19 months old.

Some of the results are as follows:

Average Induction Weight- 300kg Pays in Feedlot – 98 Average Daily Gain- 1,94kg Average Com- 267kg

We were often told that our Mashona Steers were too small for pen feeding however, when crossed with a Boran they produced results way beyond our expectations and even surprised the feedlot companies.

AT PRESENT

We still have a Purebred Mashona cow herd from which we are selecting our bulls. All the other herds are a Mashona-Boran criss-cross, i.e. If the cows show more Boran traits we put them to a Mashona bull. Likewise, if the cow shows more Mashona traits she goes to a Boran bull. This way we kept as close as possible to a 50/50 cross. Breed complementarity has helped us balance the genetic potential for economically important traits, such as growth rate and carcass composition, with climate, feed resources, fertility, disease resistance and market suitability.

In conclusion, we have a cross breed that is suitable for our conditions and it is working well for us.

For more information on crossbreeding and the Boran breed refer to ZiMunda issue 3, Herd Improvement through cross breeding and issue 19, The Boran Breed - "God's Gift to Cattlemen".







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Common Chicken Diseases During the Rainy Season

By General Beven Mundida, Livestock Consultant.

he rainy season is a challenging period for poultry farmers in terms of disease occurrence. It brings with it constant temperature fluctuations and humidity variations which can result in negative impact on bird health and consequently economic losses of the enterprise. Farmers are hence advised to invest more care and attention towards their birds as well as be aware of the prevailing relevant seasonal diseases.

Common poultry diseases during the rainy season can be `impelled by; bacteria introduced to the flock through the dripping water coming from many sources and/or immunosuppression which is trigged by the weather conditions. Understanding key poultry diseases that may affect the birds during this season is paramount to the success of any poultry enterprise. Some of these diseases that farmers should take note of include;

1. FOWL CHOLERA

The disease is caused by a bacterium called **Pasteurella multocida** and it affects birds from the age of six weeks and above. It is a challenging disease with symptoms that are hard to notice, only to see dead chickens in the fowl run.

In acute outbreaks, the first warning sign is usually sudden death of birds which initially appeared healthy. While in chronic cases, affected birds exhibit difficulties in breathing, diarrhea (wet grey, yellow or green droppings), dropped wings and tail feathers, loss of appetite, ruffled feathers, and the tendency of birds to sit quietly with their heads tucked in with their eyes partly closed. Depending on the localisation of the disease, it may result in; lameness and swelling of the legs or wing joints, twisted neck, swelling around the eyes, and discharge from beak or nostril. Symptoms of the chronic cases may be confused with fowl typhoid. Birds should be vaccinated against fowl cholera and incase of disease incidence they can be treated using sulfa drugs or tetracycline.

2. INFECTIOUS BURSAL DISEASE (IBD) - GUMBORO

The disease is a virulent which affects chicks and young birds between the age of 3-18 weeks. IBD attacks the bursal of a bird resulting in the suppression or weakening the immune system, subsequently predisposing the birds to secondary infections. Affected chickens may exhibit severe prostration, incoordination, watery diarrhea, soiled vent feathers, vent picking, and inflammation of the cloaca.

IBD is highly contagious with flock morbidity (illness) typically 100%, and a mortality range of 5-10%. Unfortunately, there is no effective treatment for this disease but, it can be prevented by administering IBD vaccine according to vet recommendations before an outbreak occurs.

Incase of an outbreak, the flock should be depopulated of infected birds and rigorous disinfection of contaminated poultry houses and the whole farm is advisable. Normally, maternal immunity and vaccination reduces susceptibility to this infection during the rainy season.



3. E. COLI AND SALMONELLA

These two bacterial diseases affect birds of all ages by distressing the digestive system of infected birds. Disease

POULTRY

occurrence is higher in farms or pens with poor sanitation. The degree of stocking density and inadequate ventilation highly increases the rate of spread of these diseases. E. coli and Salmonella also emerge as secondary infections following immune-suppression and poor sanitation resulting from wet conditions. Under a free-range system the diseases occur due to; uncontrolled exposure of birds to the environment, absence of housing and lack of routine vaccination.

The common symptoms of these diseases include breathing difficulties, loss of appetite, depression, infection of the umbilical stump (omphalitis) and low growth rates. To manage the diseases farmers should; orally administer broad-spectrum antibiotics, include general sanitation protocols, execute biosecurity measures and avoid feeding birds with contaminated feed.

4. FOWL POX

The pox is highly contagious and it affects poultry birds at any age. It is caused by a poxvirus transmitted by bloodsucking insects mostly mosquitoes. The disease is prevalent during the wet season because of the high frequency of vector insects. Fowl pox attacks the skin and surfaces of both the upper alimentary and respiratory tract leading to the formation of wounds that progress to be thick scabs. Secondary infection of the pox results in birds being weak and emaciated due; to loss of appetite, difficulty in swallowing and breathing, swollen eyelids which lead to closure of one or both eyes and soiled feathers.

The infection has no treatment. Farmers should; vaccinate healthy birds to prevent them from this disease, discard stagnate water and destroy all mosquito habitats and isolate or culling of infected birds to remove the source of virus

Maintaining proper hygiene and sanitation is key to preventing birds from any disease. It is good to practice a high level of biosecurity and keep rodents, wild birds and other animals away from your flock as these can be an entry points of the disease into the farm.

For more information in bird health contact call/ WhatsApp +263 776 420 161 or email gbmundida@gmail.com





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- Yield potential of up to 8 tons per ha.

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- Good tolerance to low nitrogen conditions.
- Good HT, Rust, MSV, GLS and Diplodia tolerance.
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- Yield potential of up to 8 tonnes per ha.

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Mating, Lambing and Record Keeping

By William Hundermark, Zimbabwe Dorper Breeder's Association

Productive sheep husbandry is based on careful planning and a systematic approach to managing lambing ewes. Careful management of the pregnant, parturient and lactating ewes will have a marked influence on the percentage of lambs dropped and reared successfully. This article aims to provide information for sheep producers.

'Breeding and lambing are most of all a matter of selecting the right mates at the right time and keeping appropriate records' Robert Davis.

