# Lionel's News

July 2014 5th Edition

Dear Business Partner

At Lionel's Vet we appreciate that farming with livestock is a passion not only a means to earn an income. Therefore we hope that this newsletter will be informative and interesting to all. We have a dedicated team of sales and technical staff that will provide you with information on an ongoing basis.

Thank you for your support and be assured of our commitment to make further innovations available to you.

Regards

Duncan Stephenson

# Dear ENOUGH Advocate,

## Can an ounce make difference?

Yes, it can. Take a look at increasing global demand for pork, for example.

By 2050, consumers will demand an average of 12 ounces of pork per person per week - that's up just 1.3 ounces from 2010 when the average was 10.7 ounces.(i)

Meeting that demand may sound simple, but consider this: the world's population will exceed 9 billion by 2050, and 3 billion people will join the middle class, demanding more access to meat, milk, and eggs.(ii) Increased demand and a growing world population translate to a 50 percent increase in pork production - from 118 million tons in 2010 to 179 million tons of pork in 2050.(iii)

Can we produce ENOUGH pork to meet demand? Yes, but how we do so matters. There are two likely paths.

**1. Raise more pigs. Use more resources.**

Today, 1.38 billion pigs are raised globally.(iv) Without additional access to innovation and farming best practices, farmers will need to raise 2.09 billion pigs.(v) That's 710 million more pigs! Raising that many pigs without farming innovations would require a 50 percent increase in resource use.(vi)

That's simply not sustainable.

**2. Improve efficiency. Use fewer resources.**

By increasing global access to farming innovations and best practices, farmers could produce 50 percent more pork with only 1.7 billion pigs.(vii)

And the resource savings add up! By leveraging farming innovations rather than rejecting them, farmers will save:

- 484 million tons of feed. That would fill ENOUGH railcars to circle the Earth's equator twice!(viii)
- 262 million acres of land. That's ENOUGH land to equal Texas and California.(ix)
- 260 billion gallons of water. That's ENOUGH water for New York City and Philadelphia annual household consumption.(x)

One ounce can make a difference. And so can each of us if we advocate for farming innovations and choice that can ensure all people have ENOUGH.

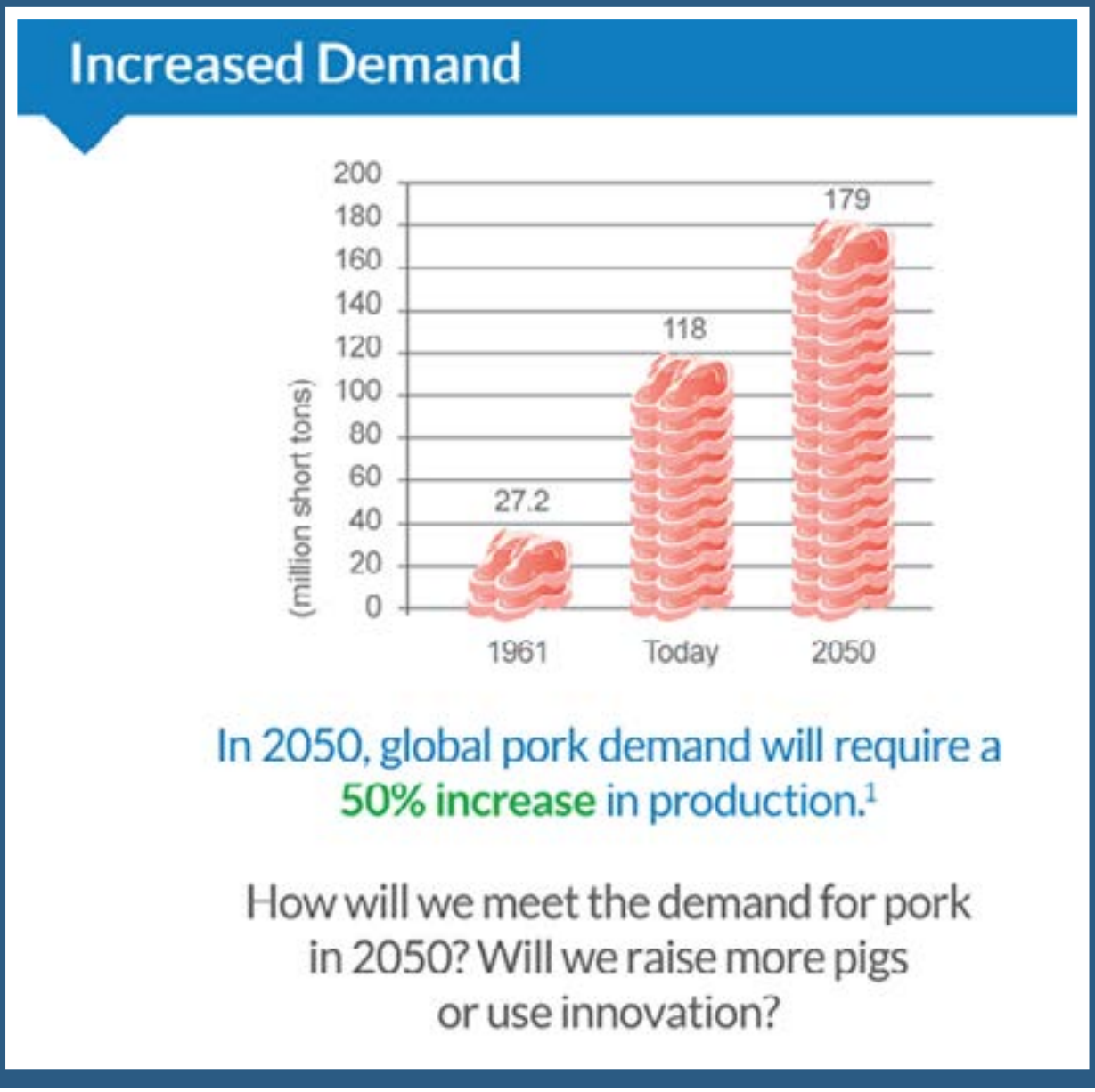
# Pork industry poised to meet growing demand

