



August 2018

39th Edition

Lionel's News

Dear Business Partner

As our valued customer we give you access to interesting and helpful articles that will assist you in getting the most out of your farming business. In this month's issue we start off with an article on PigChamp, which is a data software program that can assist producers in understanding the benefit of reviewing the data on a gilt's performance in her first parity and how that is linked to future performance. Then we move on to dairy farming where we look at different types of teat dips and how to choose the best option for your farm. We also give you an article on why SA is a world leader in effective lucerne hay grading. Then we included a short abstract on an article of the discovery of a new species, *Sterptococcus bovimastitidis* – follow the link to get the full article. With the launch of the new Kalvolac CAIR milk, we also added some Q&A about this exciting new product.

In our Lionel's Vet Staff news, we commend Daida Gupite for 10 years of loyal service to our company and would like to thank her for her work ethic and the example she is to all her peers.

We hope that you also find the products advertised useful. You are welcome to contact the sales representative in your region for any further details on advertised products. All contact details are included at the end of this newsletter.

Thank you for your continuous loyalty. Feel free to contact us if you have any specific topics you would like us to cover in future editions. Your inputs are welcome.

Many thanks to all our loyal customers. Going forward, we hope to bring you more exciting products/services and the best possible customer experience available.

Visit our website: WWW.LIONELSVET.CO.ZA

e-mail: info@lionelsvet.co.za ; Tel: (021) 932 2019

DO ALL GILTS LEAD THE WAY?

Reviewing the data on a gilt's performance in her first parity can help producers understand possibilities for her future performance.

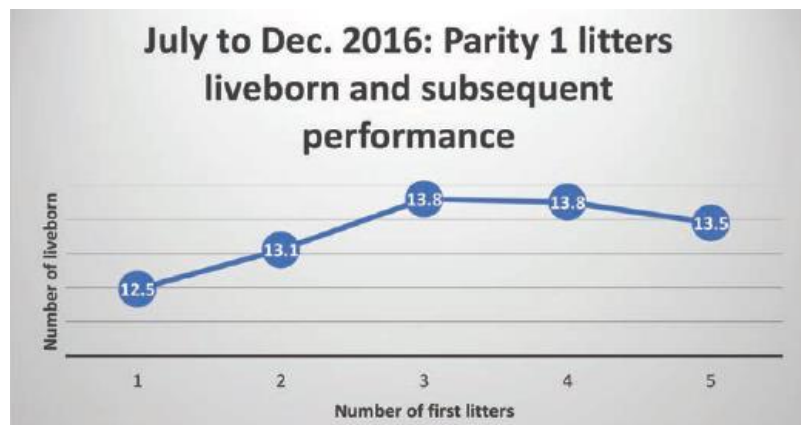
Originally posted on Pigchamp Website (Pigchamp Benchmark Spring addition 2018:
<https://www.pigchamp.com/flipbooks/benchmark-magazine/2018/USA/index.html>

Written By: Sasha Gibson

Using gilts' performance to gauge future health and production makes sense. The gilt and litter (parity) 1 journey become the building blocks of the parity 2, parity 3 and parity 4 sow.

Gilts are 20 percent of our herd inventory at any time and equate to our third-highest operational cost, following feed and labor. Gilt performance is often "lumped in" with that of sows when considering operations on a week-by-week basis.

Producers have many ways to raise a gilt – researchers like George Foxcroft, Kenneth J. Stalder and Robert Knox have all identified techniques to maximize a gilt's lifetime performance. Each farm does gilt entry slightly differently, based on some of the research principles outlined by the universities.



Note: There are 80,362 first litter sows represented in this graph.

Producers make significant investments in rearing gilts. Farmers design standard operating procedures with a variety of animal factors, such as genetics, age at purchase, health, age at breeding, and boar exposure plan, in mind. Producers generally target a 47 to 50 percent sow replacement per year. Pig production, however, is also very dynamic. Producers often have to modify the gilt flow from the way it was intended due to PEDv, PRRS, mycoplasma elimination or other disease challenges. As a result, the animals may experience overcrowding and deviation from the planned "gilt experience." For example, overcrowding can lead to more aggression, or less acclimatization to the sow farms before being bred. Producers are striving for gilts to have at least four productive litters (Hoge et al., 2011). If not carefully monitored, unplanned challenges can affect the future sow farm performance. If not segmented by parity, weekly production reports can hide poor gilt performance – it is easy to overlook an ongoing gilt problem. Often, producers review the number of bred gilts. If those figures are on track, we consider the gilt program good – but is it?

When reviewing reports, consider the animal's age – is the gilt flow running as designed? If the farm is making target but the average bred age has shifted – either up or down – from the planned age, long-term effects could include fewer total born, lactation failure and longevity issues. Are the gilts cycling at the predictive days after their entry into the farm? The plan of entry (weekly or monthly) should have a predicted number of heat no service (HNS) events associated with it. What is the target for your farm? If the number of HNS events moves,

why did this happen? Such shifts indicate a change to the production flow before the gilts were even bred! Commonly, producers use parity reports to evaluate gilts. This report details the performance of each parity over a certain time period. You might, for example, want to consider how parity 1 sows cycled post-weaning compared to parity 2 sows. A weekly performance trend analysis filtered by gilts (parity = 0) and sows (parity 1+), however, will give you the ability to address problems more quickly.

Productivity analysis is a newer report that tracks the number and percentage of gilts that entered the farm but did not get bred and so left the farm. This report also tracks the number of gilts that were bred and then left the farm. This data is important for evaluating gilt performance.