The information below are excerpts of an article written by Mr Dirk Buitendag in 1986 for the farmer magazine. Mr Buitendag imported the first Dorper sheep into Zimbabwe from South Africa and his contribution to the Dorper industry in Zimbabwe remains valuable to this day.

BREEDING MANAGEMENT

Ewes (female sheep) can be divided into two groups and lambed every eight months in rotation so that you can have a lambing season every four months for half of the breeding ewes. They should be run on the veld and brought into open night paddocks close to the farmer's house because of vermin (jackals or stray dogs) and possible theft. The ewes will lamb down either in the veld or in the night paddocks and should only be brought into feeding pens once they have lambed. They should then be on ad lib feeding until weaning time which, on average is 90 days. On the same day the lambs are weaned the ewes goes back to the veld and to the ram for approximately 45 days. One ram to a maximum of 60 ewes and a single sire mating system should be practised for the purpose of record keeping and for registration of animals with the Zimbabwe Herd Book. Breeding rams are put to the breeding females only at night.

Mating should be on the following dates:

1st February to 15th March 1st June to 15th July 1st October to 15th November

The ewes will lamb on approximately the following dates:

From the last week in June to the first week in August (July lambing or winter lambing)

From the last week in October to the first week in December (November lambing or summer lambing)

From the last week in February to the first week in April (March lambing or autumn lambing).

This programme ensures a constant supply of lamb to the butcher and also a continuous supply of breeding animals to other producers.

Supplementary feeding of breeding ewes should always be given during mating and again on six weeks prior to lambing, the amount varying according to animal condition and the state of the grazing. At all other times breeding ewes are only fed to supplement the veld and only if necessary. All lambs are weighed at weaning and the necessary adjustments regarding age, sex, single or multiple births, age of dam are made and indexes are established. The relevant data is transferred to the record cards on which complete production records are kept for each ewe. This is the main and biggest aid in culling which occurs at weaning. About 15% of ewes should be culled after each weaning time.

LAMBING TIME

Births should be recorded and lambs tagged within 12 hours of birth. In the first few days of giving birth ewes should be kept in as small groups as possible so that good mothering-up of lambs can be achieved. All lambs should be weighed at weaning, at 90 days old. Lambs are then placed in feeding pens until they reach slaughter weight, approximately 45 kg's. At this stage replacement ewes are selected on their growth weight (Index), confirmation, type, and how they conform to the Dorper breed standard. Future rams are also selected at this time on the same

9

basis. About 33% of female lambs and 40% of ram lambs are selected. After cull ewe lambs are taken out (about 15%) and the balance of the ewe lambs can then be held for breeding or sold to other breeders. The cull ewe lambs and the remaining ram lambs can be sent to the butcher.

REPLACEMENT EWES

Replacement ewes can then be grazed on the veld until they are mated. During this period, they get as little help in the way of food as possible. They should be supplemented only to keep them from being stunted. Prior to mating, they should be inspected again to see how they have developed. Those that have not done well on their own should be put into pens and fattened for slaughter. This procedure is designed to maintain hardiness and adaptability within the stud and the breed. The remainder of the replacement ewes can then be presented to an inspector of the Zimbabwe Dorper Breeder's Association for inspection. This inspection will determine the type 3, type 4 and type 5 animals as well as a Zimbabwe Herd Book inspection.

Sale Rams

Rams are sold at 12 to 15 months. Always ensure that you vaccinate rams with Rev1 at 3-4 months of age if the rams are intended to be used for breeding. This will aid in the prevention of spreading brucellosis.

Important points to note;

- Vaccinations It is important to contact your local veterinary officer or your preferred veterinarian for advice for any vaccinations.
- Factors determining the economic viability of a sheep enterprise;
- The reproduction tempo of the flock.
- The growth rate of the lambs.
- Minimum mortality rates.

Below are examples of an Ewe's progeny and performance record and her family history. These cards are available from the Zimbabwe Dorper Breeders Association.

1. PROGENY CARD

PROGENY AND PERFORMANCE RECORD

DISPOSAL

Sold

Slaughte 1 5

в G D

4

11 mo

LAME

8 mc

91-0023 Tag No

STUD

REMARKS

Sold to A. Nother

Slaughtered 2001

Undershot jaw

4 Selection

SP

SP

P H T S HERD BOOK

5 5 3 4 4 Stud

5

4 5 1 LIVESTOCK

2. EWE FAMILY HISTORY



3. PERFORMANCE TEST RATIOS

The spreadsheet is designed to help breeders work out a lamb's Ratio or Index. This is a very important management tool when deciding which ewe lambs to keep and which mature ewes to sell as cull ewes.

