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## Problems with a high SOMATIC CELL COUNT on your farm? – Dr Adel de Haast

This is a question that is often asked on a farm because it has serious financial implications.

### What is Somatic Cell Count (SCC)?

It is the number of leucocytes or white blood cells per millilitre of milk. White blood cells accumulate at the inflamed site in the udder to combat invading bacteria. Normal milk will have less than 200 000 cells per millilitre and an elevated count is an indication of inflammation in the udder (Mastitis). Bulk tank SCC gives an indication of the level of subclinical mastitis and the loss of milk production in a herd due to mastitis.

### What causes the increase in SCC?

There are three major factors involved in causing a high SCC, the cow as host, the environment and the micro-organisms in the environment.

- + **The Cow** – Stage of lactation, age, immune system, udder conformation, nutrition of cow all play an important role in the SCC
- + **The Environment** – Determines both the type and numbers of bacteria they are exposed to and their ability to resist these organisms. The environment can be controlled to reduce this exposure.
- + **Micro-organisms** – the type of organisms will determine if we are dealing with contagious mastitis or environmental mastitis eg. Contagious mastitis is caused by *Streptococcus agalactiae*, *Streptococcus dysgalactiae* and *Staphylococcus aureus*, while environmental mastitis is caused by *Streptococci uberis*, *S. bovis* and *Enterococcus faecalis*.

### What should we do to prevent a high SCC?

A holistic approach is needed to decrease your SCC. There are two ways of milking, 'quick and dirty' or

'slow and precise'. The following steps are important to reduce the SCC.

1. Environment control – Clean and dry, no mud, manure or pools of stagnant water where cows lie down. Inorganic bedding etc.
2. Udder preparation – Stripping to detect early mastitis cases and stimulate milk flow. Allow about 90 seconds from entering the milking parlour until attachment of the milking unit to ensure adequate milk volume in the teat canal; this prevents physical damage and entry of bacteria from the cow (eg. *Staphylococcus aureus*) and the environment (eg. *Streptococci uberis*) that will cause a rise in SCC (milk clean, dry teats). Use teat dips with an effective germicidal ingredient.
3. Milking machine – Check the milking vacuum, hoses and teatcup liners (for tears) pulsators, air admission holes in claw. Regular dealer checks and services are recommended.
4. Dry Cow Therapy – Blanket dry cow treatment reduces new infections during the dry period by nearly 40% (Halasa et al., 2009) and 70% to 98% of existing infections can be cured by dry cow treatment (Dingwell et al. 2003). Use a good quality dry cow product like **Cepravin® DC** (Reg nr 83/570 Act101/1965) or **Cephudder®** (Reg nr 95/24.1/5 Act101/1965), keeping in mind the duration of the dry period.

By changing a few basic steps in the milking parlour we can reduce our SCC drastically and thus make more money at the same time.

References available from author.





# GEEN UITWENDIGE PARASIE TE in die winter: Is dit waar?

**Baie veeprodusente is bly dat die herfs en winter die uitdaging van uitwendige parasiete verminder. Is dit werklik die geval in alle diere en areas?**

– Deon van Emmenis

Sou ons in diepte gaan kyk is die twee vernaamste uitwendige parasiete by kleinvee in die winter die Karoo-verlamningsbosluis (*Ixodes rubicundus*) en rooiluise (*Bovicola ovis*). Kom ons bekyk die twee genoemde parasiet van nader.

## Karoo-verlamningsbosluis (*Ixodes rubicundus*)

Die bosluis is 'n driegasheer bosluis met ander woorde sy lewensiklus (larf, nimf en volwasse) word nie op een dier voltooi nie. In die oorgrote meerderheid van gevalle word die larf- en die nimfstadiums op Klaasneusmuis en Rooihase gevind. Die volwasse bosluise verkies meestal groter diere (skape, bokke, beeste en wild). Veral jong diere word maklik aangetas deur die verlamrende effek van dié bosluis.



verlies aan aptyt, verhoogde pynreaksie asook asemhalingsprobleme en uiteindelijke vrektes in die kudde. Vrektes van tot 15% kan in kuddes voorkom, wat noemenswaardige verliese vir die produsent kan beteken, veral teen vandag se pryse.

Die voorkoming van die bosluisverlamming kan bewerkstellig word deur goeie bestuur asook deur die korrekte chemiese middels te gebruik. Sou die boer waarneem dat sekere van sy kampe 'n hoër voorkoms van die siekte het kan hy, sou die weiding op sy plaas dit toelaat, die diere na ander kampe skuif. Sou dit nie moontlik wees nie kan **Delete® All** (G2837 Wet 36/1947) gebruik word om bosluisverlamming te voorkom. **Delete® All** moet vroegtydig en gereeld aangewend word na gelang van die bosluis populasie.