Data from over 300,000 gilts in 2017 shows the variation across operations in the percentage of gilts that entered and left the farm before they were bred. (PigCHAMP users across North America provided this data.) The reason for this gilt removal could be death or cull. These gilts were moved, tagged, vaccinated and fed. Ultimately, however, they were not bred. On average, producers removed about 6 percent of gilts before they were serviced. (See the table to the right.) These are the “lost-dreams” gilts. After breeding, the farms in the database had an additional 6.7 percent of gilts leave the barn, either as a dead or cull. All of these animals incurred breeding costs prior to removal. (See the table below.) These are the “broken-dreams” gilts. These data sets are not a cohort. Rather, they are a moment in time. Overall, however, of the about 300,000 gilts that came into the nine

2017 AVERAGE PERCENT REMOVED BEFORE BREEDING	
Database	Percent removed before service
A	3.6
B	4.1
C	7.0
D	6.8
E	8.0
F	7.9
G	5.0

Note: There were 303,471 gilts entered.

2017 AVERAGE PERCENT REMOVED AFTER BREEDING		
Databases	Gilts first served	Percent served and removed
A	44,213	4.9
B	55,759	6.3
C	101,643	9.4
D	5,251	8
E	27,226	6
F	33,950	6
G	24,361	6.2

Note: 292,403 gilts are represented in the chart above.

databases or were bred on the farms, approximately 13 percent did not farrow. The productivity analysis can quickly and easily show how your farm’s gilts are performing. You can use this data to evaluate planned and non-planned management changes to the gilt flow.

Another area on the productivity analysis report is the first service to removal interval for gilts. This figure indicates how long the served gilts are on the farm, on average, before they are removed. The average entry to removal service is 78 days, according to the 2017 data. Of the seven databases evaluated, one operation had an entry to removal rate of just 44 days, while the highest was 102 days. Ryosuke Iida et. al (2015) found that lifetime performance was linked to performance in parity 1 sows. Considering that all parity 1 animals should not stay with the herd but, rather, that some should be pushed out is a different way of thinking. After all, the cost to get the parity 1 in the herd is high. But the cost of their sub-par performance may be higher. Are these gilts the animals that are more likely going to cost us in other areas too? Subsequent litter performance data should make us pause. Based off the correlation between lower total born in the first litter and born alive in all farrowings, should a parity 2 sow be culled if a new gilt can replace her in a cost-effective way?

This dataset uses total born at first farrowing and examines gilts farrowed between July and Dec. 2016. On average, 14 percent of the parity 1 gilts had less than a total of 10 piglets born. (This figure ranges from 11 to 17 percent for each farm). Using the liveborn numbers over the subsequent farrowings, can we make predictions of lifetime performance? (Note: this relationship is specific to total born and liveborn, not liveborn and liveborn, or total born and total born).

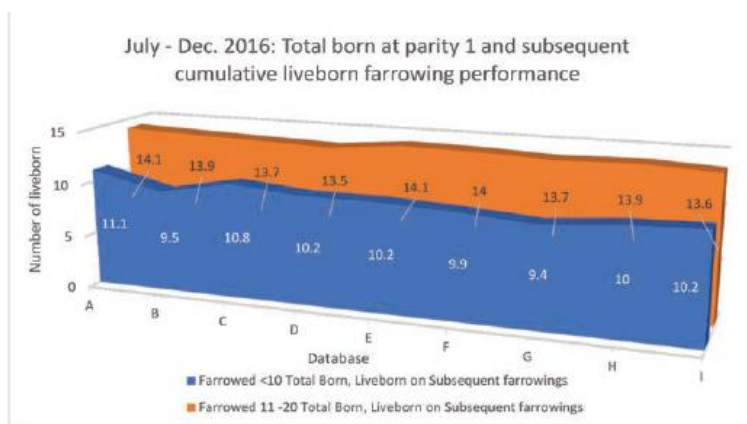
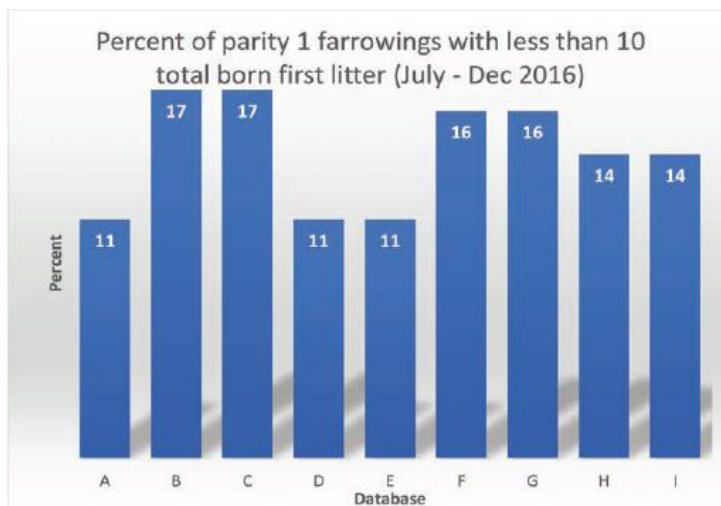
The subsequent liveborn over the 18 months following the first litter (parity) shows what has happened so far over the sow's lifetime (five litters). Litters with total born above 20 were excluded from the analysis.

Gilts that had fewer than 10 total born in their first litters had 10 or fewer liveborn pigs in their first litter farrowing, as expected. Subsequently, however, these gilts produced an average liveborn of 10.1 in their next farrowing events. Sows that had 11 or higher total born in their first farrowings had liveborns that averaged 13.8 piglets in their subsequent farrowing events. By Dec. 2017, some of the sows in the study had five litters.