June 16, 2014 By Ken Anderson

Pork is the most widely consumed meat in the world and pork demand continues to grow. A new report from Elanco indicates that global demand for pork will increase by 50 percent by 2050. The president of U.S. Operations for Elanco, Rob Aukerman, is confident the industry can meet that future demand through a combination of increased hog numbers and greater production efficiency. But he says it will require acceptance of innovation and the ability to bring new technologies and practices to the market.

Rob Aukerman - Elanco

At this year's World Pork Expo, Aukerman met with the media to discuss Elanco's report, and the challenges and opportunities that lie ahead for the pork industry.



# Voer jou droë koeie reg .....

## vir beter laktasie in die toekoms

Die voeding en bestuur van droëkoeie is uiters belangrik vir toekomstige melkproduksie, algemene gesondheid en verhoogde reproduksie syfers in en voor die volgende laktasie. ‘n Gebalanseerde rantsoen wat spesifiek geformuleer word vir koeie tydens die droë periode kan help om metaboliese steurnisse te voorkom.

Die doel van ‘n gebalanseerde dieët in die droëkoei, is om die koei se kondisie tussen 3 en 4 te handhaaf. Dit kan bereik word deur ‘n laer energie rantsoen gekombineerd met genoegsame proteïene, minerale en vitamiene te voer. Dit sal die koei laat kalf met voldoende vet, proteïen en metaboliese reserwes om ‘n gesonde kalf te speen en nie te veel kondisie te verloor tydens kalwing en vroeë laktasie nie. ‘n Vars koei is grootliks afhanklik van vetreserwes vir energie tydens die eerste 6 tot 8 weke van laktasie, dus is dit belangrik dat voldoende maar nie oortollige vetreserwes opgebou word tydens die droë periode nie. As die energiereserwes nie voldoende is tydens vroeë laktasie nie, sal die koei ‘n negatiewe energiebalans ontwikkel wat tot ‘n verlaagde piek in melkproduksie en oormatige liggaamsgewig verlies sal lei. Teen 8 tot 12 weke na kalwing, is die droëmateriaal inname van die koei op sy hoogste. In hierdie tyd begin die koei die vetreserwes, wat tydens vroeë laktasie gemobiliseer was, weer op te bou.