WEANING PERFORMANCE RATIOS

HERDBOOK STATUS

15.1.91

LAMB NDENT

92-0051 м 89-0125

93-0012

SEX

м 90-0280

BIRTH TYPE

BIRTH

15.6.92

20.2.93

D

Single

108

SIRE

90-0001

W/WT

29

32

42

AGE

90

90

INDEX

110

124

10 TYPE OF BIRTH S, TW, TF LAMB': AGE DAYS LAMB TAG NO DATE EWE TAG NO EWE'S DUSTM RATIC WEIGH AT SAN AS AS , TW, T WEAN SEX M/F EAN BIRTH ONTH VEIGHT (k NDE) VI 149 B VI 150 B 27-Sep-20 28-Sep-20 0.00 F 30-1.06 12-33.0 100 26.36 1.03 27.1 127.4 VI 151 B VI 152 B 119.8 1-Oct-20 Δ104 30-97 25.53 24.55 м 96 1.06 122.17 30 VI 152 B VI 153 B VI 154 B VI 155 B VI 155 B VI 156 B 22.05 26.35 24.65 24.91 26.24 22.92 25.88 26.5 2-Oct-20 1.19 123.2 F 96 94 94 93 29.0 29.0 121.5 1.05 1 157 B 1 158 B 7-Oct-20 9-Oct-20 M 36.0 31.0 91 31.60 27.52 129.0 0.87 27.50 23.94 90 VI 159 B VI 160 B 14-Oct-20 18-Oct-20 18+ 23.0 31.0 90 90 20.42 27.52 1.05 21.44 25.32 F 100.6 0.92 18+ VI 161 B 28-Oct-20 L0131 18+ 30.0 90 26.63 1.05 27.96 131.2 F VI 162 B 18-32.0 90 28.40 29.83 M 162 B M 163 B M 164 B M 165 B M 166 B 18+ 18+ 18+ 0.00 F 18.64 20.42 18.64 21.0 23.0 19.57 21.44 24-Nov-20 L029 90 1.05 91.89 .005 90 30-Nov-20 30+ 18+ 21.0 90 90 18.6 167 B 1-Dec-10 25.0 VI 168 B 1-Dec-20 Μ Tw L025T 18+ 0.0 0.00 0.00 1 123.98 VI 169 B 3-Dec-20 Tw 30+ 90 22.19 26.41 Tw VI 170 B VI 171 B Μ Tw 30-28.0 90 90 24.85 24.85 1.06 26.35 22.87 123.69 3-Dec-20 Tw 3-Dec-20 Μ L022 18+ 28.0 0.92 107.3 VI 172 B Tw 30+ 21.0 90 90 18.64 104.14 3-Dec-20 Tw A103 M 172 B 3-Dec-20 F Tw Tw A103 30+ 14.20 1.19 79.35 VI 174 B 5-Dec-20 М 18+ 20.5 90 18.20 16.74 78.60

For any further information do not hesitate to contact the **Zimbabwe Dorper Breeder's** Association via e-mail on dorperzim@gmail. com. **Refer to ZiMunda** Farming Issue 5 for more information on sheep vaccines and vaccinations By Rose Van De Ruit.

Ratio or Index of a lamb above 100 is average and that below 100 is below average

I. Column 10 is arrived at by dividing the weaning weight by the age in days to give a mass-per day-of-age which is then multiplied by the average age at weaning for all the lambs in the same group to bring each record to a standard age.
 I. The adjusted weaning weight (col 12) is arrived at by multiplying column 10 by the correction factor (adjustment factor - see next table). These allow different ages of eves, different birth status and different rearing status.
 3. Column 13 - the Ratio or Index of each lamb is calculated by dividing the Adjusted Weaning Weight (Col 12) by the

rage Adjusted Weaning Weight of all lambs in the same group and then multiplying by 100

4. ADJUSTMENT FACTOR

These figures were worked out and applied by the late Mr Dirk Buitendag on his Dorper Stud which was situated on the Rivers Farm. Concession, Zimbabwe.

			Ewe Age					
			30-72 months	18-30 months	12-18 months			
		Single	1.00	1.05	1.16			
		Twin - Raised as Twin	1.19	1.26	1.37			
5	1BS	Twin - Raised as Single	1.09	1.14	1.25			
Ľ.	AN	Triplet - Raised as Triplet	1.38	1.45	1.56			
		Triplet - Raised as Twin	1.33	1.40	1.51			
		Triplet - Raised as Single	1.26	1.31	1.42			
		Single	0.87	0.92	1.03			
		Twin - Raised as Twin	1.06	1.13	1.24			
Σ	1BS	Twin - Raised as Single	0.96	1.01	1.12			
R	Ą	Triplet - Raised as Triplet	1.25	1.32	1.43			
		Triplet - Raised as Twin	1.20	1.27	1.38			
		Triplet - Raised as Single	1.13	1.18	1.29			
Σ		Single	0.97	1.06	1.19			
Å		Twin - Raised as Twin	1.08	1.17	1.30			
G	1BS	Twin - Raised as Single	1.02	1.11	1.25			
Ž	Ą	Triplet - Raised as Triplet	1.19	1.30	1.43			
ST		Triplet - Raised as Twin	1.14	1.25	1.39			
2		Triplet - Raised as Sinale	1.08	1.18	1.33			

SHEEP PERFORMANCE TESTING - ADJUSTMENT FACTORS

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Good Practices for Agriculture Tractor Tyres

By Neil Elliot, Tyre Zim

ith a competitive agricultural and industrial sector, there is a large demand for good quality tyres. The life of your tyres will, however, depend on the correct application and use – no matter how high the quality of the product.

It is essential to follow specifications to ensure that the tyres are used to their full potential. We therefore, look at the most important aspects to ensure you extend the life of your tyres. We believe that an informed consumer is a smart consumer.

APPLICATION

Ensure that the tyre is suited to its application. In other words, ensure that the tyres are the correct product for the machine, trailer or tractor. Tyres are tested, produced and guaranteed for a specific task and terrain, and if it is used properly, the tyre will function at maximum capacity.

TYRE PRESSURE

The most important maintenance feature is to always ensure that the tyre pressure is correct.

Tyres are designed to carry a specific weight based on the pressure of the tyre. The pressure of your tyres should be checked daily and one should use the recommended pressure specifically for that tyre.

Once the pressure of the tyres is too high, the tyres stretch and twist out of position. The tyres then do not absorb shock, which results in too much pressure on the rubber, and leads to the tyre being more susceptible to cuts and impact breaks, and the tyre will wear down more quickly.

If the tyre pressure is too high, it could not only damage the tyres themselves,

but can also cause soil compaction, which can be harmful to your fields.

It is equally harmful when the tyre pressure is too low and can cause unnecessary distension and warping of the tyres, as well as generate too much heat and cause the tyre shoulder to wear down. Lower tyre pressure can also cause higher fuel consumption.

All tyre pressure refers to the 'cold' tyre. This means that the tyre pressure must be measured while the tyre is cold. In other words, the pressure should be measured before the tyres start rolling or after the machine, trailer or tractor has been standing still for a while.

CARRYING CAPACITY

Ensure what the carrying capacity of the tyres should be. The weight of the vehicle – as well as the weight of the product intended for transport – should be determined. It is important that the machine, trailer or tractor should never be overloaded. Overloading is one of the biggest mistakes made by consumers.

FITTING AND REMOVING A TYRE

It is vital that the correct procedures should be followed when tyres are fitted or removed. Ensure that the vehicle is in a good condition and that the bead of the tyre is positioned correctly on the rim. As soon as the tyres have been fitted, ensure that the width between the tyre and the vehicle is correct – there should be equal spacing between all the tyres and the vehicle.