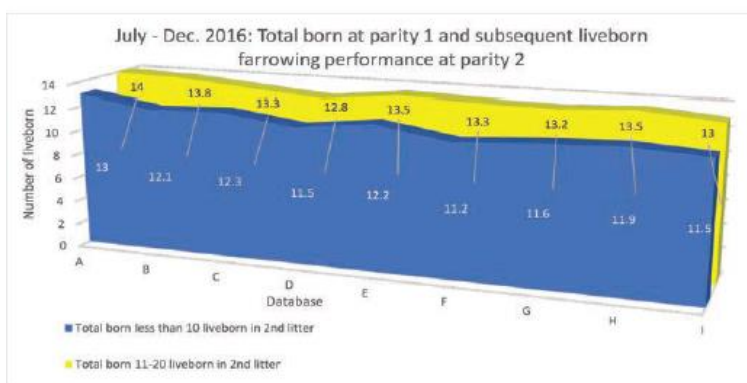
The data suggests that total born in the first parity may be predictive of future farrowing liveborn events. Focusing on the data from just the first and second litters, we see a 1.5-pig difference on born alive at their second farrowing, when using total borns less than 10 on the first litter (parity 1) as a predictive value. On average, females that had less than 10 total born in their first farrowings had 11.9 born alive in their second farrowings. Sows that had 11 to 20 piglets in their first farrowing averaged 13.4 born alive in their second parities. Low total borns in the first parity seem to be a predictor of less liveborn pigs over the sow's life.

After reviewing this data, some questions arise. Are the parity 1 females that have fewer total born more likely to leave the farm sooner than their peers? Are these animals more likely to be treated, or at risk for, being returns, late weans, mortalities, etc.? Do they lead us down the wrong path in more ways than just born alive?

If your current gilt supply and source are stable, and production has been in control, analyzing subsequent litter performance information on your farm may enable you to make the sow herd more efficient. Removing poor performers may allow other key performance indicators, such as wean to service intervals, return rates and mortality rates, to be improved. These gilts that lead with high total born and liveborn may ultimately be the "future-dream" gilts.



Note: There are 443,990 farrowing events noted in the chart above.



LIONEL'S
VETERINARY SUPPLIES

How to choose the best teat dip for your farm?

Many teat dips are now available on the market: Iodine dip, chlorhexidine, lactic acid, chlorine dioxide. Concentrate form, RTU, 2 components? Spray, dip or film forming agent?

This article presents the key points to check to get the best hygiene protection on your farm before and after milking.

- **Before milking: “Proper cleaning sets the basis of successful disinfection”**

Before milking, the product to choose must have excellent cleaning properties:

Using a product with solely disinfecting activity is not recommended as the cows are coming from the barn, a less than perfect environment in term of hygiene.

This is also aligned with the following principle: Clean first before you disinfect. Germs can hide underneath the dirt and other material covering the teat skin. Therefore, they can remain not affected by the disinfectant. Dirt and organic material can also reduce the germ-killing ability of some disinfectants. Take iodophors or sodium hypochlorite for instance: a study has shown that they lose their disinfecting power in presence of organic matter (reference 1)

When it comes to skin (teat skin or hand skin) it is a rough surface, with cracks and creases. It is easy for bacteria to adhere and multiply. Applying disinfectant without cleaning first will not affect these bacteria, deeply imbedded in the creases and protected by a layer of dirt. A pre-milking disinfecting spray applied before milking will reduce the number of surface-level pathogens on the teats but not necessarily the bacteria that hide in the creases of the skin. What does remove these imbedded pathogens is a proper teat cleaning method. The agitation created during the teat cleaning process dislodges the bacteria from the cracks and surfaces of the teats, enabling them to be removed when the teats are wiped off before the clusters are attached. A pre-milking foaming teat solution penetrates well in the cracks of the skin, therefore removing the imbedded bacteria.

Is a one-step cleaning and disinfecting process acceptable?

Yes! Make sure the product has excellent cleaning properties and fast acting disinfectant. E.g., the fast-antibacterial efficacy of lactic acid has been demonstrated in both anionic and non-ionic surfactant-based cleaner formulations, at a concentration inferior to 3%, within 30 seconds contact time (reference 2).

The additional benefit of using a good teat cleaning agent before milking is that it keeps the teats cleaner in the long term as well.

How do you recognize a good pre-dipping cleaning product?

The result, of course, but also the foaming properties of the product. If the product foams well, and the foam is persistent (in the foaming cup) this is a good indication that it contains the effective ingredients to detach the dirt from the skin.

Milk safety is always important

Pay attention to the possible residues that you can find in milk. Let's take the example of iodine: it has been shown that iodine applied before or after milking (especially by spraying) increases the iodine content in milk. Thus, extra precautions must be taken, especially now that residues are more and more a concern.

- **Post-milking teat disinfection**

Many options are available for post-milking disinfection in term of active substances as well as many forms of application, such as dipping or spraying, manually, semi-automated or fully automated...

How to choose the ideal solution for your farm?