In geval waar die diere reeds verlam of besmet is met die bosluise, moet die boer so gou

moontlik die bosluise van die dier verwyder. Dit kan gedoen word deur **Taktic® Cattle Spray** (G2535 Wet 36/1947) te gebruik vir skape, bokke en beeste. **Taktic® Cattle Spray** (G2535 Wet 36/1947) se metode van werking sal veroorsaak dat die bosluis se monddele verlam word, die bosluis val af en gaan dood en gevolglik word verdere blootstelling aan die toksiene van die bosluis verhoed. Meeste diere sal herstel binne 24 tot 48 uur nadat die bosluise verwyder is.

Diere wat aan verlamming lei moet ondersteunende behandeling kry deur hulle te beskerm van ngunstige omgewingstoestande. Diere kan met anti-inflammatoriese middels wat van die veearts beskikbaar is behandel word.

## Rooiluis (*Bovicola ovis*)

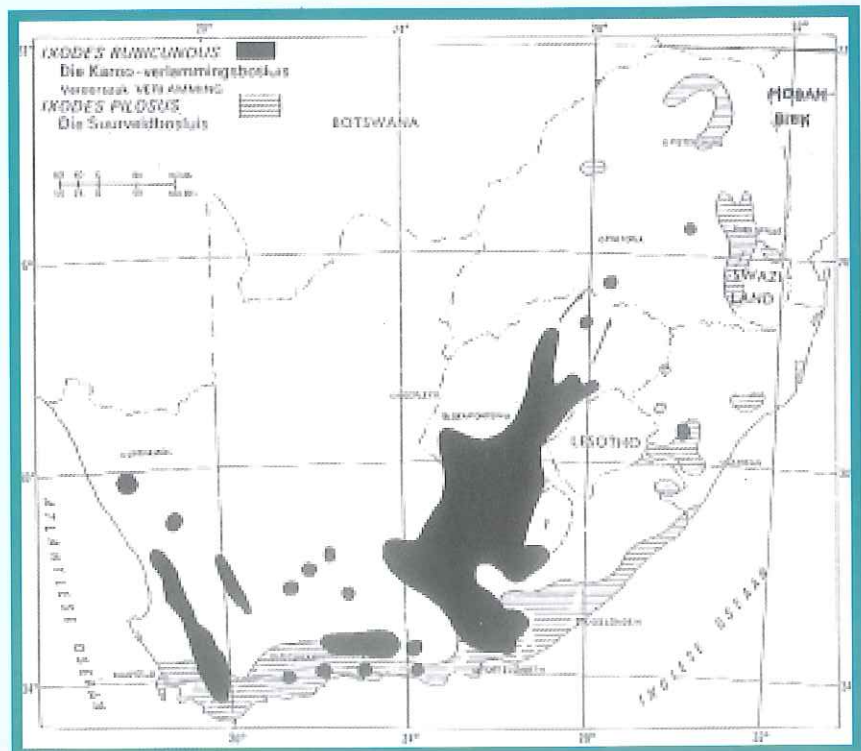
Luisie in die algemeen is gasheerspesifiek, wat beteken dat elke dierspesie sy eie soort luisspesie het. Luisie word in twee groep verdeel



Die voorkoms van bosluisverlamming vind meestal plaas in die herfs en winter van sekere streke (sien kaart). Bosluisverlamming word hoofsaaklik waargeneem in die suidelike streke van die Vrystaat en die sentrale Groot Karoo. Daar is sterk aanduidings dat dié bosluis moontlik versprei na ander dele van die land. Die voorkoms van bosluisverlamming kan so vroeg as in Februarie gesien word met 'n hoogtepunt gewoonlik gedurende April tot Mei en so laat as Augustus. Die verlamming word veroorsaak deur die volwasse bosluis wat 'n gifstof (senuwee toksien) afskei. In die beginstadium van die siekte kan die volgende waargeneem word:

- + Hiperaktiewe reaksie;
- + Een van die agterbene raak uiters sensitief;
- + Verlies van spierkrag en
- + Linker of regter agterbeen raak verlam

Sou die bosluis(e) nie vroegtydig verwyder word nie sal beide agterbene verlam word, die dier sal verlies van blaasbeheer ontwikkel en verlamming tree in by en en later beide voorbene. Hoe langer die dier aan die toksiene wat deur die bosluise afskei word blootgestel word kan dit lei tot



Kaart: Heloise Heyne





naamlik suigende en bytende luise en boere moet kan onderskei watter van die luise probleme op die plaas veroorsaak.