Daar is verskeie rou materiale wat gebruik kan word om ‘n gebalanseerde droëkoeirantsoen te formuleer. Ruvoer en grane maak normaalweg die grootste komponent van ‘n droëkoeivoer op. Die tipe ruvoer wat gebruik word in droëkoeirantsoene is baie balangrik. Sekere ruvoere kan metaboliese steurnisse veroorsaak en moet teen die regte voedingspeile ingesluit word om dit te voorkom.

Ruvoere soos mieliekuilvoer, moet verkieslik nie meer as 50% van die ruvoer komponent van ‘n rantsoen opmaak nie. Dit kan veroorsaak dat die koei oor kondisie is en die probleme soos hierbo genoem, kan aanhelp. Koeie wat tydens die droë periode te vet raak, kan probleme soos Displaced Abomasum, kalwings probleme, Dystocia en Ketosis optel. Peulgewashooie soos lusern en medics, moet nie meer as 30% van die ruvoer komponent uitmaak nie. Oorvoeding van ‘n peulgewas kan oortollige proteïen, kalsium en

fosfaat innames veroorsaak wat kan lei tot udder edema, melkkoors en ketose.

Natuurlik of aangeplante grasweidings is ideaal vir droëkoeivoeding. Dit kan aangevul word deur ‘n kombinasie van grasweidings en ander ruvoere soos kuilvoer of lusern te voer, afhangend van die kwaliteit van die weiding.

Die graankomponent van ‘n droëkoeirantsoen is normaalweg klein en word gebruik net om die energiebalans te optimiseer, wanneer ruvoere soos kuilvoer en hooi nie voldoende energie kan verskaf nie. Gewoonlik word net ‘n klein persentasie graan benodig om aan die energiebehoeftes van die droëkoei te voldoen. Die insluiting van grane help ook om die rumen se mikrobiese populasie te onderhou, wat gewoond is aan ‘n hoë graan dieët (tydens laktasie) en help met mineraal opname.

Konsentrate kan gebruik word as insluiting in droëkoeirantsoene. Die voordeel van aangekoopte konsentrate is dat die konsentraat deur ‘n gekwalifiseerde voedingskundige geformuleer word en die regte balans van proteïen, minerale, energie en vitamienes bevat, om in te sluit by die ruvoer komponent. Dit maak dit maklik vir die boer om ‘n rantsoen te meng op die plaas.

Die voeding van die droëkoei vind in twee fases plaas, die “far off” fase en die “close up” fase. Laasgenoemde staan ook meer bekend as opstoom. Dit is die periode net voor die koei weer begin melk produseer.

Die “far off “ fase strek vanaf opdroog tot 3 weke voor laktasie weer begin. Tydens die tyd moet die koei se rantsoen aangepas word volgens liggaamskondisie en nutriënt behoeftes. Die koei se liggaamskondisie moet tussen 3 en 4 gehou word tydens die tydperk. Dit kan gedoen word met die regte voedingsbestuur. Al is dit meer effektief om die regte kondisietelling te kry tydens laat laktasie, kan dit ook bereik word tydens die droë periode. Die voeding van ‘n matige energiegebalanseerde rantsoen, behoort die koei in ‘n positiewe energiebalans te hou, en verhoed dat sy kondisie verloor.

Die “close up” of “steam up” fase is die laaste 3 weke van die droë periode. Tydens hierdie tyd is daar verskeie veranderinge in die nutriëntbehoeftes van die koei. Tydens hierdie fase word die koei se rumen weer aangepas vir die gekonsentreerde rantsoen wat tydens laktasie gevoer sal word. Die rumen se mikrobiese populasie verander ook tydens hierdie tyd. Die vesel verterende mikrobes verminder en stysel verterende mikrobes vermeerder. Dit word aangehelp deur die ruvoer komponent stelselmatig te verminder en die konsentraat komponent te verhoog, om die aanpassing te vergemaklik.

Die verandering sal ook help om te voldoen aan verhoogde nutriënt behoeftes wat gepaard gaan met die groeiende fetus in die koei. Die aanvullende voeding sal help met enige gewigsverliese as gevolg van

laat dragtigheid.

Dit is van belang dat die proteïen en mineraal komponente van die rantsoen gehandhaaf word, terwyl die graan komponent verhoog word.