REMEMBER THIS

Check the tyres regularly for cracks, cuts and wear. When a tyre shows serious cuts and/or cracks, or is worn down more than 80%, the tyre should

12

be replaced immediately.

It is important to adopt proper driving habits. Avoid potholes, sharp turns, high speed and sudden braking. Reckless and wrong driving habits can shorten the lifespan of tyres significantly.

Natural elements like the sun, rain and hail can have a negative effect on tyres. It is essential to store your tyres correctly. Tyres should not be stored for longer than recommended period. Make sure that the tyres are not stored in direct sunlight, the storage area is clean, they are placed in a vertical position and avoid stacking tyres on top of each other.

Always buy the best product you can afford and ensure that you buy a brand that you can trust. It is also important to ensure that the tyres not only have a proper guarantee, but that an aftersales service is offered.

Tyrezim is the proud and exclusive wholesaler of agricultural and construction-range of Alliance tyres in Zimbabwe. Alliance is a brand that a producer can/may trust. Tyrezim representatives and salespeople are trained to answer all your questions and we offer excellent after-sales service.

ARTICLE REFERENCE:

Grainsa and RhinoReloaded (n.d.). Good practices for tractor tyre care. [online]. Available at: https:// www.grainsa.co.za/good-practicesfor-tractor-tyre-care_31_07_2018 [Accessed 23 Nov. 2021].

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Tips for Higher Yield in Maize Production

By Wendy Madzura, Head of Agronomy Seed Co Zimbabwe (Pvt) Ltd

he onset of the rains has brought with it a sigh of relief amongst farmers. Some are striving to establish rain fed summer crops while others have received reprieve on irrigation for the earlier established crops, especially maize and tobacco. The success of the crops hinges on factors such as planting time and heat units.

Planting time is a key ingredient to increasing productivity at farm and national level with yield loss above 100kg-120kg per hectare per each delayed week after November being recorded in maize production. Timely crop establishment promotes adequate use of resources such as the length and amount of rainfall in line with the seasonal forecast.
Heat units (Growing Degree Days) is an important factor in the growth rate of crops especially maize with 40% of the heat units being received within the first three months of the cropping season (Oct, Nov and Dec) (Seed Co farmers guide, 2018).

Profitable farming operations depend on the farmer's ability to select climate smart varieties that can withstand long periods of drought considering climate change. It should be coupled with the adoption of Good Agronomic Practices (GAP'S) and varietal selection discussed below.

Factors that influence **variety selection** include:

- Expected season quality (the length and amount of rainfall expected in a season),

- the altitude of a given area,
- the intended use of the crop (green mealie, silage, grain),
- the optimum plant population in relation to the yield target,
- the fertility programs and,
- the general crop management.

Farmers are encouraged to grow **"climate smart"** varieties from different maturity groups to mitigate risks of crop

failure or drought, that are associated with climate change. Companies such as Seed Co have stood the taste of time has continued to evolve in a bid to embrace new innovations and technologies that have resulted in improved, more adapted and climate smart genetics.

At planting farmers are encouraged to embrace advice **from agronomists/extension staff** in their provinces so that they can understand the Agro-Ecological Regions and "Start Right".



Plant population is important in increasing productivity because vield is a function of two things- yield per plant and yield per unit area. Farmers are recommended use plant spacing that is aligned to the variety, region and cropping plan. - In low rainfall areas like region four and for farmers with no irrigation, populations of 37 000 to 44 000 plants

per hectare are encouraged. This will reduce competition amongst plants for sunlight, water and nutrients which may result in low yields, however irrigated crops in those regions can benefit from higher plant densities.

- In high potential areas region one and two or under irrigation farmers can increase their plant population to optimum levels depending on the variety. The optimum plant population recommended for seed co varieties is 50 000 – 60 000 plants per hectare. During dry seasons or in



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low rainfall areas populations should be reduced to manage the competition for moisture amongst the crops.



Wendy Madzura demonstrating

section.

planting tips at a farmers training

In employing the practise of **dry** planting. farmers should make sure that the ground is not completely dry so that the seed will not be affected by low moisture. Planting depth is an important factor which affects germination, emergence and ultimately the plant population. The

recommended depth when dry planting is at least 5cm while planting when effective rains have been received (>35mm in three days) the depth can be adjusted to 4cm to 6cm. During planting, it is important for farmers to consider the size of the seed, soil conditions and seasonal forecast when selecting the planting depth. Farmers are encouraged to cover the

seed with a layer of soil that is twice the size of the seed as this promotes good germination and crop establishment. Deeper planting is encouraged for sandy soils.
Basal fertiliser application is important in the establishment stages of the crop for root development, and it must be applied before or during planting. Caution must be taken

to avoid direct contact of the fertiliser with seed as this may result in the destruction of the seed. In an effort to attain sustainable agriculture through the adoption of an integrated nutrient management approach, farmers are encouraged to incorporate organic matter or manure in their cropping programs to enrich the soil, improve drainage and soil structure. The manure should be fully decomposed to minimise introduction of diseases or insect pests.

During planting farmers should make sure that the seedbed is **weed free** especially for the first 10-12 weeks of a maize crop cycle as this is the period when more than 60% of the available nutrients are used/required by the crop. Generally, It is important to note that the pre-emergence herbicides should be applied on moist soil to control weed seeds. Contact agrochemical companies for more information on the effective use of herbicides.

Regular scouting is pivotal in insect pest and disease control as they can be managed before they reach threshold levels that may result in economic yield losses. In any cropping venture farmers should understand the problematic insect pests so that they can effectively manage them. In maize production **Fall Army Worm**, (FAW) African army worm and the stalk borer are amongst the most devastating insect pest with FAW having resulted in significant yield losses over the years. Effective control is hinged on timely identification (during the 1st and 2nd instar growth stage) of the insect pest and alternating insecticides with different modes of action.

Variety selection can also reduce the cost of disease management through the **selection of disease tolerant and resistant varieties** like the Grey Leaf Spot GLS, cob diseases and leaf blights. Seed Co has factored in varying degrees of resistance/tolerance to these diseases that have the potential to reduce yields.