Die grootse probleem vandag word veroorsaak deur bytende luise, ook genoem die rooiluis of rooikopluis (*Bovicola ovis*). Die oorlewing en aanteel van dié luise vind die meeste plaas in die winter as gevolg van die verswakte kondisie en algemene verlaging in weerstand van die gasheer (skaap of bok). Ouer en siek diere is meer vatbaar. In somermaande sal klein getalle voortbestaan op die diere. Die luise voed nie op bloed nie en lewe van die epidermale weefsel, vel skubbe en serum van die vel. Die luise is ongeveer 3mm lank en kan wel met die blote oog waargeneem word, wanneer die vag oop gemaak word.

Bytende luise veroorsaak 'n geweldige irritasie en 'n gekrap van die diere volg. Die effek van die irritasie lei tot velskade, breuk in die wol, die lok van brommers en die vermindering in groei. So min as 5000 luise kan tot 5% in wol waardevermindering lei, 25000 luise kan tot 'n waardevermindering van 20% lei. Infestasies met die parasiete kan voorkom word deur:

- + Direkte kontak met besmette diere te vermy
- + Nuwe aangekoopte diere in kwarantyn plaas.
- + Slegs skeerders met skoon klere en toerusting toe te laat.
- + Voorkomend te dip.

Behandeling van besmette diere moet as volg gehanteer word: Alle

diere op die plaas moet gedip word. Produkte, soos **Zipdip**® (G0381 Wet36/1947), **Delete**®-X5 (G3279 Wet36/1947) of **Taktic**® **Cattle Spray** (G2535 Wet 36/1947) kan op hulle eie gebruik word vir die beheer van die luise. Sou die produsent van soortgelyke produkte gebruik maak moet die produsent twee keer dip, met 'n 10 -14 dae tussenperiode, 'n maontlike derde dipping sou nodig wees op dag 21. As die produsent slegs een keer wil dip kan hy **Fleececare**® (G1743 Wet 36/1947), wat 'n insek groeireguleerder bevat, saam met produkte, soos **Zipdip**® (G0381 Wet36/1947) of **Taktic**® **Cattle Spray** (G2535 Wet 36/1947) gebruik. Dis belangrik dat 100% benatting van al die diere tydens dip verkry word en dat alle diere op die plaas gedip moet word, selfs die arbeiders se diere wat op die plaas is. Dompeldip bly steeds die beste praktyk vir die beheer en behandeling van rooiluise. Plaas die diere in 'n nuwe, skoon kamp na dip. Produsente moet daarvan bewus wees dat inspuitbare makrosikliese laktoon middels min tot geen effek op rooiluise het nie weens die feit dat die parasiete nie bloed suig nie.

Suigende luise kan wel met inspuitbare makrosikliese laktoon middels suksesvol behandel word. Vir enige raadpleging kontak jou MSD Animal Health verteenwoordiger.

*Verwysings beskikbaar van outeur.*



Taktic® Cattle Spray (G2535 Wet 36/1947)



Fleececare® (G1743 Wet 36/1947)



Delete®-X5 (G3279 Wet36/1947)



Zipdip® (G0381 Wet36/1947)



# THREE-HOST TICKS

## Why do they continuously cause problems?

– Dr Johan Cloete

All tick species are definitely not the same as commonly perceived. To be able to prevent problems related to multihost ticks, we have to understand their life cycles. If we extrapolate control measures that apply, for instance, to the blue tick (*Rhipicephalus decoloratus* and *R. microplus*), onto the multihost ticks, we blunder. This results in the frustration we commonly encounter when producers and vets discuss tick related issues. In this communication we focus on two important three-host ticks:

- + the bont tick, *Amblyomma hebraeum*, and,
- + The brown ear tick, *Rhipicephalus appendiculatus*.

They differ from the one-host blue tick, most importantly, in the following ways:

1. Their life cycle is significantly longer hence fewer generations per year occur – hence these ticks are less prone to develop resistance to dips as is the case with the blue tick. The one-host blue tick spends about 21 days on the host, eggs take about 28 days to hatch – resulting is a short life cycle to be repeated 2-3 times during the summer months.
2. Engorged females lay significantly more eggs to compensate for the fewer generations per year. When eggs hatch during favourable conditions – mostly later during the summer, then larvae emerge which climb onto the first host: a bovine or another species,
3. After feeding, the larvae will fall off and moult to produce a nymph which climbs onto the second host, feeds, falls off, moults into an adult which then climbs onto a third host – hence the name three-host tick (see diagram). The nymphs of the bont tick are able to transmit the heartwater disease organism (*Rickettsia ruminantium*).