Droëkoeivoeding kan verskeie voordele na vore bring. Dit kan help met ‘n beter piek laktasie, hoër melkproduksie en ‘n gesonder kudde vir die toekoms. Met die regte bestuur kan voeding tydens die droë periode uiters winsgewend wees in die toekoms.

Wesfed het ‘n reeks produkte wat spesifiek vir koeie tydens die droë periode geformuleer is. Kontak ons gerus indien u enige navrae het.

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# TAG nageslag beïndruk die Suid Kaap

Tydens Patrice Simard (Direkteur van Trans America Genetics) se besoek aan Suid Afrika het ons span na die TAG nageslag gaan kyk wat groot oproering veroorsaak het hier in die Suid Kaap.

Die Branson nageslag wat ons besigtig het, was baie indrukwekkend en eienaars is almal meer as tevre-de met die oplewering van die eerste TAG nagesalg in hulle melkkuddes.

Meeste van die telers gebruik nou Branson vir n 2de of 3de keer nadat hulle die impak van die bul in hulle eie kuddes gesien het.

Dit is van die eerste Branson dogters in melk in die wêreld en veroorsaak tans groot opskudding in die bedryf.


# One drop of milk is enough

A long-awaited pregnancy test using individual cow milk samples has arrived. After highly accurate trials, the test is now being launched globally by diagnostic company IDEXX. Recommended as a confirmatory follow up to early veterinary pregnancy diagnosis, this new test is hassle free for producers and veterinarians alike. Just picking up one or two lost pregnancies in a typical herd will justify the cost involved.

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# THE MICRO WARS

## (AND WHY WE'RE LOSING THEM...)

Most of us conveniently ignore the fact that micro-organisms, not humans, are the dominant life form on our planet. Incredibly resilient and diverse in number, they are not only the foundation of all life on Earth but interact with human life in countless ways (up to 3% of total human body mass consists of bacteria). While most of this inter-species interaction is benign or even beneficial, many micro-organisms do pose a threat to human society and commercial food production is at the leading edge of this challenge - a challenge not made easier by the sheer scale of the integrated global food production supply chain. Add to this the ever-increasing sophistication of analytical methods used to track unwanted micro-organisms combined with a more informed and activist consumer base, and the stage is set for warfare at the microscope level.

