



U-SCAN REPORT

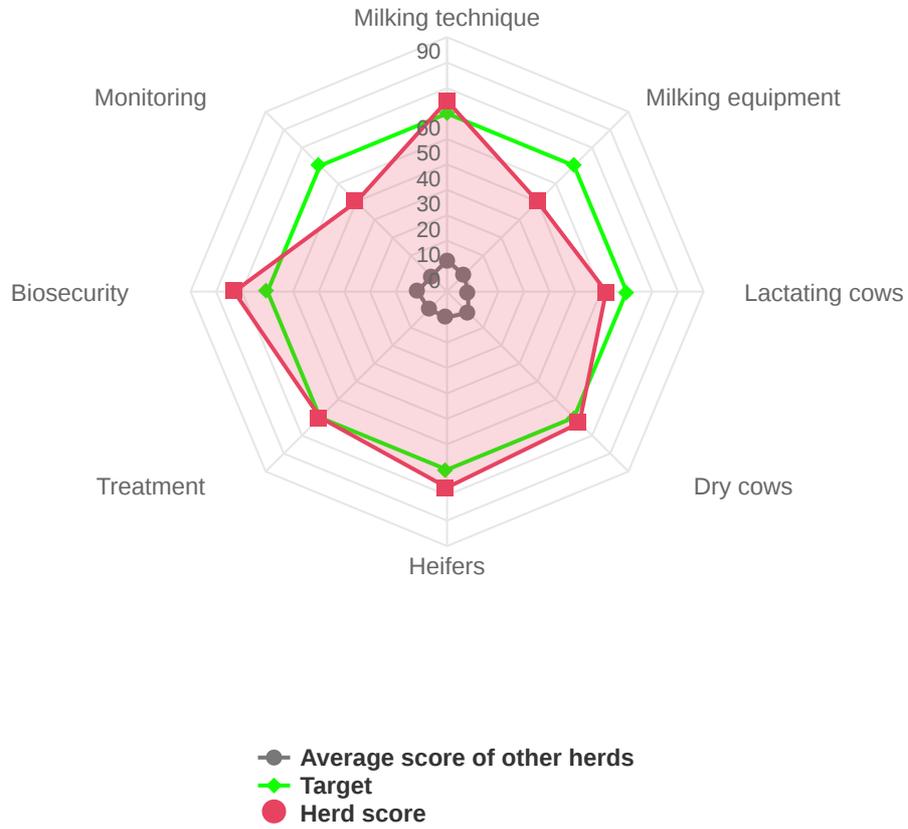
Herd: Dairy Herd Janssens

Advisor: Dimitri Valckenier, DAP MEX



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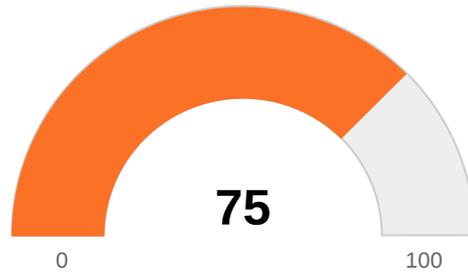
1. UDDER HEALTH MANAGEMENT SCORES



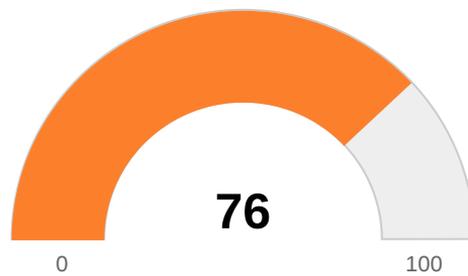
2. U-SCAN RESPONSES

MILKING TECHNIQUE RESPONSES

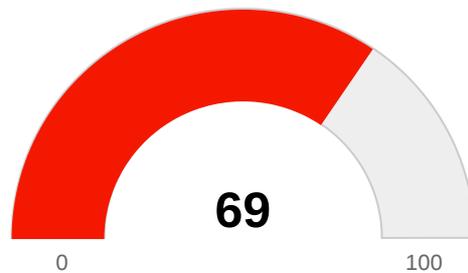
Milking technique: general score (%)



Milking technique: contagious mastitis score (%)



Milking technique: environmental mastitis score (%)



Q: Hygiene measures during the milking process?

