MILK SOUTH AFRICA / MELK SUID-AFRIKA

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Dear milk producer

INVITATION TO THE SOUTH AFRICAN DAIRY INDUSTRY TO PARTICIPATE IN THE DISEASE MONITORING AND EXTENSION SYSTEM OF MILK SOUTH AFRICA

1. Milk SA has decided to engage in the above-mentioned project, because this project can make a huge contribution towards the well-being of the milk producers of South Africa and as it is also in the interests of the consumers in South Africa.

2. The need for an effective disease reporting and early warning system to increase biosecurity, was identified following losses that occurred during the uncontrolled outbreak of Rift Valley fever in 2010. The dairy industry was spared to a large extent because the disease did not spread to the main dairy producing areas of South Africa.

3. After the above outbreak, a basic form of disease reporting was developed, but it is neither fast or interactive enough to be effective in the event of similar outbreaks occurring again and possibly spreading to the main dairy production areas.

4. Milk SA has appointed the Milk Producers' Organisation (which is a member of Milk SA) as the project manager of the project, which in turn has subcontracted Veterinarian Network (V-Net) which will be responsible for the development and operation of the system. V-Net currently also provides a support system for private livestock veterinarians.

5. The initial development of the electronic system is now complete and ready for participation by raw milk producers and their herd veterinarians. Below please find a short preview description of the proposed functioning of the system. Complete information is available to persons who register on the system.

6. Testing of the system will occur in the next phase, before the system is fully implemented, to cover the list of diseases that can impact on the well-being of the South African dairy industry.

7. Participation will of course take a great deal of effort from your and other role-players' side, but the huge advantage to the industry makes it very important that each role-player makes a contribution.

8. All milk producers are herewith cordially invited to register and participate on the system.

Warm regards

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Short discussion (Also see attached presentations)

1. Diseases don't just occur

Diseases follow a development process which is mostly well described and researched. Disease distribution patterns also occur, but they sometimes change and can lead to major losses. Interactions between the following main factors give rise to disease occurrences:

i. Environmental factors.
ii. Animal factors.
iii. The specific disease-causing organism or factor.

Currently we don't have updated disease distribution patterns or fully operational computer models to predict the occurrence of disease due to these interactions, and therefore we need to rely on rapid and on-going reportage of actual disease occurrence for a fast reaction to the situation.

For example the occurrence of insect-borne and tick-borne disease differ vastly from:

i. Year to year.
ii. Season to season.
iii. Month to month.
iv. Region to region.
v. Farm to farm.

The outbreak of Rift Valley fever in 2010 proved the importance of monitoring the diseases at farm level. (See attached presentation for background information.)

The disease reporting system developed by the Livestock Health and Production Group of the South African Veterinary Association, was very successful in providing a basic overview of the monthly disease occurrence for livestock per province in South Africa.

In order to get fast or immediate operational feedback, disease reporting for the dairy industry needs to be species specific. Many diseases have an immediate and long-term effect on milk production and the monitoring and reporting process of these diseases at farm level can also add an additional dimension to the significance of this valuable tool. It will also help to identify the need for increased vigilance concerning these diseases at district level by the dairy farmer and herd veterinarian.

Attention and alertness, involving disease prevention actions should be adapted according to the level and significance of disease occurrence, in the context of three approaches to disease prevention, as well as the current disease resistance status of the herd. The three approaches to disease prevention are:

i. An increase in general resistance.
ii. An increase in specific immunity.
iii. A decrease in or avoidance of exposure to disease causing factors.

One, or a combination of the above-mentioned approaches, are usually used by the dairy farmer and herd veterinarian in planned disease management.

2. Disease monitoring system for the dairy industry

The system consists of a web-based electronic reporting system. All dairy producers as well as their herd veterinarians, who want to participate, can be registered on the system through a unique username and password which will be provided to them.

Three options of reporting will be available:

i. Initial listing of the disease conditions that occur on the farm or immediate district.
ii. Monthly reporting of listed diseases that occurred during that specific month.
iii. Immediate notification of an important disease condition or outbreak when it occurs.

Feedback will be given in a format consisting of the following automated reports:

i. Overview of the distribution of individual diseases in South Africa according to province and district, as listed by dairy farmers and their herd veterinarians.
ii. Monthly incidence of new disease cases by province and district.

iii. Early warning of a confirmed disease outbreak, as well as regular updates of the disease's distribution and spreading during an outbreak, which may be needed for on-going preventative actions.

3. Using one disease to initiate and test the monitoring system

For the purpose of developing an early detection and disease warning system for the dairy industry, lumpy skin disease in cattle is considered the ideal disease for use to develop and test the whole system.

Lumpy skin disease:

i. Is a viral disease with no primary treatment options.
ii. Is transmitted in a number of different ways, including transmission by flying insects which is the primary way of transmission to susceptible animals.
iii. Has an incubation period of approximately two weeks.
iv. Has very distinct and recognisable signs of disease in the clinically affected animal.
v. Occurs widely throughout South Africa and especially in autumn.
vi. Has a major effect on short- and long-term milk production.
vii. Can only be controlled effectively by vaccination of healthy animals.
viii. Is a notifiable disease.

4. Why is the use of only one disease proposed for initial development and testing of the disease reporting and early warning system?

i. Current disease reporting conducted by the Livestock Health and Production Group, indicates that although it is a preventable disease, lumpy skin disease is an on-going problem.
ii. Bottle necks, unforeseeable problems and extra opportunities will occur during the initial development of the approach, but by using one selected disease, the above problems could be identified and corrected before expanding the system to more diseases.
iii. Role-players are also given a chance to make meaningful contributions in the development of the reporting format and success of the system.
iv. It is an enormous challenge to get everybody's commitment and participation in the electronic registration as well as reporting and receiving the reports. **If this works for one significantly important disease in the dairy industry, it could be done for most other diseases.**
v. The financial and production benefits of effective monitoring and control of a disease (like lumpy skin) could be especially significant if it leads to improved advance planning for the availability and distribution of the vaccine in the future.

The development of the system, the participation of all role-players and testing of the results, are extremely important in order to expand to other and more complex diseases that cause mortalities or production loss in the South African dairy industry.

Once the dedicated and interactive electronic disease reporting system is in place, it could also serve as a communication channel to communicate other disease related queries, such as disease surveys or providing targeted disease information for extension purposes.

A dedicated web-based electronic system could be developed and used specifically for the purpose of disease reporting and management. Interactive information could be sent to and received by all participants or selected participants on a short turn-around basis.

There is a great need for extension services related to the prevention of diseases, but it must be extremely targeted because dairy farmers and their herd veterinarians do not have the time to study the overload of irrelevant information.

The electronic system would identify individual farmers who listed or reported specific diseases and this information would be used as selection criteria in order to supply practical disease prevention information to those farmers and their herd veterinarians.