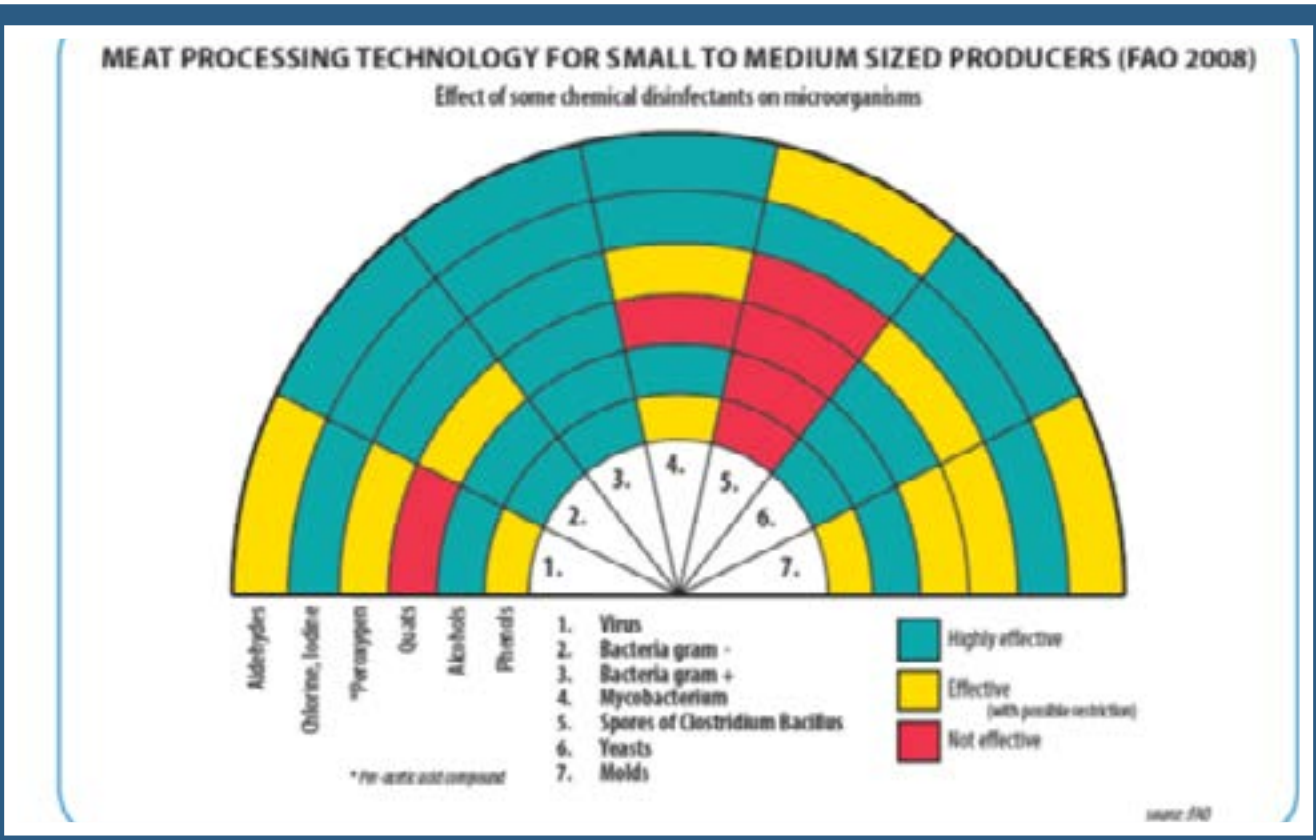
But there's a problem: mankind is slowly but steadily losing this war; despite our vast knowledge of micro-organisms and technological advances the fact is that microbial infestation, whether related to food spoilage or acute human infection, is on the rise and the WHO has recently warned that increa- sing levels of bacterial resistance to antibiotics, antiseptics and disinfectants could pose a threat to human prosperity.

**Agriculture in the Firing Line**

Micro organisms rapidly adapt to environmental, physical and chemical conditions, so it's not surpri- sing that resistance to extensively used antiseptics and disinfectants has been reported. Of the mechanisms that have been identified the most significant are clearly intrinsic, in particular the ability to spo- rulate, and the protective effects of biofilms. In this context "resistance" can perhaps be more correctly described as "tolerance" - or the protective effects that permit micro organisms to survive in the presence of an active agent. While the WHO has identified the twin priorities of more judicious use of antibiotics and the development of more powerful alternatives, the global food industry also has a critical role to play because many reports of microbial resistance cite parallel causes like inadequate cleaning, incorrect product use and ineffective infection control practices. It has been speculated that low-level resistance may aid in the survival of micro organisms at residual levels of antiseptics and disinfectants. Addressing these challenges seems simple enough in theory, but in practice food producers are overwhelmed by the sheer number of competing disinfectants, methods and (often contradictory) advice. It is also clear that antiseptic and disinfectant products can vary significantly despite containing similar levels of biocides. This underlines the need for closer scrutiny of efficacy claims and adequate test methodologies.

**No Shortcuts - Practice Makes Perfect**

Although international best practice teaches that cleaning and disinfection should always be treated as two separate processes, in SA the 'shortcut' route of using cleaning-disinfectant 'combo' formulations has proven resilient – with hygiene control suffering as a result. Many formulators and marketers also seem to forget (or ignore) the fact that, besides lifting dirt and grease and attacking organisms, effective cleaning methods should also address biofilm removal and control – preferably on a continuous basis. Chlorination is particularly efficient in this application due its innate ability to strip out the Nitrogen bonds holding protein biofilm together. Another concerning trend is the tendency of some vendors and even specialised cleaning and hygiene contractors to use disinfectant compounds more broadly than their demonstrated chemical efficacy. Ultimately the selection of disinfectant always represents some level of compromise. While there are no 'silver bullets', to help make things a little clearer for the end user the United Nations Food and Agriculture Organisation (FAO) has published an interesting chart demonstrating its own assessment of the relative efficacy and spectrum utility of the most common environmental disinfecting compounds.




