Eradication Guidelines
Streptococcus agalactiae (SRA)

Håkan Landin[1], Jonas Carlsson[1], Jörgen Katholm[3], Laura Kulkas, Erik Rattenborg[3],
Liv Sölveröd[2], , Anne Cathrine Whist[2], Olav Østerås[2]
[1]Swedish Dairy Association, Stockholm, Sweden, [2]Tine Dairy Industries, Ås, Norway,
[3] Knowledge Center for Agriculture, Aarhus, Denmark, [4]Valio R&D, Tampere, Finland

Before implementation of the eradication program

1) Reduce the risk of new intramammary infections in the herd

- Optimize milking hygiene, milking routines and milking equipment
    i. Milk with gloves in conventional farms, implement extended routines for hygiene in teat preparation systems in AMS
    ii. Prepare cows 60 – 90 s before attaching the teat- cups in all systems
    iii. Select the optimal liner to cows in herd
    iv. Use take off level 300 ml/min in AMS and 400 ml/min in conventional farms
    v. Perform a Dynamic Vacuum Test of the system
- Use a teat-dip with high content of iodine and documented effect against SRA
- Implement blanket dry cow therapy for 12-18 months

2) Make a rough cost-benefit analysis of the program

- An Excel sheet is enough accurate for the calculation
- If more than 10% of the cows are infected, a reduction in somatic cell count between 100.000 – 150.000 cells/ml can be expected
- The bulk milk somatic cell count and the total bacterial count will become more stable
- A significant reduction of cases of acute mastitis can be expected
- The cost for extra labor time spent on suggested actions should also be considered

3) Evaluate the chances of success in the herd

- The eradication will fail without a safe and functional segregation
- Discuss a consequent strategy within the herd regarding hygiene and biosecurity efforts
- Is it possible to have healthy, treated and infected lactating cows totally separated?
    i. In Calving pen
    ii. During the transition period 3 weeks before and after calving
    iii. Cubicles or laying areas
    iv. Feeding and watering areas
    v. Milking parlors
    vi. Pasture
    vii. Drying off and dry period
- Continuous segregation of treated SRA positive cows is recommended

4) Eradication Survey

- Identify the best period to start the eradication program
    I. The possibilities of culling as many carriers as possible should be considered
    II. Look into the calving-list for an overview
    III. Preferably launch the program when many cows are close to drying off or pasture
- Describe start , management efforts, follow ups and goals in time and money

Eradication actions

1) Identification of carriers

- Sample all lactating cows
- Use composite milk samples and PCR analysis or bacteriologic culturing
    i. PCR is regarded first choice
    ii. Always use bronopol additive when the analysis is performed with PCR
    iii. DHI sampling and PCR is time effective and recommended, especially in AMS herds
    iv. Confirm weak or uncertain DHI PCR results with manual aseptic sampling ASAP
    v. Quick resampling of negative lactating cows can secure a higher safety level
- Sample all cows after calving for the coming 12 months

2) Handling of carriers

- Isolate culture positive cows and/or cows with a Ct-value < 37 ASAP
- Evaluate isolated cows on SCC data, udder palpation and teat inspection
- Divide the isolated cows after test result, SCC, evaluation and prognosis
    a) Clinical or subclinical infection with SRA but no signs of chronic mastitis
    b) Clinical or subclinical infection with SRA with signs of chronic mastitis
- Only cows in group a) should be considered for antibiotic treatment
- Cows in group b) are advised for culling ASAP

3) Antibiotic treatment

- Treat SRA positive cows for 3 days with penicillin intramammary in all 4 quarters. Systemic treatment is a possible additional choice. Cows in early lactation with no previous history of mastitis or SRA may have an expected cure rate up to 80 %
- SRA positive cows in late lactation could be dried off and treated with DCT in all four quarters

4) Follow-up

- 2-4 weeks after the withdrawal period for antibiotics the treated cows and the formerly negatively tested cows are tested again with similar methodology
- All treated cows that are still infected are advised for culling ASAP
- Cows selected for DCT should later be tested within their first week of lactation
- Cows with a successful treatment story should continuously be kept separated from those who were classified as healthy at first testing

5) Monitoring of herd after eradication

- Bulk tank samples are tested with PCR for 12 months as scheduled below
- In herds with more than 100 lactating cows BT samples can be repeatedly false negative
- If a BT sample is found positive a reactivation of the program should be considered

Classification of herds with BT PCR samples

Free	All herd sizes	**≥** 4 consecutive and evenly distributed bulk tank samples during 12 months and Ct > 40
Doubtful	All herd sizes	1 bulk tank sample 37 < Ct ≤ 40
SRA Herd	All herd sizes	1 bulk tank sample Ct ≤ 37

Abbreviations

AMS - Automatic Milking System
ASAP- As Soon As Possible
BT – Bulk Tank
Ct – Cycle Threshold value (in PCR)
DCT – Dry Cow Therapy
DHI – Dairy Herd Improvement
SRA – Streptococcus agalactiae
PCR- Polymerase Chain Reaction