Teat condition comes first

At CID LINES, we believe that soft skin and smooth teat end are the priority to prevent infections and bacteria growth. Teat end and teat skin are constantly solicited during the lactation: impact of the milking machine, important vacuum, versatile weather conditions, etc. That's why the first question to answer before selecting a teat dip is: are the teat ends and the teat skin in a healthy condition? Dry skin and teat end showing hyperkeratosis crave for an extra teat conditioner. A product formulated 10 000ppm classical Iodine for instance, can not contain enough emollients to compensate the drying effect of the iodine present in the product. One should not forget that every drug (every disinfectant) is toxic at a certain dose. Therefore, when the skin condition is under challenge, high emollient formulations, combined with a gentle disinfectant for the skin are highly recommended. Example: skin has a good tolerance for chlorhexidine based or lactic acid-based teat dips.

Consider the viscosity

The product viscosity has an impact on the duration of the contact between the skin and the product: the skin will benefit from an extended contact with a gentle and hydrating formulation, whereas it will suffer from an aggressive formulation. Consequently, the highly concentrated formulation based on potential irritative disinfectant molecule should be applied by spray (offering a shorter contact time).

Film forming teat dips based on polymers is a third option, offering a physical barrier especially recommended in case of challenging environment.: the dirt sticks on the film, not on the skin, it is then much easier to remove at the next milking.

Weather specific formulation

Specific weather condition requires specific formulation: this is the case of winter conditions (temperature below zero degree Celsius and chilled wind). In this case, products that dries fast are more adapted (for instance, alcohol-based formulation).

What are the options when skin condition is of good quality? Oxidizing ingredient, such chlorine dioxide or iodine can be recommended to offer their large spectrum of activity, protecting against bacteria and virus (responsible of warts) and algae (such as Prototheca).

Do not forget the risk of residual


If the teats are well prepared before milked, the risk of residues is negligible. As mentioned above, iodine formulation applied after milking by spraying have been associated to increased iodine content in the milk. Chlorine dioxide, present in the form of a solubilized gas, is less prone to residues in the milk. One should not forget that milk is one of the most important food components for human and particularly for infants.

References:


1. Neutralization of the activity of eight disinfectants by organic matter.
[Gélinas P, Goulet J.](#) J Appl Bacteriol. 1983 Apr;54(2):243-7.
2. Opinion on the application for approval of the active substance:
L(+) Lactic acid
<https://echa.europa.eu/documents/10162/7e1ee854-31fe-4cb3-b0bf-884d3398c693>




Post-dip comparison



Kenostart™
The premium iodine teat conditioning dip.
Based on an active iodine complex. Registered as veterinary medicine in 13 E.U. countries for mastitis prevention. Economic in use.



Kenocidin®
For smooth and silky soft teats!
Improves the skin condition considerably. Based on chlorhexidine and mint.







Kenolac™
The first patented fly-repellent teat dip!
Offers protection against flies and sunburn. Based on lactic acid. Ideal for organic production.





Bacteriacidal actions


Teat conditioning

Teat skin evaluation scores:


Score 1	Score 2	Score 3	Score 4
Teatskin is smooth, free from scales, cracks or chapping.	Teatskin shows some evidence of scaling.	Teatskin is chapped. Some small warts may be present.	Teatskin is chapped and cracked. Redness, indicating inflammation is present. Numerous warts may be present.
			

Teat end evaluation scores:


Score 1	Score 2	Score 3	Score 4
Teat end sphincter is smooth, with no evidence of irritation.	Teat end has a raised ring.	Teat end sphincter is roughened with slight cracks, but no redness is present.	Teat end sphincter is inverted with many cracks, giving a "flowered" appearance. Teat end may have old but healing scabs.
			



Kenomix™
Kenomix + activator is a chlorine dioxide 2-components teat dip.



Kenostart SD™
Iodine spray
Based on an active iodine complex. Registered as veterinary medicine in 13 E.U. countries for mastitis prevention. Economic in use.

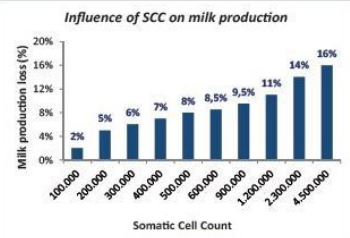


Kenocidin® SD™
Chlorhexidine and mint spray
Improves the skin condition considerably. Based on chlorhexidine and mint.

Bacteriacidal actions

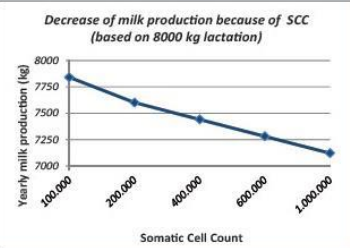
Teat conditioning

Influence of SCC on milk production



Somatic Cell Count	Milk production loss (%)
100,000	2%
200,000	5%
300,000	6%
400,000	7%
500,000	8%
600,000	8.5%
700,000	9.5%
800,000	11%
900,000	14%
1,000,000	16%

Decrease of milk production because of SCC (based on 8000 kg lactation)



Somatic Cell Count	Yearly milk production (kg)
100,000	8000
200,000	7750
400,000	7500
600,000	7250
800,000	7000
1,000,000	6750

Why SA leads the world in effective lucerne hay grading

By Annelie Coleman

June 9, 2018

Lucerne is one of the most important hay crops in South Africa, but differences in quality can have a marked effect on livestock performance and profitability, especially in the dairy industry.



The value of including lucerne hay in livestock diets depends on the hay's nutritional value.

Annelie Coleman asked agricultural economist Walter van Niekerk and lucerne specialist Dr Gerrie Scholtz about the benefits of the National Lucerne Trust's lucerne grading system.