## Looking ahead

**It's not hard to** find consensus that microbial resistance is one of the most serious threats the world faces today. What has proven much more difficult has been to raise broad awareness of the role the non-scientific community can play in slowing this progression and minimizing its potential effects. Both food producers and retailers have a role to play here, and awareness of the following principles offer a good starting point:

1. In order to succeed at both, it's imperative to separate cleaning and disinfection.
2. Make biofilm control part of your product selection procedure
3. Be aware of the capabilities - and limitations – of the disinfectant/s you select, and always ensure formulations contain sufficient ac¬tive ingredient to ensure microbial 'kill'.
4. Where hygiene is contracted out to a third party, ensure that you understand - and support – the chemical solutions they employ.
5. Avoid the use of antibiotics wherever possible

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# Digital dermatitis:

## A recipe for successful control

Dairy basics - Herd Health

Written by Arturo Gomez and Dörte Döpfer


In the U.S., even on well-managed dairies, there's a good chance that digital dermatitis (DD) is present. It is highly contagious and if left unchecked can cause painful ulcerations that often lead to lameness.

Common practices for controlling DD have been limited to footbaths and topical treatment of severe lesions with no clearly established guidelines for optimal management.

Many dairy producers might be surprised to learn that DD can be effectively controlled, but it requires a slightly more sophisticated approach than the current standard of care. This article explores the tools already available that can be used on a dairy to bring DD prevalence under control.

The first step in controlling DD is to understand the epidemiology of the disease. Digital dermatitis is multifactorial with a strong bacterial component, namely Treponema spp., which can exist in both active and cystic (dormant) forms.

Typical progression of the disease includes early, acute (ulcerative) M2 and chronic stages.

In fact, DD causes changes in the shape and structure of an infected hoof before any lameness symptoms are observed.

Once the disease has infected the animal, it is difficult to eliminate. It is important, therefore, to focus on minimizing new infections and decreasing the duration of acute (ulcerative) M2 cases. In order to achieve this, we rely on a set of tools available called "FIGHTERS," which stands for:

- Footbath
- Infection status
- Group of animals
- Hygiene
- Trimming
- Early topical treatment
- Record-keeping
- Skin quality – skin protection

**Table 1** Summary of FIGHTERS against digital dermatitis

| Action | Tools | Objective |
|---|---|---|
| bath | Dimensions, chemicals | Decrease chronic/subclinical going to acute DD |
| tion status | Diagnostic blood tests, visual inspection (chute, parlor), DD pen walks | Early detection; monitor cure |
| p of animals | Tailored interventions, periods of high-risk heifers | Maximize work efficiency and DD control success |
| ene | Focus on critical control points | Decrease risk of transmission |
| ming | Professional trimming | Prevention and cure |
| topical treatment | Topical (wrap) treatment of M2 DD | Maximize clinical care – Minimize skin proliferation |
| rd keeping | Commercial software | Monitor and adapt management |
| quality – skin protection | Nutritional supplements | Maximize skin integrity – skin protection |

Here's a breakdown of the FIGHTERS strategy (Table 1) for controlling digital dermatitis.

Footbath

- The design of the footbath is of paramount importance to maximize the application of disinfectant solutions, decrease the amount of water used, minimize the amount of waste chemicals dumped into the environment and save money, too. Chemicals should always be used according

to their labels.

An ideal footbath is 10 to 12 feet long, 1.6 to 2 feet wide, with an 11-inch step-in curb and a 4-inch minimum solution depth. Sides, sloped at 70 degrees and at a height of 3 feet, also help save solution and maintain adequate solution depth.

- The main objective of the footbath is the control of early (subclinical) and chronic lesions, avoiding the progression of these lesions into acute (ulcerative) stages. Footbaths are not a substitute for individual treatment of acute lesions.

- The appropriate frequency of footbath applications should be determined based on the needs of each herd.

Infection status

- Assessing the prevalence of the disease is the first step to quantifying the extent of the problem. The next step is evaluation of the infection status. Topical treatment applications need to be performed based on active surveillance.

Some tools such as DD pen walks, DD diagnosis in the parlor or diagnostic blood tests of active DD cases can be used to directly evaluate DD status even before lameness symptoms and chronic stages show in animals affected with the disease.