A: **Milkers use gloves for more than 1 milking.**

Better approach: Milkers were new gloves for each milking.

Q: Teat cleaning prior to milking?

A: **Single but re-usable cloth towel per cow used.**

Q: Teat cleanliness score: number of teats with hygiene score 1 or 2?

A: **70%.**

Better approach: At least 80% of the teats should have a score 1 or 2.

Q: Postmilking teat disinfection scoring: coverage of the teats measured on at least 10 cows?

A: **Good coverage with barrier dipping product on at least 90% of the teats.**

Q: Are high SCC cows or cows with clinical mastitis segregated and milked last?

A: **No, but milking units are disinfected after milking mastitic cows.**

Better approach: High SCC cows or cows with clinical mastitis are segregated and milk last.

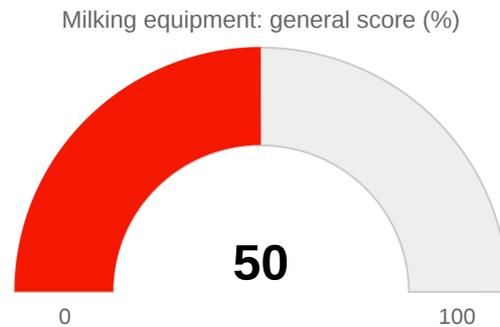
Q: Pre-lag time (from preparation to attachment)?

A: **Between 30 and 60 seconds.**

Better approach: Between 60 and 120 seconds.



MILKING EQUIPMENT RESPONSES



Q: Replacement of the rubber teat liners?

A: **Every 3168 milkings.**

Better approach: Rubber teat liners should be replaced every 2500 milkings, and silicone teat liners every 5000 milkings

Q: Number of cows with red (congested) or blue (cyanotic) colour of the teats?

A: **22%.**

Better approach: Less than 20% of the cows should have these abnormalities.

Q: Number of cows with swelling of the teats ('ringing' at the teat base)?

A: **11%.**

Q: Number of cows with open teat orifices?

A: **8%.**

Q: Number of cows with hemorrhages or petechiation of the teat skin?

A: **14%.**

Better approach: Less than 10% of the cows should have these abnormalities.

Q: Teat end condition score: number of teats with score 1 or 2?

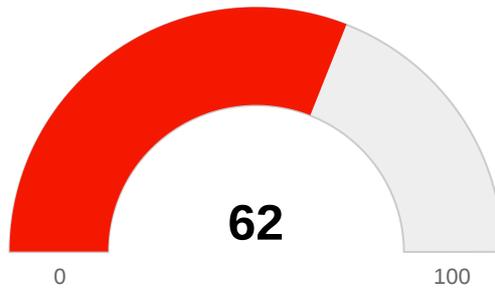
A: **75%.**

Better approach: At least 80% of the teats should have a score 1 or 2.

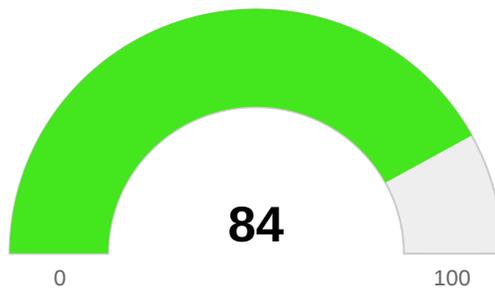


LACTATING COW MANAGEMENT RESPONSES

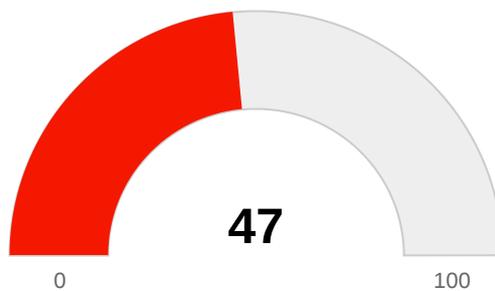
Lactating cows: general score (%)



Lactating cows: infection pressure score (%)



Lactating cows: susceptibility score (%)



Q: Stocking density of the lactating cows?