Lucerne hay is used in all livestock production but is a particularly valuable resource in the dairy cattle industry. However, the quality of the feed is directly related to nutritional value. For this reason, the National Lucerne Trust's new lucerne hay quality index (NLQI) has become an indispensable tool for ascertaining the quality of lucerne, according to Walter van Niekerk, an agricultural economist at the University of the Free State.

Steady improvement

Also known as alfalfa, lucerne (*Medicago sativa*) is a perennial flowering plant in the pea family Fabaceae. It was one of the earliest crops cultivated specifically for animal feed and was grown for

that purpose by the ancient Greeks and Romans. By the time it was introduced into Germany in the 1500s, hybridisation had already occurred, resulting in, among others, *M. falcate*, an animal fodder crop tolerant to cold, drought and resistant to disease. More hybrid species followed, including the French or Mediterranean-type, Provence, which is of great importance in South Africa. Today, lucerne growers have a wide variety of cultivars to choose from and base their selection on factors such as dormancy or activity rating, crown height, fit for purpose (hay production or grazing), disease resistance, insect pest Lucerne resistance, and forage yield. Plant breeding efforts use scientific methodology and technology to develop improved varieties. Lucerne hay is commonly included in the diets of lactating dairy cows as it is a rich source of protein and energy. It ferments quickly and has a wide mineral profile while providing the fibre required for rumen health and butterfat synthesis in milk. “Adding lucerne hay to dairy cow diets improves the digestibility of the total diet, resulting in increased dry material intake and subsequent higher milk production,” explains Van Niekerk. How effectively it does this, though, depends on the quality of the hay. Harvesting, climate, soil conditions, cultivar and moisture content during storage all influence this quality. Differences in the quality of lucerne hay can also hamper the accurate formulation of ruminant diets. Although some indicators of hay quality are obvious, such as colour and leaf content, a significant percentage of the nutritional value is not visible to the naked eye. A study conducted by Dr Gerrie Scholtz, a researcher at the National Lucerne Trust of South Africa (NLT), has shown a marked variation in the chemical properties of local lucerne hay. Scholtz compared the chemical properties of different types of hay with milk production and found a clear correlation between acid detergent fibre (ADF), ash and lignin, and milk production. Lignin binds the cells, fibres and vessels that make up wood and the elements of straw. ADF, which includes lignin, cellulose, silica and insoluble forms of nitrogen, is the highly indigestible part of forage.

Warm and dry conditions

Over the millennia, lucerne has developed into a highly successful cultivated crop. This success is due to the plant’s efficient root system and its symbiosis with the nitrogen-fixing *Rhizobium* bacteria, which reduces the plant’s dependence on soil nitrogen. The strongly developed taproot enables the plant to access water reserves as deep as 6m, allowing it to survive a long drought. According to Scholtz, the relatively dry and warm conditions, good irrigation water quality and good soils in the Northern Cape are ideal for the production of high-quality lucerne hay. As a result, lucerne is produced on a large scale in Jankempdorp, Hopetown, Jacobsdal, Douglas and elsewhere in the region. Traditionally, the quality of lucerne hay was determined by measuring its protein content, but research has since shown fibre and digestibility to be more important. This has resulted in the development of the world-class NLQI grading system, managed by the NLT.

Lucerne exports

South Africa’s lucerne hay is sought after globally due to its exceptional quality and effective grading. It is exported to the United Arab Emirates, Dubai, Oman and other countries. China, too, recently began importing South African lucerne hay. Scholtz estimates that about 150 000t are exported annually. Prices are determined by supply and demand as well as exchange rates. The hay is compressed into high-density bales to save on transport costs. The US is South Africa’s main competitor in the global lucerne market. Lucerne is produced on a large scale in the western parts of the country and China is its closest export market.