Group of animals

- The rearing period is a crucial factor for the epidemiology of the disease. Success of the DD prevention programs in the milking herd will be determined by the quality of DD prevention during the rearing period.

A recent study from our research at the University of Wisconsin has shown that approximately 67 percent of the heifers initially infected with DD during the rearing period experienced a case of DD during the first lactation.

However, animals kept free of the disease during the rearing period only experienced a case of DD during the first lactation in 13 percent of the cases.

- Precise identification of high-risk groups of animals can be achieved by evaluating the DD incidence and prevalence by days in milk or by lactation group. This is required in order to maximize the resources and the efficiency of the control programs during the rearing period and in adult cows.

Hygiene

- Digital dermatitis infection is associated with poor hygiene. The correlation between dirty environments and higher DD prevalence is widely accepted. However, even in fairly clean barns,

special attention needs to be made to critical points where transmission of the disease can

happen, even if the animals are exposed to problematic spots for very short periods of time. Some examples could be when animals walk through footbaths full of manure during periods when the footbaths are not actively used, are confined to small spaces to facilitate pen cleaning activities or are exposed to manure piles dragged across alleys by scrapers.

Trimming

- Appropriate trimming can help prevent DD infections. Routine trimming of feet allows for close examination of feet for early identification and treatment of DD infections. Prevention can be achieved by removal of loose horn at the heels, wide trimming of the axial space of the lateral toe and treatment of DD lesions found during trimming (such as necrosis of the toe).

- Comprehensive trimming and foot examination programs should always take into consideration non-lactating cows, such as replacement heifers and dry cows.

Early topical treatment

- Bacterial colonization of the deeper layers of the epidermis is observed at very early stages of the disease. Over time, skin proliferation can increase as the animal reacts to the disease. Both aspects of the natural progression of the disease compromise treatment success, which is exacerbated when treatment of lesions is delayed.

- Consequences of delayed treatment include increased lesion recurrence and transmission of DD to healthy animals. Only programs that include active surveillance to detect and topically treat new cases of the disease will be successful in the long run. A farm goal of zero percent presence of skin proliferation in M2 lesions at treatment can be established to recognize and monitor early treatment.

- The objective of early topical treatment is to reduce the duration of the infectious period of DD lesions and to increase cure rates. The only solution to reduce the number of active DD lesions is topical treatment.

Follow-up of the initial treatment of a DD lesion must be included in the treatment schedule. Although research efforts are being made to find non-antibiotic topical treatments, oxytetracycline (OTC) is still an effective option to treat M2 DD cases. However, working along with your veterinarian is advised when using OTC products.

Record-keeping

- The increasingly common use of on-farm management software allows for recording health events,

including lameness and hoof lesions aimed at organizing future tasks (e.g., monthly number of

- calvings, animal movements, etc.).

These records can help determine severity and prevalence of DD infections in different groups of animals, and thus the intensity of DD control programs in specific groups of animals can be modified accordingly.

Skin quality – skin protection

- DD develops from multiple risk factors as a result of a weakening of the skin barrier, due to mechanical irritation and hyper-hydration. Improving skin integrity and enhancing immune response in the presence of bacteria (including Treponema species) that cause the disease will help provide a barrier of protection against the disease.

One way to enhance disease resistance is to provide cattle with an adequate supply of effective trace minerals, which have been shown to play a critical role in wound healing as well as maintaining the health and integrity of skin.

- Research has shown supplementing pre-calving heifers with complex trace minerals helps improve skin recovery from subclinical DD infection and maximizes the resources needed by the immune system to fight infections.

An obvious advantage is the possibility of decreasing DD prevalence even when the use of footbaths and topical treatment is limited or in cattle that are not easily handled on a regular basis, such as pastured cattle.  PD

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of Wisconsin School of Veterinary Medicine.

The first step in controlling DD is to understand the epidemiology of the disease. Digital dermatitis ismultifactorial with a strong bacterial component, namely Treponema spp., which can exist in both active and cystic (dormant) forms. Photo courtesy of Arturo Gomez.

Arturo Gomez

University of Wisconsin

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# LIONELS VET FULL DAIRY HYGIENE PROGRAMME


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