A: **107%.**

Better approach: The stocking density should be lower than 100%.

Q: Udder hygiene score: number of cows with score 1 or 2?

A: **62%.**

Better approach: At least 80% of the cows should have a score 1 or 2.

Q: Lower leg cleanliness score: number of cows with score 1 or 2?

A: **64%.**

Better approach: At least 80% of the cows should have a score 1 or 2.

Q: Are cows prevented from lying down immediately after milking (for at least 30 min)?

A: **No.**

Better approach: Yes.

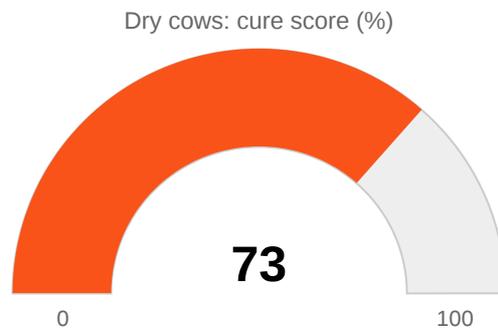
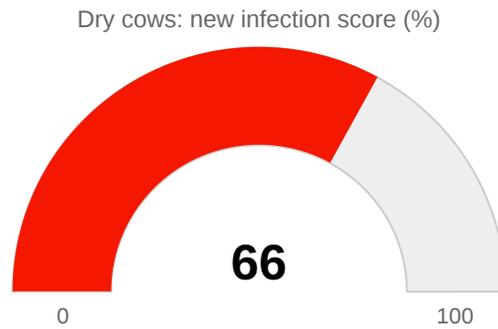
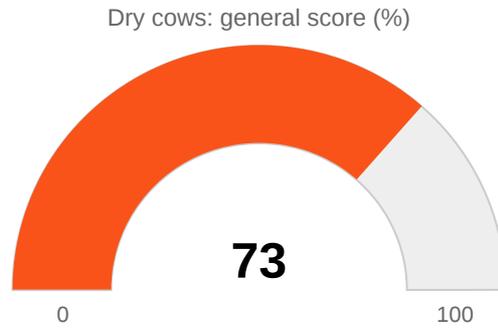
Q: Testing for the presence of Bovine Viral Diarrhoea Virus in the herd at least once a year?

A: **BVD present, regular screening and persistent infected animals are immediately removed.**

Better approach: BVD negative status with regular screening.



DRY COW MANAGEMENT RESPONSES



Q: Stocking density of the dry cows?

A: 32%.

Q: Udder hygiene score: number of dry cows with score 1 or 2?

A: 6%.

Better approach: At least 80% of the cows should have a score 1 or 2.

Q: Of how many animals are the udders and legs of cows soiled with manure in the calving pen/area?

A: In less than 50% of the animals.

Q: Are internal teat sealants used at dry-off?

A: Selective (only noninfected cows).

Q: Is dry cow therapy with long-acting antimicrobial (AM) applied?

A: Blanket, selection of the AM is not based on culture results.

Better approach: Blanket, selection of the AM is based on culture results.

Q: Are teats disinfected before the dry cow therapy and/or internal teat sealants are applied?

A: Yes, with 1 disinfection cloth per 4 teat.

Better approach: Yes, with 1 disinfection cloth per teat.