How the grading system works

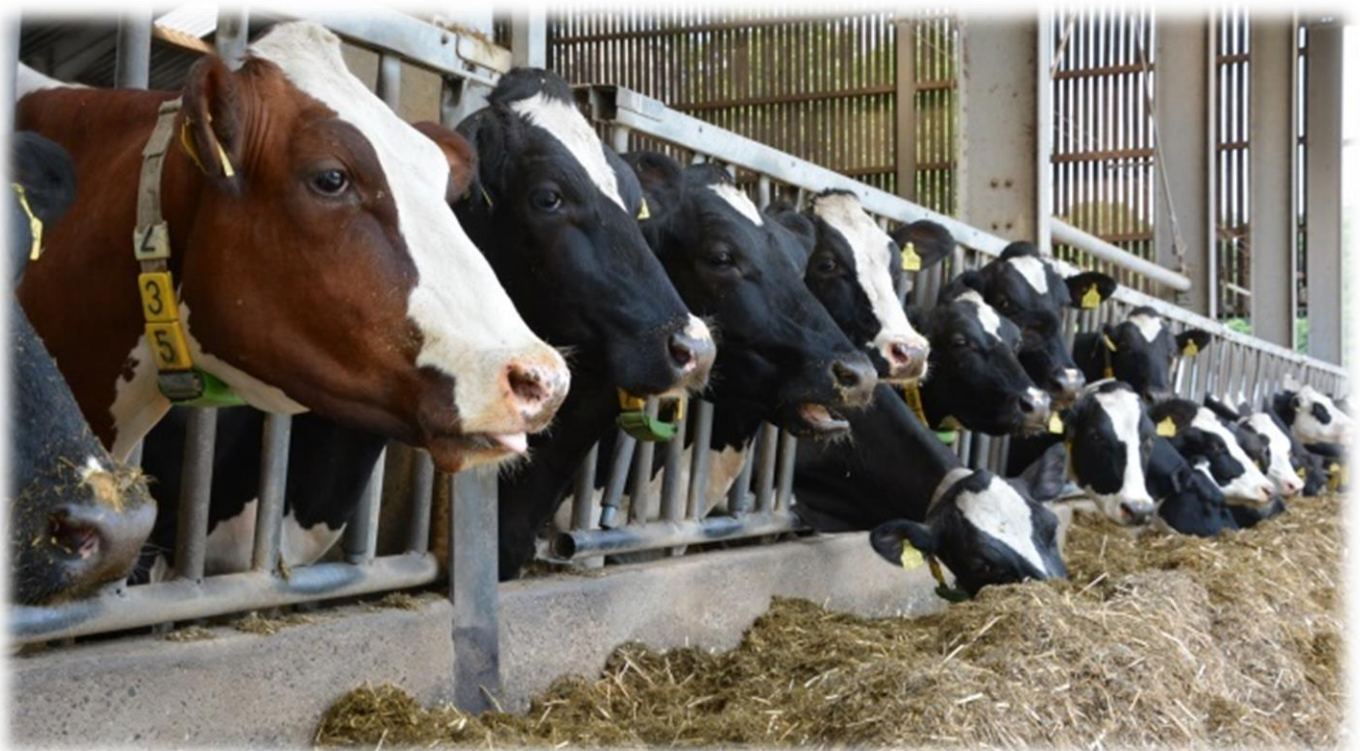
Local lucerne prices are also determined by supply and demand. At the time of going to print, the price for Grade 1 (NLQI) was hovering around R2 150/t, and the price for prime grade was about R150/t higher. These prices exclude transport costs. The NLT's new grading system involves analysing lucerne samples using near-infrared spectrophotometry. Once the hay is baled, a representative sample is collected from the bales using a standardised collecting apparatus. The samples are then analysed by a qualified lucerne hay grader to determine the ash, lignin and ADF values. An NLT lucerne hay grading certificate is issued with an index that indicates the grade of the hay as well as the proportion of the various nutritive elements.

Analysis of the grades

Lucerne hay with an NLT quality index of 104 or more is 2018categorised as Prime. The higher the index, the higher the quality of the hay. Lucerne hay with an index value of between 97 and 103 is categorised as Grade 1 hay and is of average nutritive value. Grade 3 lucerne hay has the lowest quality index and could include foreign material such as grasses. Prime grade has low fibre, is highly digestible, and has a high soluble protein content. Grade 1 contains more effective fibre, has an average digestibility and soluble protein content. Grade 2 has more fibre and is less digestible with less protein. Grade 3 has very low protein but a high fibre content.

Top prices

Knowing the quality of lucerne hay will have a marked effect on the income and profitability of a dairy concern, especially when milk prices are low and/or feed prices are high. Top-quality lucerne hay obviously fetches the highest prices. South Africa's leading grading system makes it possible to determine the production potential of the respective grades. Scholtz's research has found that the quality of digestible energy and protein could result in a variability of between 35,7ℓ and 48,7ℓ a day in the milk production of Holstein cows. This shows, without a doubt, the effect that variations in lucerne hay quality has on production and profitability.



New kid on the block: Streptococcus bovimastitidis

7 Aug 2018 Gregori

For a biologist the discovery of a new species is a significant achievement. This is probably easier for a microbiologist than many other biologists but is still a satisfying achievement. The identification and characterization of Streptococcus bovimastitidis resulted from a discussion at the World Buiatrics Conference in Cairns when we agreed to perform whole genome sequencing on a collection of Strep. uberis isolates gathered during two clinical mastitis trials in New Zealand.

While reviewing the species identification data on the collection it was clear that one of the isolates had failed to be identified as Strep. uberis, or any other species in the reference library. A quick look at the assembled sequence data showed that there hadn't been any problem with the sequencing itself which eliminated the most likely cause. This piqued our curiosity and so began the search to identify this anomaly.

The Kraken software used for the initial species identification compares the sequence data of the whole genome with a library of previously sequenced bacteria. While many bacterial species have been genome sequenced there are a considerable number that have not, so the next step was to look at the 16S ribosomal RNA sequence (16S rRNA) which encodes a part of a subunit of a prokaryotic ribosome. This gene has been found to evolve extremely slowly, is easily sequenced, and is

To read more about the article you can subscribe on the following link:

https://m2-magazine.org/new-kid-on-the-block-streptococcus-bovimastitidis/?mc_cid=0d3bf0af8a&mc_eid=c87dc301cb

FINAL EXAM



Angus



REGN.#: SA 0083898619
DOB: 02/01/2013

Sire: S A V Final Answer 0035

OSU Final Exam 3139

Dam: OSU Empress 1105

* Add Substance and Capacity *Calving Ease

As of 06/01/2018

Production								Maternal							
CED Acc	BW Acc	WW Acc	YW Acc	RADG Acc	DMI Acc	YH Acc	SC Acc	Doc Acc	HP Acc	CEM Daus	Milk Acc	MkH MkD	MW Acc	MH Acc	\$EN
+9 .48	+1.0 .65	+64 .59	+117 .45	+22 .29	+58 .29	+3 .39	+1.77 .48	+15 .35	+5.7 .26	+8 .34	+12 .33		+51 .36	+1 .39	+2.63

Carcass						\$Values					
CW Acc	Marb Acc	RE Acc	Fat Acc	Carc Grp	Usnd Grp	\$W	\$F	\$G	\$QG	\$YG	\$B
+48 .44	+32 .39	+47 .39	+0.55 .37		4 6	+48.29	+80.32	+21.09	+22.80	-1.71	+129.58