4. During the winter months, the almost invisible to the naked eye immatures (larvae and nymphs) not only occur in abundance on cattle, but also on intermediate hosts like hares, guinea fowl and small antelope species. It is for this reason that dipping cattle in winter using Taktic® Cattle Spray (Reg. no. G2535, Act 36/ 1947) or Delete® All (Reg. no. G2837, Act 36/ 1947) and moving them through as many tick infested camps as possible during the winter, will contribute to decrease the load of adult ticks in summer. This proactive approach will help to minimize three-host tick-related problems like heartwater being transmitted, and abscesses caused by the bont tick as well as severe infestation of the ears by the brown ear tick towards the end of summer. Waiting until the problem presents itself is costly and always too late – with losses almost impossible to recuperate. Whereas a routine spring and autumn dip (irrespective of VISIBLE, engorged tick numbers) may help to strategically decrease blue tick numbers during the summer, this approach will not be equally successful with regard to the multihost ticks.

Some pointers to help deal with the three most common specific diseases transmitted by three-host ticks in cattle:

- + **Heartwater:** The organism (*Rickettsia ruminantium*) transmitted by the bont tick causes damage to the blood vessel walls causing fluid to leak out leading to pressure on the brain – explaining the nervous symptoms - and effusions in the chest cavity. It can be detected on stained brain smears as confirmation of the diagnosis. Long-acting tetracycline antibiotics like Reverin®LA (Reg. no. G3442, Act 36/ 1947) merely kill

the organism, but the damage it caused needs time to heal – hence one should be patient in allowing for full recovery. Exceeding the correct dose of 1mL

per 10kg body mass may result in fatal kidney damage. Also, if the long acting antibiotic is repeated at a shorter than 72 hour interval, over dosage results in kidney damage. As supportive therapy, a single administration of a non-steroidal anti-inflammatory drug (NOT phenylbutazone), available from the veterinarian, will help alleviate and expedite recovery – provided treatment is during the early stages of the disease.

- + **Abscesses** on vital part of the body (udder, testes, preputial opening of the sheath etc.) are due to the long mouth parts of adult bont ticks. As indicated one or two dip applications in the middle of winter and moving the dipped herd through camps where intermediate hosts, carrying immatures reside, will help decrease challenges by adults.

- + **Heavy brown ear tick infestation in summer:** Nothing is more frustrating than hand dressing almost rotten cattle ears due to this problem. The pain and discomfort leads to a severe decrease in pasture intake and will significantly affect milk yield in lactating cows and growth in suckling calves. Best is to prevent it. Dip once or twice during the winter and immediately thereafter move cattle through camps while the dip's active ingredient is still effective on the animals.







# Sampling for ZILMAX<sup>®</sup> laboratory analyses

Some interesting facts about the molecule to help ensure a more accurate result

– Pierre Jansen van Vuren

The product Zilmax<sup>®</sup> (Reg.No. G2180, Act 36/ 1947) contains 4,8% of the active ingredient, zilpaterol HCl – the latter which an analytical laboratory will test for to evaluate the inclusion of Zilmax<sup>®</sup>.

Important aspects were highlighted by our international zilpaterol HCl expert, Dr. Mark Williams during a recent visit to South-Africa. The following issues are relevant to improve the understanding of Zilmax<sup>®</sup>.

It tends to sediment out when included into a very dry ration and does not distribute evenly in an extremely dry ration. This means most of the molecule will land up at the bottom of the bunk – hence the daily intake by cattle may not be as even as one would desire.

The latter also has an influence on the lab analyses performed on rations. If you sample only the top of the dry ration your results will be low and sampling the finer bottom particles at the bottom will result in higher than expected results. In trials more than 90% of the zilpaterol HCl was found in the bottom of the bunk when a ration consisted of 89% dry matter. For this reason, when collecting feed samples for zilpaterol HCl analyses, care should be taken to obtain as representative a sample as possible.

Trials done in the US have shown how erratic results can be, the dryer the ration becomes. This is illustrated in Figure 1.

The graph shows that as soon as the moisture concentration exceeds about 70% DM, results become more erratic. When exceeding 80% DM, a constant result becomes nearly impossible. This is due to all the factors that play a role in sampling as well as the behaviour and characteristics of the zilpaterol HCl molecule.

Zilpaterol is highly water soluble. The recommended percentage of free water in a ration is about 20%. This will ensure more even distribution of zilpaterol HCl throughout the ration, keeping the mole-

cule bound to ration particles and resulting in more precise laboratory results.