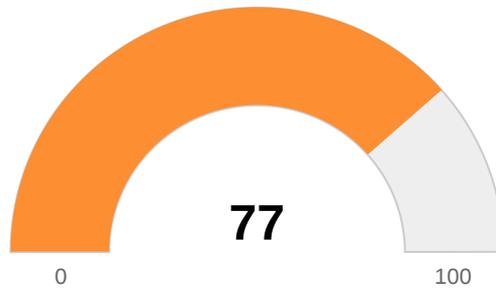
Q: Is milk production reduced to <15 kg/day at dry-off in more than 75% of the cows?

A: Yes.

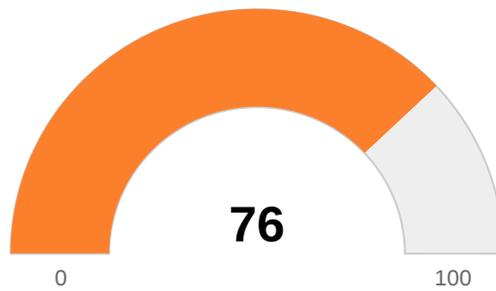


HEIFER MANAGEMENT RESPONSES

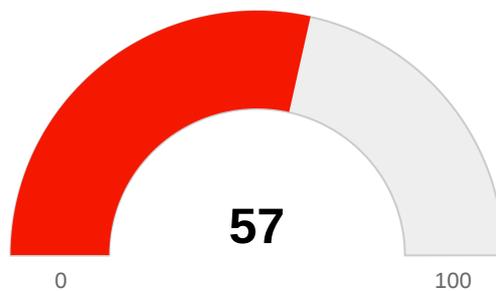
Heifers: general score (%)



Heifers: environmental mastitis score (%)



Heifers: contagious mastitis score (%)



Q: Stocking density of the pre-calving heifers?

A: 71%.

Q: Is appropriate fly control practiced for non-lactating primigravid heifers when on pasture (regular application of pour-on products according to the prescription label, or 2 insecticidal ear-tags/fly-tags)?

A: Yes.

Q: Udder hygiene score: number of heifers with score 1 or 2?

A: 6%.

Better approach: At least 80% of the heifers should have a score 1 or 2.

Q: Is waste milk pasteurized before feeding to calves?

A: No.

Better approach: No waste milk is fed to calves.

Q: How many pre-calving heifers have severe udder edema per year?

A: Less than 10 % per year.

Q: Is contact possible between pregnant heifers and lactating cows before calving?

A: Yes.

Better approach: No.

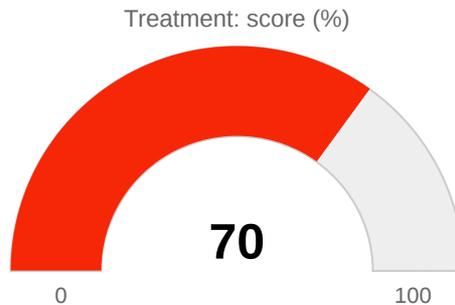
Q: Are internal teat sealants or a teat dip applied in heifers precalving?

A: Yes.



TREATMENT RESPONSES

Treatment: score



Q: What are treatment protocols based on?

A: Blanket antimicrobial treatment, based on culturing results of mastitis pathogens.

Q: Are antimicrobials administered according to the prescription label?

A: No.

Better approach: Yes.

Q: How long are antibiotics used in 90% of the mild cases of clinical mastitis that require treatment?

A: 2 - 3 days.

Better approach: 4 - 5 days.

Q: Is the combination of parenteral/systemic and intramammary treatment used for the treatment of mild cases of clinical mastitis?

A: Only if the presence of Staph. aureus is expected/confirmed.

Q: Is the combination of parenteral/systemic and intramammary treatment used for the treatment of subclinical mastitis?

A: Sometimes.

Better approach: Yes or if the presence of Staphylococcus aureus is expected/confirmed.

Q: Is milk checked for clinical mastitis before attachment of milking unit?