BOSS BOSSMAN



Angus



REGN.#: SA 0083897678
DOB: 09/01/2011

Sire: Boss Hoss 8132

Boss Bossman 139

Dam: CFC Ellnora 741

* Low Maintenance *Fertility Matters

As of 05/14/2018

Production								Maternal							
CED Acc	BW Acc	WW Acc	YW Acc	RADG Acc	DMI Acc	YH Acc	SC Acc	Doc Acc	HP Acc	CEM Daus	Milk Acc	MkH MkD	MW Acc	MH Acc	\$EN %
+3 .30	+3.2 .51	+48 .45	+83 .36	+21 .18	-.03 .18	+0 .32	+1.17 .34	+21 .28	+6.2 .13	+4 .26	+14 .28	1 1	+13 .24	+0 .29	+13.41

Carcass						\$Values					
CW Acc	Marb Acc	RE Acc	Fat Acc	Carc Grp	Usnd Grp	\$W	\$F	\$G	\$QG	\$YG	\$B
+27 .35	-.12 .30	+41 .30	-.017 .26			+32.83	+40.47	+4.98	-2.65	+7.63	+73.73

EVOLUTION



REGN.#: SA 0083082339
DOB: 07/01/2014

Sire: Red Lazy MC Cowboy CUT 26U

Mosshall Red Evolution P353

Dam: Neterthon Red Essence H483

** Excellent Growth*

May 2018 Aberdeen- Angus BREEDPLAN															
	Calving Ease DIR (%)	Calving Ease DTRS (%)	Gestation Length (days)	Birth Wt. (kg)	200 Day Wt. (kg)	400 Day Wt. (kg)	600 Day Wt. (kg)	Mat Cow Wt. (kg)	Milk (kg)	Scrotal Size (cm)	Carcass Wt. (kg)	Eye Muscle Area (sq cm)	Fat Depth (mm)	Retail Beef Yield (%)	IMF (%)
EBV	-2.8	-0.6	+0.2	+4.4	+4.6	+78	+97	-	+12	+1.5	-	+5.1	-0.7	+1.1	+0.2
Acc	41%	30%	34%	67%	57%	56%	53%	-	37%	42%	-	33%	43%	34%	33%
Breed Avg. EBVs for 2016 Born Calves															
EBV	-1.7	+0.2	+0.7	+3.2	+38	+67	+83	+79	+11	+0.9	+52	+3.5	-1.2	+1.0	+0.1

SIN CITY



REGN.#: SA 0084061829
DOB: 23/01/2007

Sire: Red Northline Atlantic City

Red Wheel Sin City 43T

Dam: Red Wheel Pride 16M

** Polled*

** Balance and Power*

** Muscle*

Based on June 2018 EPDs Red Angus															
	Birth Weight	Weaning Weight	Yearling Weight	Milk	Total Maternal	Scrotal Circ.	Calving Ease	Mat Calving Ease	Yield Grade	REA	Carcass Weight	Marbling	Fat	Stay	HPG
EPD	+2.5	+48	+91	+20	+44	-	-0.9	+0.6	+0.07	+0.17	+29	+0.10	+0.001	+8	+13
Acc	71	63	62	54	-	-	54	52	16	9	49	10	13	25	8

MAROON FIVE



REGN.#: SA 0080529647
DOB: 11/05/2012

Sire: Red Haycow Cutting Edge 055

Red Flying W Maroon Five 155Z

Dam: Red RCRA Loma 829

** Explosive Muscle and Thickness*

** Lots of Milk*

Based on June 2018 EPDs Red Angus															
	Birth Weight	Weaning Weight	Yearling Weight	Milk	Total Maternal	Scrotal Circ.	Calving Ease	Mat Calving Ease	Yield Grade	REA	Carcass Weight	Marbling	Fat	Stay	HPG
EPD	+5.3	+74	+115	+26	+63	-	-3.4	+2.7	+0.38	-0.16	+46	+0.55	+0.056	+5	+14
Acc	53	47	46	35	-	-	37	34	19	14	38	16	23	8	8

Questions and Answers about Kalvolac CAIR:

These questions and answers are intended to answer questions from the market or press in an unambiguous way, which makes the message much more powerful and credible.

1. What is Kalvolac CAIR?

Kalvolac CAIR is a premium calf milk replacer enriched with a new and innovative ingredient: CAIR. Furthermore, the recipe remains just as it was.

2. Why was Kalvolac CAIR developed?

Respiratory problems in calves are a major cause of death on dairy farms. There is also a lot of antibiotic use associated with it. As FrieslandCampina Nutrifeed we are constantly striving to improve animal health and welfare. With Kalvolac CAIR, we can definitely contribute this.

3. Who developed Kalvolac CAIR?

CAIR, the blend of fragrant herbs and essential oils, has been developed by Nutrifeed and a third party.

4. What is CAIR?

CAIR is an additive that consists of a mixture of fragrant herbs and essential oils that contribute positively to respiratory health in calves.

5. How does CAIR work?

The volatile components (Components that rapidly evaporate) in CAIR reach the respiratory tract through the nasal and oral cavity. The remaining components reach the digestive tract and may, through stimulation of enzyme systems, make a positive contribution to bowel health.

6. Is CAIR a medicine?

CAIR is not medicine. It is a 100% natural blend of ingredients.