In view of climate change, farmers must embrace **water harvesting techniques** that will enable them to conserve moisture for long periods and sustain their crops during periods of dry spells. They can use water or moisture conservation techniques like pot holing, tied ridges, wet ripping and mulching to reduce the rate at which moisture is lost.

Planting time is critical, farmers are should plant their crops on time to increase chances of obtaining high yields. They should always remember that there are a thousand reasons for low yield, but only 2 reasons for high yields - variety selection and Good Agronomic Practices (GAP's)

For more information on Water Harvesting by Sara Davies refer to ZiMunda Farming issue 12, fall armyworm invasion and control practices by Prince Matova refer to ZiMunda Farming issue 14 and Understanding Agrochemical Labels by Doug McClymont refer to ZiMunda Farming issue 24.

failure to control weeds during the first five weeks of the crop cycle leads to a 50% yield reduction. When using herbicides farmers are encouraged to consider the weed spectrum, future cropping plans, prevailing weather conditions and time of application (pre-emergence or post-emergence) for effective and efficient use of herbicides. A good example is when using pre-emergence herbicides.





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Sugar Bean Production- The Best Entry Point into Farming

By Francis B. Mapindani and Labyrinth Sibanda, Seed Co Vegetables

S tarting a farming venture is one accomplishment that we cannot deem to be easy. A clear strategy on how you invest in your business is needed so that you remain focused on the main prize which is profitability. A key element that should not be ignored when setting out a strategy for your farming enterprise is crop selection. This can be influenced by a number of factors which include; financial resource availability, planting season, irrigation capacity and the target market.

A crop with lower demand for start-up capital is a wise choice especially for new farmers who might have a restrained budget i.e., Sugar Beans.

Sugar bean production is easier on the pocket and is pretty lucrative with a good Return on Investment that hovers around \$2-\$3 for every dollar that is invested into the crop. The ability of the crop to be grown almost **dependently on rainfall** has an effect of cutting down on irrigation costs thus, helping tone down some costs. Farmers who wish to establish a fully rain-fed crop should regularly refer to seasonal forecasts from the Meteorological department to help them to make wise decisions. In the Highveld, plantings start beginning of January up to mid-February. In the Lowveld however, plantings can be carried out up to April.

Market options for sugar beans are pretty wide which make the crop quite profitable to grow commercially given that yield levels are maximised. High levels of yield can be attained by following **Good Agronomic Practices (GAPs)** and using the Right Seed. GAPs such as soil conditioning and good land preparation, supplying the right nutrition as well as keeping the field disease, pest and weed free can help push up yield to profitable levels. High plant populations of up to 200 000 plants per hectare are also necessary to achieve higher tonnages per hectare.

Utilisation of the **Right Seed** also plays a major role in the pursuit of yield maximisation. Use of certified seed is highly recommended for higher yield target to be achieved. Seed Co Vegetables offers 2 excellent red speckled sugar bean varieties which are

SC Gadra and SC Ukulinga. SC Gadra is the earlier maturing of the two aforementioned varieties taking just 65 days to reach physiological maturity. This makes it ideal for late season plantings as well as for production in regions with lower rainfall potential. Yield is in excess of 2t/ha for SC Gadra. **SC Ukulinga** on the other hand matures in 90-100 days. Its major strength is its high yield potential of up to 3t/ha.

NUA 45 is another sugar bean variety in the Seed Co Vegetables basket that is dominantly red with minimal cream speckles. This variety is biofortified with Zinc and Iron which



make it a good addition to a healthy diet. It is a 90-day maturity coupled with a potential 3t/ha yield make this variety quite economically important.

Seed Co Vegetables has Agronomists in all the provinces of Zimbabwe. Feel free to get in touch with them for any sugar bean enquiries, agronomy tips and after sales support. For quick WhatsApp enquiries, you can get in touch with the Digital Desk on +263 785 883 702.

Article By: Francis B. Mapindani Seed Co Vegetables Sales Agronomist – Mashonaland East 0778138897 and Labyrinth Sibanda Seed Co Vegetables Sales Agronomist – Mashonaland West & Mashonaland Central 0774664068.

AGRONOMY

Caring for your puppies with Animax Superior Vimbainashe Makombe, National Food Stockfeed

National food under their Stockfeed division has introduced a new range of nutritious dog food for your puppies and adult dogs. As a 2-part series, they share their technical expertise on caring for your puppies in this issue and looking after your adult dogs with Animax Superior in our 21st Issue

rom the moment puppies are birthed up until about 2 weeks of age, they should stay with the dam. During this period the puppies suckle from the dam; whose milk provides the best nutrition. Puppies must consume colostrum that is found in the dam's first milk within 24 hours after birth, as this contains essential antibodies that help the puppy fight diseases.

After a week to two weeks, chewing behaviour begins to develop in the puppy. You may notice your puppies trying out the dam's food. Do not take this to mean the puppies can now eat solids; the puppies at this stage still fully rely on the dam's milk for survival. Milk teeth will start to appear at 3-4 weeks of age, and puppies will increasingly show an interest in solid food. The dam will start to discourage her puppies from suckling, for them to be weaned at six to eight weeks. Therefore, the best time for puppies to transition to a new home is at 8 weeks.

HOW TO TRANSITION FROM THE DAM'S MILK TO SOLID FOOD

Moving your puppies to solid food should not be an overnight exercise. It should be done over several weeks. There is no fixed formula on when to start introducing solid food. We recommend that you introduce solid food between 3- 5 weeks. Animax Superior Puppy Kibbles has been designed to be used immediately following the dam's milk.

To introduce solid food, when the time is right, soak a few Animax Superior Puppy Kibbles in warm water, and let them soften over a few minutes. We recommend a few, as the puppy's digestive system needs to adapt from milk to solid food. Once the kibbles

18

soften, introduce them to the puppies. Feed this mixture 4 to 5 times a day for 5 to 7 days. Do not force them to stop taking the dam's milk, allow them access to the soaked kibbles and milk. Then in the following week, reduce the amount of warm water that you add to the kibbles so that the feed is drier. Feed this over 5-7 days again, and continuously reduce the amount of water added to the kibbles until the puppies are eating dry kibbles.