A: Yes.

Q: Are quarters disinfected before and/or after treatment is applied?

A: Only before.

Q: Are off-label (antimicrobial) drugs (e.g. udder infusions) used for the treatment of clinical mastitis cases?

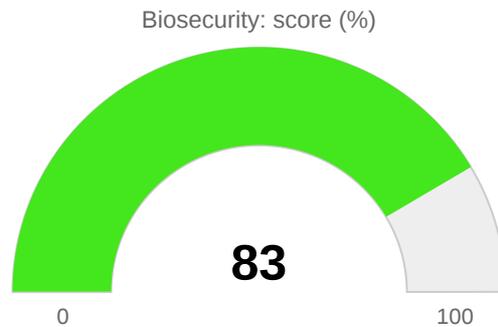
A: **Never.**

Q: Are homeopathic drugs used for the treatment of mastitis?

A: **Sometimes.**

Better approach: Never.

BIOSECURITY RESPONSES



Q: Has this herd been closed for at least one year?

A: **No, but source herd mastitis history is known and milk from purchased animals is cultured on arrival or at calving.**
Better approach: Yes.

Q: Are known Strep. agal., S. aureus, Mycoplasma or Prototheca infected cows segregated and/culled within 1 month?

A: **Yes.**

Q: Are sick cows kept together with fresh cows in a calving/sick pen?

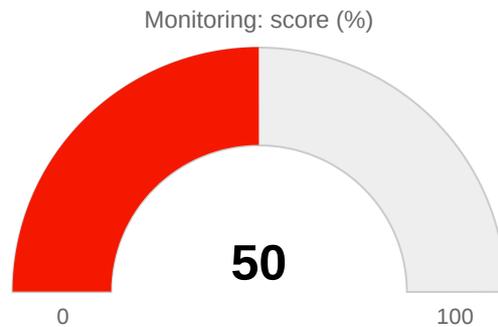
A: **No.**

Q: Are mastitis vaccines used?

A: **Yes, but the selection of the vaccine is NOT based on culture results.**

Better approach: Yes and the choice of the vaccines is based on culture results.

MONITORING RESPONSES



Q: Are individual cow somatic cell counts available?

A: **Yes, every 2 months.**

Better approach: At least every 6 weeks.

Q: Milk from lactating animals with high somatic cell counts is cultured when recommended?

A: **After every test day.**

Q: Are subclinically infected animals treated with antimicrobials during lactation when recommended?

A: **Sometimes.**

Better approach: Always.

Q: Are clinical mastitis records kept?

A: **Yes.**

Q: Are chronically infected cows (> 4 elevated SCC in lactation) culled when recommended?

A: **No.**

Better approach: Yes.

3. SUMMARY AND ADVICE

CONTAGIOUS MASTITIS: RISKS AND SUGGESTIONS

Risk of contagious mastitis: moderate.

The risk of introducing contagious mastitis pathogens such as *Staphylococcus aureus*, *Streptococcus agalactiae*, *Mycoplasma* or *Prototheca* species is very high on this farm as cows are regularly purchased. Fortunately, the cows are tested at the time of purchase for the presence of these contagious mastitis pathogens. In addition, cows with an elevated somatic cell count during lactation are regularly sampled for bacteriological testing.

Moreover, cows that tested positive for *Staphylococcus aureus*, *Streptococcus agalactiae*, *Mycoplasma* or *Prototheca* species during bacteriological culturing are culled within one month or are separated from the other animals.

In addition, the risk of spreading contagious mastitis pathogens from infected to noninfected animals during milking on this farm is limited by a good milking technique. Furthermore, more than 90% of the teats are carefully dipped or sprayed immediately after removal of the cluster, which makes it less easy for any transmitted contagious bacteria to grow and multiply on the teat skin and therefore less likely to cause new infections.

ENVIRONMENTAL MASTITIS: RISKS AND SUGGESTIONS

Risk of environmental mastitis in lactating cows: low.