7. Who is Kalvolac CAIR for?

Kalvolac CAIR is developed for all calves. All calves are born with a certain level of health you want to maintain to make use of growth potential of the calf as much as possible. Kalvolac CAIR contributes to this because it supports respiratory health.

8. How do you know if CAIR is added to a calf milk replacer?

On the packaging it is visible when CAIR is added to Kalvolac milk replacers by means of a pink sticker. Next to that the powder has an herbal smell, caused by the herbs that are also the active ingredient.

9. Will CAIR also be added to other calf milk replacers?

It is possible that some other calf milk replacers will also be enriched with CAIR if the market requests this.

10. Is CAIR also available as a single additive?

CAIR is not separately available. It is an additive in our Kalvolac calf milk replacer.

11. What is the price of Kalvolac CAIR?

Kalvolac CAIR has great added value for calf and farmer; 33% less coughing / 33% less medicine use / 10% more growth. Kalvolac CAIR asks for a slightly higher investment by its new additive but will result in great profits mentioned above.

12. Whats is the advantage of feeding Kalvolac CAIR?

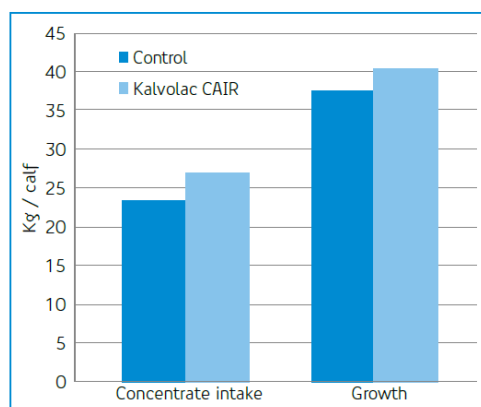
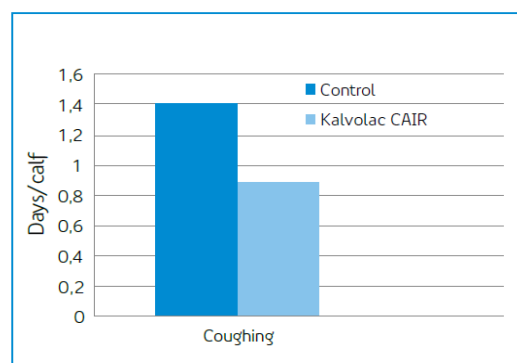
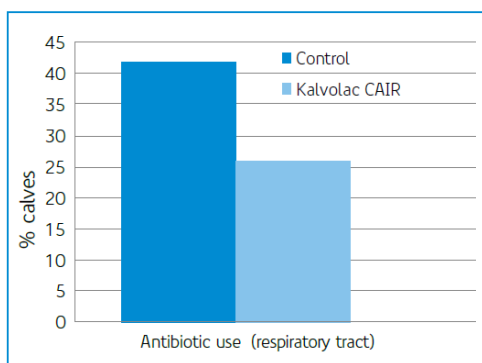
Kalvolac CAIR contributes to respiratory health in calves. Less respiratory discomfort, less medicine use for airways, more intake of concentrate and more growth. In the end, this contributes to a healthier calf rearing, but also a more efficient (financial and first calving age) and an enjoyable calf rearing for both farmer and calf.

Research has shown:

- 33% less coughing
- 33% less medicine use for respiratory tract
- 15% more concentrate intake
- 10% more growth

13. Has research been done? What were the results?

Several trials have been done to test Kalvolac CAIR, both on trial farms and in practice. From all studies we have seen the same results: reduction of coughing, reduced use of antibiotics and higher intake of concentrate plus higher growth.



14. When is the results visible?

Respiratory problems usually occur between week 3 and 7 with a peak in week 5 and 6. With Kalvolac enriched with CAIR, this peak is smoothed, and the calves breathe significantly more freely. The result is therefore immediately visible in the most critical period.

15. Which period should Kalvolac CAIR be fed?

In order to take full advantage of CAIR's functionality, we strongly recommend to feed this product the entire period after colostrum. In this way, the respiratory health of calves will continuously be supported. The chance of developing the so-called peak in respiratory problems is significantly lower.

16. Does Kalvolac CAIR has a curitive function?

CAIR will definitely do its job, but you also understand that if the evil has already happened, this often has bigger consequences. The chance to reach this point is much lower when CAIR is used throughout the whole milk period. Respiratory problems usually occur between week 3 and 7 with a peak in week 5-6. With CAIR in Kalvolac, this peak will be smoothed.

17. Which feeding methods can be used?

Kalvolac CAIR is suitable for both bucket feeding and machines.

18. What is the preparation schedule look like?

The preparation schedule has not been changed.



Nutrifeed

everything to
help
you grow

Kalvolac
LIONEL'S farmers'
VETERINARY SUPPLIES
first choice



CAIR



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Natal: 083 788 1219 (Steve Elliott)

Lionel's Vet Staff News



We would like to take this opportunity to congratulate Daida Gupite on 10 years of loyal service to Lionel's Vet.

Thank you for all your hard work, loyalty and positive attitude towards any task given to you. You are a real example to all of us.

We hope you will still be part of the Lionel's team for many years to come.

Thank you again.

The Sales Team

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Meet The Team!



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2de ry (vlnr): Byron Ott; Deon de Jager; Herman Bezuidenhout; Werner van Rooyen; Jan Joubert

3de ry (vlnr): JD Marais; Johan du Plessis; Gavin Dargie; GJ du Preez

4de ry (vlnr): Andreas du Toit; CC Terblanche; Derick Coetzee; Warnich Biersteker

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More than just products*