Continue to feed puppies in 4-5 meals per day until they are 10 weeks old. The stomach capacity of puppies is small and therefore they require frequent small meals. After 10 weeks, reduce the meals to 3 meals a day, until they reach approximately 50% of their expected adult body weight. Beyond this, the dogs can be fed one or two meals a day.

News Update

Beef School 2021

By Mario Befta, Zimbabwe Herd Book (ZHB)

Four hundred and fifteen people attended the 2021 ZHB Beef School and LRF Virtual Stockman School in Southern Africa. In Zimbabwe, 59 people attended the Beef School in person and 21 by virtual link.

The Zimbabwean event was well supported by service

providers. National Foods Limited was the prime sponsor once again; the company also sponsored the first ZHB Fertility Award won by Lianne Herbst. Other sponsors included Windmill, Surrey, Profeeds, Coopers, Feedmix and Polachem.

Local, regional and international presentations covered a very wide range of topics including the beef market (with presentations from SA, Namibia, Australia, USA and Brazil); grazing management; animal health (including a presentation on Theileriosis), genetics (with a presentation on optimum cow size) and the role and importance of industry support structures. The presentations generated a lot of



discussions and many pertinent take-home points. For the first time, the Beef School presented awards in Housekeeping, Performance Recorded and Fertility. See the last page 28 and 29 for detailed notes about the Awards and criteria's used to evaluate studs.

Bron	7e: 3 ^r	Place	Irene	Belinski	Bell-Inn I	Droughtmaster		
Silve	lver: 2 nd Place			Reed	Anivai Tuli and Reed Brahman			
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Fertility Awards at the Beef School 2021

With Lianne Herbst of LJ Simbrah Stud, Musuku Farm, Karoi

At the Beef Annual School, 2021 held in Bulawayo, the Zimbabwe Herd Book (ZHB) presented awards to cattle farmers under three categories: Housekeeping, Performance Recorded and Fertility. First place on the Fertility award was Lianne Herbst of LJ Simbrah Stud in Karoi.



A young bull with its dam figures of a ICP 376 and AFC 934 with 8 progeny.

ZIMUNDA (ZM): Having won first place of the fertility award; as a cattle farmer can you tell us briefly about the Simbrah and the farm's history?

LIANNE HERBST (LH): A Simbrah is a medium framed animal that is made up of a Brahman and Simmental. The fertility, milk ability and fast growth of the Simmental is complemented by the hardiness and heat tolerance of the Brahman. My mother Sheila Stidolph has always bred Simbra and won Cattleman of the Year in 1997, so the genetics of this herd have been well adapted and selected for Zimbabwean conditions. Although she ran it commercially, I was lucky enough to purchase half of her herd in 2011 and decided to go stud 6 years ago.

The nucleus of my herd is very hardy as the animals were moved around to different areas (land was an issue)

where they had to deal with conditions such as tsetse fly prevalence, herding and being kraaled at night. The cattle while under these harsh conditions were still culled on fertility and not producing a calf every year. Currently the herd is now run-on paddock systems, giant Rhode's grass pastures and crop stover.

LIVESTOCK

ZM: What are the fertility indicators that you focus on in your herd?

LH: A cow must give me a calf every year. We calve all year round but, do pregnancy diagnosis (PDs) three times a year. We wean our calves at 6 months and the cow needs to be pregnant when we wean her calf. I make a few exceptions on my heifers if they calve during winter and if their body condition is low. This year we have taken the heifers out with calves and supplemented them with silage to try and keep a better body condition which will get them pregnant before weaning their calf.

ZM: What was the criteria used for the Fertility award?

LH: The Fertility award was adjudicated across breeds based on the lowest Inter-Calving Period (ICP) and according to the following criteria:

- Limited to own-bred animals;
- Minimum of 10 cows with 2 or more calves; and
- Average Age at First Calving (AFC) less than 44 months.

118 studs had fertility records with average AFC and ACP of 44 months and 478 days, respectively. After applying the above



Photo taken in year 2020. The cow in picture with the calf was expected to be pregnant when we weaned her calf which was born on 19.7.20. She gave us her next calf 27.7.21 and a bull covered her on 16.9.21 – that is indeed a fertile cow. She has an ICP of 334 days and an AFC 31 months.

criteria, 60 herds had an average AFC and ACP of 38 months and 497 days, respectively.

To this regard, I received 1st place with 160 cows which have two or more calves, an average AFC of 32 months and an ICP of 391 days.

ZM: How is ICP calculated?

LH: ICP is the Inter Calving Period meaning, days are calculated from the time the cow gives birth to the time she has her next calf.

ZM: How do you gain reproductive efficiency (the low ICP) in your herd?

LH: To gain efficiency I feel that you need to have good record keeping, do PDs and cull any cow that does not give you a calf every year. The main factor is body condition.

ZM: Since AFC is the period that a female calf needs to reproduce for the first time, which major factors contribute to the shortness of this fertility indicator in your breeding herd?

LH: A heifer that calves early shows fertility and early maturing - it will be your best heifer to keep for your breeding stock as its progeny inherits this quality. In as much as we bull all year round, heifers are only bullied twice a year in two age groups. Those of similar age if not pregnant will be sold.

ZM: What are the key areas in fertility management?

LH: Purchasing the right bull -

- Check his Estimated Breeding Values (EBV),

- Evaluate information on his dam – if she had a calf every year and at what age did she have her first calf?

- If you are buying on a farm, ask they have records and,

Most importantly, get a vet to check if the bull is



This heifer will be bulled in Jan/Feb 2022 depending on her weight .



The two calves are from heifers who calved this winter 2021.

fertile. If you have a breeding season you should be able to put 1 bull to 25 cows or if it is a young bull to about 15 cows.

Nutrition - Our cattle are given winter and summer blocks throughout the year. We get burnt out most years, so having a stockpile of hay is essential.

Culling - any cow that does not give you a calf every year should be culled.

Keep records of your herd.

ZM: Any advice to fellow cattlemen on fertility management of a breeding herd?

LH: If you have a happy healthy cow there is no reason, she should not produce you a calf every year. Before you go into a breeding season make sure your cows are vaccinated, the bulls have been checked for fertility and they are in good condition.