The infection pressure among the lactating cows in this herd is very low.

Should there still be problems with (sub)clinical mastitis caused by environmental pathogens in this herd, this is probably due to an impaired immunity of the animals.

Risk of environmental mastitis during milking: high.

The infection pressure to which lactating cows in this herd are exposed during milking is high. During pre-milking udder preparation, all teats are cleaned with 1 new cloth per cow. However, the teat hygiene after cleaning and before attachment of the cluster is poor. During milking, the bacteria can detach from the teat skin and be transported towards the open canal end via the milk. This increases the risk of developing new infections with environmental pathogens during milking.

The infection pressure during milking can be reduced in this herd by:

- paying extra attention to teat end cleaning during pre-milking udder preparation. Pre-foaming or pre-dipping the teats with registered cleaning agents can further reduce the number of bacteria on the teat by as much as 85%.

Susceptibility to environmental pathogens: high.

Cows are not kept standing in this herd for up to 30 minutes after milking, so the teat canals are most likely still open when the cows are lying down. In addition, due to a suboptimal milking routine, the teats and teat ends are in poor condition. This increases the risk of bacteria penetrating from the environment into the udder between milking sessions. Fortunately, the teats are dipped with a film-forming dip immediately after removal from the cluster. A film-forming dip protects the teats against the penetration of bacteria from the environment into the udder between milking sessions.

Susceptibility to environmental pathogens can be further reduced in this herd by:

- keeping the cows standing for at least 30 minutes after milking so that the teat canals have the opportunity to close

before the cows lie down.

- replacing the liners on time. Liners that are used for too long unnecessarily prolong the milking process and put extra strain on the teats and udder during milking. Less straining on the teats and udder during milking makes them less susceptible to new infections with environmental pathogens between milkings.
- allowing the milking machine to be measured dynamically. A malfunctioning milking machine puts extra strain on the teats and udder during milking and does not improve teat end condition. This makes the teats and udder extra susceptible to new infections with environmental pathogens between milking sessions.
- respect 60 to 90 seconds between the start of pre-milking udder preparation and attachment of the cluster. This ensures cows have enough time for milk let down, thus better preventing blind milking at the beginning and end of the milking process. Less straining on the teats and udder during milking makes them less susceptible to new infections with environmental pathogens between milking sessions.
- paying extra attention to the infection pressure on lactating cows.
- paying extra attention to the resistance of the lactating cows.

BVD is a viral disease that impairs the immunity of the cows. The presence of BVD on a herd increases the risk of clinical mastitis and is associated with a higher bulk milk somatic cell count. Eradicating the virus from the herd will have a beneficial effect on udder health, and on the global health status of the herd.

Vaccination against mastitis pathogens is a useful tool in the herd management to improve udder health. Vaccination stimulates the immunity of the cows, and can result in a reduced severity of clinical symptoms and a shorter duration of intramammary infections. To maximize the effect, the selection of the vaccine should be based on regular bacteriological examination to identify the most prevalent pathogens.

DRY COW MANAGEMENT: RISKS AND SUGGESTIONS

Risk of new infections during the dry period: high.

The infection pressure during the dry period cannot be controlled properly on this herd. There is no overstocking but the udder hygiene of the dry cows is insufficient.

Moreover, the cows are not dried-off with long-acting antibiotics selected based on the results of bacteriological examination.

A further reduction of the number of new infections during the dry period can be obtained by:

- paying extra attention to the hygiene of the housing of the dry cows. Preferably, the lying area is cleaned at least twice a day and provided with fresh bedding material.
- putting extra efforts in reducing milk production to less than 15 kg/day at dry-off for the majority of the animals - paying extra attention to the hygiene in the calving area.
- drying-off all cows with long-acting antibiotics, possibly in combination with internal teat sealants. If internal teat sealants are already applied, and it may or may not be considered to combine the use of internal teat sealants with long-acting antibiotics, it is recommended that the teat ends are thoroughly disinfected before the intramammary tubes are

inserted. Disinfecting the teat ends before intramammary tubes are inserted reduces the risk of introducing bacteria from the teat skin into the udder when administering intramammary tubes. The use of long-acting antimicrobials at dry-off is especially recommended in case of low cure rates over dry period.