When molasses is used as a carrier for Zilmax<sup>®</sup>, one must be certain there is 20% free water available for the zilpaterol HCl to dissolve properly. The mixing of molasses and the Zilmax<sup>®</sup> is also of great importance. Because of the density of zilpaterol HCl, it will float to the top of the molasses and in some studies done in the US, only 11% zilpaterol HCl could be recovered from a Zilmax<sup>®</sup>-molasses mix due to this fact. This will have a significant effect on laboratory results if mixing or sampling is not done correctly.

## Sampling

Correct sampling is of great importance, especially when dealing with a very dry ration. This applies to sample taking on the farm as well as in the lab. One must sample at different spots and at different depths. A good representative sample is required and sampling should take place directly after the ration has been delivered to prevent sedimenting.

Zilpaterol HCl can stick to plastic bags and glassware. The good analytical laboratory will appropriately deal with this. Zilpaterol HCl can also stick to the bare hands of the person collecting the sample. Avoid the use of plastic gloves. Use a steel scoop to collect a ration sample for zilpaterol HCl analysis.

## In conclusion

To get the best cattle performance results from Zilmax<sup>®</sup> and the zilpaterol HCl molecule with regards to its dispersion in the final ration, the following guidelines should be followed:

1. Make sure the ration has the appropriate moisture concentration. In particular, it should contain at least 20% free water. If the ration is very dry, a clean bunk strategy should be followed. All the feed delivered to the bunk must be eaten before the next batch is delivered – without allowing the bunk to be empty for longer than 30 minutes. This will ensure that the animals will get their daily dose of Zilmax<sup>®</sup> - which amounts to 3,125mg per kilogram body mass per day.
2. When molasses is used as a carrier, ensure the Zilmax<sup>®</sup> and the molasses are mixed thoroughly before they are mixed into the final ration.
3. During sampling to evaluate zilpaterol HCl concentration and dispersion in the ration, make sure samples are taken at different depths and at different spots directly after the ration has been delivered to the bunk. Use a steel scoop for this purpose.

If there are any problems or concerns with the product, please phone your regional MSD sales representative so we can address the problem.

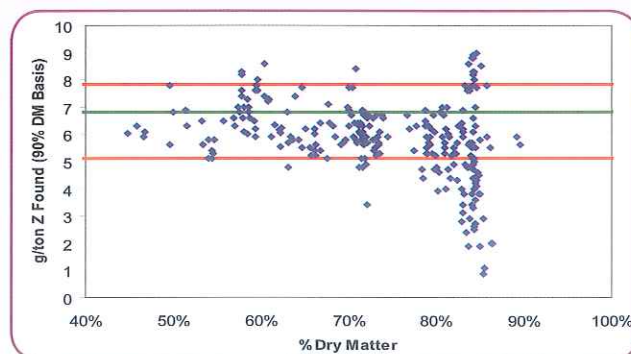


Figure 1: Scatter plot to illustrate the relationship between ration moisture concentration and variation of Zilmax<sup>®</sup> analysis results.

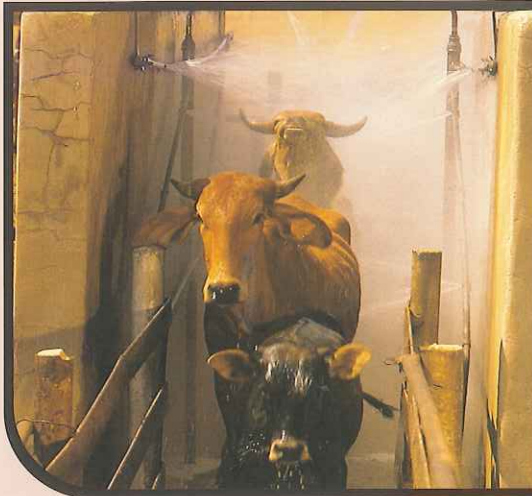


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SPRAY



## TAKTIC® CATTLE SPRAY

Reg. No. G2535 Act 36/1947 Namibian Reg. No. N-SR 1035

- Cattle** • Ticks • Lice • Mange mites  
**Sheep** • Sheep scab mites • Itch mites  
• Sheep lice • Keds  
**Ostriches** • Ticks  
**Goats** • Mange mites • Lice

Amitraz 12,5% m/v

POUR-ON



## Delete® ALL

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A ready-touse pour-on for the control of ticks, flies, mites and lice on cattle, sheep, goats and game.

Amitraz 2,0% m/v, Deltamethrin 0,5% m/v,  
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