For more information on body condition assessment, refer to ZiMunda Farming Issue 8, Management of Breeding Animals by Sekuru.

iCatchiZim for an Innovative Fly Control Solution

n summer, we all dread the agony exerted onto our pets and livestock by flies. Ears are reduced to a bloody mess as dogs scratch the sensitive fly-bitten skin, cattle and horse's eyes are irritated and weep as they become infected or even blinded by the pesky flies. Open wounds are invaded by maggots, which once they have gorged on the dead flesh, move onto live tissue.

A frightful picture to paint but, luckily to all animal lovers and livestock producers we have good news for you, all this misery and discomfort caused by flies can be avoided when you purchase the New Generation iCatchi Fly Trap.

This innovative and highly effective fly control solution has taken Zimbabwe by storm. The trap was designed and manufactured in South Africa where the idea was conceived out of the equestrian sector. The final product was patented, released and snapped up by several industries, all affected by flies.

iCatchiZim is the sole distributor in Zimbabwe. We proudly bring you this environmentally friendly and reusable product

as the most effective fly control solution on the market.

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3. Longevity - the green plastic body of the trap is UV protected, ensuring years of use even in the blazing sun, while the design prevents rainwater entering the bait chamber and diluting or deactivating the bait.

4. Efficiency - one female lays 500-2000 eggs in several batches (requiring a blood meal before being able to lay her eggs), every trapped fly dies without biting and reproducing offspring. So, there can be a dramatic reduction in the breeding population when sufficient traps are activated.







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Winter Cover Crops Economics

By Hugo Winkfield and Rob Jarvis



In previous issues of ZiMunda Farming Magazine we have reported what we have done within a group of 8 trial blocks on A.R.T. Farm dedicated to investigating the effects of winter and summer cover crops on soil health, crop husbandry practises and economics. In this article we will discuss some key information on the results to date as we transition from the winter cover crops to a couple of months of a summer cover crop mix, before we plant the summer sugar beans in January.

On the blocks where we grew winter wheat as a comparison nothing will be grown until the beans go in and on the fallow block, following last season's summer maize, no planting will be done as well will happen

again, until the beans are planted in January.

Based upon the **average daily gain** by the 100 steers grazed in the winter cover crops (shown in Figure 1 below), it appears that the growing of cover crops for extended periods during the year, using irrigation that otherwise might be used on winter wheat, may be money well spent. Admittedly the winter wheat was planted too late to achieve the normal high yields we usually achieve at A.R.T., but equally if the winter cover crops had been established a month earlier, we

> probably would have had at least two more grazings from the blocks. These cattle were compared with an equivalent number that received a daily supplementary feed of 2 kgs a day of maize meal and a similar amount of chicken litter. As temperatures rise in September, veld grass starts to grow and both groups benefitted from this.

The economics makes sense - the net profit, if we had sold the steers at the end of the



Figure 1: The graph shows average weights of the dryland group (yellow) and the cover crop group (dark blue). The vertical dotted lines mark the first and last date of grazing of the cover crop group.



33-day grazing period on the CC Cattle Sales and achieved the same prices that other similar stock fetched on that day, the output of the cover crops far exceeded that of the winter wheat. Remember, other than irrigation and the cost of seed there are virtually no other costs to growing winter cover crops, no fertilisers, no herbicides, only irrigation is expensive. The cattle rapidly learnt the ropes, running in to start grazing every day, feeding right up to the traffic barrier tape erected to show them where their allocated area was demarcated. One herdsman could control 100 steers.

With careful planning and management we will be able to commit more land to **regenerative cover crops**, phasing in the spring plaanting of the summer cover crops, grazing them right down and perhaps stretch the grazing period to 100 days or more. This could mean that with as little as 10 hectares of land dedicated to this practice each year, we could market many more steers than we currently do; starting earlier and having a phased off-take either weekly or fortnightly and at the same time using the opportunity and ready cash to restock with weaners when available. The beef cattle effectively become a 'crop'. Tightly controlled, weighed weekly and sold off as they reach target weights or when their weights plateau.

In the meantime, **the land is benefitting** from the principles of regenerative agriculture having full cover, biodiversity in crops grown, livestock playing their role and weeds kept under control by the ground cover. We then move into the summer plantings of a normal sugar bean crop in January 2022 without the challenge of having to keep the ground weed-free until that point. We should in fact be able to zero-till plant the beans and the cattle will have beefed-up considerably.





Simon Hodgson of AGT Seeds explains the advantages of a healthy rhizosphere on cover plants

For more information on regenerative agriculture cover crops, refer to ZiMunda Farming issue 20 and 22 - Regenerative Principles in Cattle and Fodder Crops by Rob Jarvis and ART Farm Regenerative Agriculture Open Day by Sandi Roberts, respectively.

Let's see how it goes, but so far so good.





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Fish Farming an Entrepreneurial Opportunity

By Tanaka Calvin Chaza, FarmHut

The demand for fish as a food source simultaneously grows with the rise in human population. The fish available natural resources are not keeping pace. Even in carefully managed wild fisheries, the combination of climate change, pollution, and the pressure from fishermen further extends the unpredictable variations in the supply of fish. According to the United Nations Food and Agriculture Organisation (FAO), roughly 32% of world fish stocks are overexploited, depleted, or recovering hence in need of being urgently rebuilt.

Fish farming exists to address this fundamental problem, it is somewhat hailed as a solution to the overfishing with the carp, catfish, salmon, and tilapia as the important species produced. Over time the fish farming industry in Zimbabwe has gained momentum, farmers now rear fish in their farms or backyards. The nation has gone past the era of catching fish in ponds or streams to sell them at the local market. This way output and revenue are controlled.

TILAPIA

Tilapia is the most reared fish in Zimbabwe. Its name is the generic name of a group of cichlids endemic to Africa. This group consists of three aquaculturally important genera Oreochromis, Sarotherodon, and Tilapia. Several characteristics distinguish these three genera, but possibly



the most critical relates to reproductive behaviour. All tilapia species are nest builders; fertilised eggs are guarded in the nest by a brooding parent.