Likelihood of cure during the dry period: moderate.

The likelihood of cure during the dry period is moderate on this herd since not all cows are dried-off with long-acting antibiotics selected based on results of bacteriological examination.

However, there is no overstocking, implying that the cows are less subject to all kinds of stress factors that could undermine the recovery of existing infections during the dry period.

The likelihood of cure during the dry period on this herd can be further increased by:

- drying-off all cows with long-acting antibiotics selected based on the results of bacteriological examination. Should the administration of long-acting antibiotics be effectively considered, it is highly recommended that the teat ends are carefully disinfected before insertion of the intramammary tubes. By doing so, the risk of bacteria being introduced from the teat skin into the udder when administering the intramammary tubes is reduced.

HEIFER MANAGEMENT: RISKS AND SUGGESTIONS

Risk of contagious heifer mastitis: moderate.

The risk of heifer mastitis on this herd is moderate. Mastitis milk is fed to the heifer calves without first being pasteurized. As a result, there is a chance that the heifers will be infected with *Staphylococcus aureus* at an early age. Moreover, pregnant heifers do not have access to pasture yet if they do, they are effectively protected against flies. This reduces the risk of transmission of *Staphylococcus aureus* via flies. The pregnant heifers are in contact with the lactating cows before calving.

However, there is no overstocking, so the pregnant heifers are less subject to all kinds of stress factors that can increase susceptibility to new infections or undermine their recovery when infected.

The risk of contagious heifer mastitis can be reduced on this herd by:

- not feeding mastitis milk to the heifer calves or pasteurizing it before feeding it to the heifer calves. Especially on *Staphylococcus aureus* problem herds, this measure can drastically reduce the risk of contagious heifer mastitis.
- avoiding contact between the pregnant heifers and lactating cows before calving. Especially on *Staphylococcus aureus* problem herds, this measure can drastically reduce the risk of contagious heifer mastitis.
- evaluating the udder hygiene of the heifers.

Risk of environmental heifer mastitis: moderate.

The risk of environmental heifer mastitis is moderate on this herd.

There is no overstocking but the udder hygiene of the pregnant heifers is poor.

However, the udder of the pregnant heifers is protected against the penetration of bacteria from the environment by using an internal teat sealant and/or dipping the teats before calving.

The risk of environmental heifer mastitis can be further reduced on this herd by:

- paying extra attention to the hygiene of the housing of the pregnant heifers. The resting area should preferably be cleaned at least twice a day and provided with fresh bedding material.

If there are still problems with environmental heifer mastitis on this herd, this may be due to:

- an impaired immunity of the pregnant heifers. Reasons for an impaired immunity in pregnant heifers are shortages of vitamins and minerals such as vitamin E and selenium or metabolic disorders such as a negative energy balance.

TREATMENT: RISKS AND SUGGESTIONS

Risk of treatment failure: moderate.

Cows with clinical mastitis are treated on this herd according to a standard herd-specific treatment protocol based on bacteriological examination. The treatment duration is shorter than recommended in the information leaflet.

In case of inferior treatment results, the treatment results on this herd can be further improved by:

- treating the cows according to the package information leaflet and if necessary to even extend the treatment to 4 to 5 consecutive days in consultation with the herd veterinarian.

So far there is no evidence that homeopathic products have a positive effect on the cure of (sub)clinical mastitis in dairy cattle. Should the treatment results on this herd be disappointing, it is highly recommended to switch to the use of antibiotics for the treatment of (sub)clinical mastitis instead of homeopathic products.