Species of both Sarotherodon and Oreochromis are mouthbrooders; eggs are fertilised in the nest

but parents immediately pick up the eggs in their mouths and hold them through incubation and for several days after hatching. In Oreochromis species, only females practice mouthbrooding, while in Sarotherodon species either the male or both male and female are mouthbrooders.

Physical characteristics

Tilapia are shaped much like sunfish or crappie but can be easily identified by an interrupted lateral line characteristic of the Cichlid family of fishes. They are laterally compressed and deep-bodied with long dorsal fins. The forward portion of the dorsal fin is heavily spined. Spines are also found in the pelvis and anal fins. There are usually wide vertical bars down the sides of fry, fingerlings, and sometimes adults. Optimal water temperature: 25 to 29 degrees Time to reach half a kg: 5-7 months

CATFISH

These are a diverse group of ray-finned fish. Named for their prominent barbels, which resemble a cat's whiskers. Despite their name, not all catfish have prominent barbels or "whiskers". Members of the Siluriformes order are defined by features of the skull and swim bladder. Catfish are of considerable commercial importance; many of the larger species are farmed or fished for food. Many of the smaller species, particularly the genus Corydoras, are important in the aquarium hobby.

Physical Characteristics

Most catfish are bottom feeders. In general, they are negatively buoyant, which means that they will usually sink

rather than float due to a reduced gas bladder and a heavy, bony head. Catfish have a variety of body shapes, though most have



a cylindrical body with a flattened ventrum to allow for benthic feeding.

A flattened head allows for digging through the substrate as well as perhaps serving as a hydrofoil. Some have a mouth that can expand to a large size and contains no incisor teeth; catfish generally feed through suction or gulping rather than biting and cutting prey.

Optimal water temperature: 25 to 29 degrees Time to reach half a kg: 8-10 months

SALMON

Salmon is the common name for several species of fish in the family Salmonidae (e.g., Atlantic salmon, Pacific salmon). They can be found from both wild and farmed sources. The most commercially available is Atlantic salmon which is farmed.

Time to reach half a kg: 16-20 months

For more information on Farmhut: Contact +263773442311

-

2021 Beef School Awards

Housekeeping Awards

This Award was adjudicated by the ZHB staff and was based on communications, timeliness and completeness of returns.

10 points each were awarded for the following 7 criteria: Communications; Birth Notifications within 60days; Sales and Transfers Notifications within 30days, Completeness of Submission of DNA Samples; Return of Levy Lists; Levy Payments and Inspection Returns.

Completeness of Performance Recording Awards

The BreedPlan "Completeness of Performance" herd rating system assesses the quantity of pedigree and performance information that has been submitted to BreedPlan by an individual seedstock herd.

This assessment is restricted to Breeds for which Breed Runs (i.e. genetic evaluations [EBV's]) have been performed and this year, only Tuli (since 2010) and Brahman herds (commencing in June 2021) were eligible for this Award.

The "Completeness of Performance" Star Rating provides both seedstock and commercial producers with an assessment of how much performance data has been submitted to BreedPlan by a herd.

The Star Rating for a herd is calculated based on the proportion of calves within the herd born in a fixed 5-year period for which performance data has been submitted for each trait. Different criteria are used within breeds, depending on the traits for which EBV's are calculated within the breed.

Each herd receives a Star Rating on a 0-5 scale (including half stars) that summarises the relative "completeness" of their performance data.

Herds were assessed on the following criteria:

Animal Details (birth date, sex, sire, dam)	60 points
Fertility traits	40
Birth traits	40
Weight Traits	60
Total	200 points

The table below notes the description of each star rating.

Star Rating	Description
E	Herds with a Star Rating of 5 are Gold standard. Complete performance
S 16E points	information has been recorded on BreedPlan for all animals across all traits
> 165 points	for which EBVs are available.
4 or 4.5	Herds with a Star Rating of 4 or 4.5 are Silver standard. Comprehensive
136 – 165	performance information has been recorded on BreedPlan for most animals
points	and traits, but less performance data is recorded than for a 5 Star herd.

3 or 3.5	Herds with a Star Rating of 3 or 3.5 are considered Bronze standard.
106 – 135	Performance data is recorded on BreedPlan for a reasonable number of traits
points	or animals, but less performance data is recorded than for a 4 or 5 Star herd.
	Herds with a Rating of 2.5 or less are recording information on BreedPlan but
2.5 or less	not for all animals or traits. Less performance data is recorded than for a 3, 4
< 106 points	or 5 Star herd.

Tuli

14 Tuli herds participated in recent breed runs with an average Star Rating of 2.6 (see below). Ten herds had Star Ratings below 3, while three had Star Ratings between 3 and 3.5 and one herd had a Star Rating of 4.5.

Star	No	No	Animal	Fertility	Birth	Weight	Total	Star
Rating	Herds	Animals	Details	Traits	Traits	Traits	Score	Rating
All herds	14	72	55	2	30	13	101	2.6
1.0 - 2.5	10	50	51	0	28	4	84	2.1
3.0 - 3.5	3	86	58	6	31	27	121	3.3
4.0 - 4.5	1	197	59	14	40	42	155	4.5

Brahman

60 Brahman herds participated in recent breed runs with an average Star Rating of 2.1 (see below). Fifty-six herds had Star Ratings below 3, while three had Star Ratings between 3 and 3.5 and one herd had a Star Rating of 4.0.

Star	No	No	Animal	Fertility	Birth	Weight	Total	Star
Rating	Herds	Animals	Details	Traits	Traits	Traits	Score	Rating
All herds	60	28	55	1	25	4	84	2.1
1.0 - 2.5	56	28	55	1	25	2	82	2.0
3.0 - 3.5	3	23	52	5	29	30	116	3.2
4.0 - 4.5	1	54	58	22	24	36	139	4.0

Fertility Awards

Fertility was adjudicated across breeds based on the lowest inter-calving period (ICP) and according to the following criteria:

- Limited to own-bred animals;
- Minimum of 10 cows with 2 or more calves; and
- Average Age at First Calving (AFC) less than 44 months.

118 studs had fertility records with average AFC and ACP of 44 months and 478 days, respectively. After applying the above criteria, 60 herds had average AFC and ACP of 38 months and 497 days, respectively.

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