

## 8 Summary

### **Efficacy of an internal teat sealer during the dry period**

The efficacy of the teat sealer OrbeSeal<sup>®</sup> was evaluated in two independent field studies. In a first study to 359 cows of a dairy farm in Brandenburg was applied to compare the combined use of a conventional dry cow antibiotic (Orbenin extra<sup>®</sup>) with the teat sealer OrbeSeal<sup>®</sup> against the use of the antibiotic (Orbenin extra<sup>®</sup>) alone in the Splitted-Udder-Design.

The control and treated quarters were comparable concerning the somatic cell count, glandular tissue and teat duct hyperkeratosis.

The bacterial examination of samples immediately post partum as well as five to eight days post partum revealed that the treated (Orbenin extra<sup>®</sup> + OrbeSeal<sup>®</sup>) quarters had a higher rate of non-infected quarters (at calving: control 87,8 % vs. treated 91,0 % and 5 - 8 d p.p.: control 82,1 % vs. treated 86,4 %).

Moreover the probability of a new infection was 27,1 % lower in the period from dry off to calving in the treated quarters.

In cows with a predisposition of intra mammary infections according to high milk yield before dry period or teat duct hyperkeratosis the protective effect of the teat sealer was pronounced.

In the second study 301 cows with an average cell count under 200.000 cells/ml in the last three month before dry off, as well as more than a clear (++) positive result of the California-Mastitis-Test (CMT) in one quarter were included.

Cows were split into three groups: One group was treated with a combination of OrbeSeal<sup>®</sup> plus Orbenin extra<sup>®</sup> (group A). One group only received OrbeSeal<sup>®</sup> (group B) and the quarters of the third group were individually treated in dependence of the CMT result (group C). In group C quarters with a negative or slightly (+) positive CMT-result were treated with OrbeSeal<sup>®</sup>, and those quarters with a clear (++) or higher positive result with the combination of Orbenin extra<sup>®</sup> and OrbeSeal<sup>®</sup>.

The study showed that the number of new infections was highest in group B (from dry off to calving: 7,9 %, from dry off to 7 - 14 d p.p.: 9,5 %, from calving to 7 - 14 d p.p.: 9,2 %), while the new infections in group A (from dry off to calving: 3,7 %, from dry off to 7 - 14 d p.p.: 6,4 %, from calving to 7 - 14 d p.p.: 5,5 %) and group C (from dry off to calving: 7 - 14 d p.p.: 4,7 %, from dry off to 7 - 14 d p.p.: 6,9 %, from calving to 7 - 14 d p.p.: 6,9 %) were comparable.

## Summary

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The probability of a new infection in the period between dry off and calving was highest in group B compared to group A (55 %) and group B (50,4 %).

All three groups also were comparable concerning somatic cell counts (geometric average: group A, B, C: 81,6 vs. 109,8 vs. 95,0) and the incidence of clinical mastitis (group A, B, C: 12,6 % vs. 11,2 % vs. 11,9 %). However it is noteworthy that two cases of clinical mastitis appeared in group B as well as one in group C during the dry off period.

Furthermore 63,8 % antibiotics could be saved in the quarter individual group C in comparison to the combined dry off, without a negative effect on udder health.

In summary it can be said that an additional treatment with an internal teat sealer guarantees a better prophylaxis against intramammary infections over to the solely application an antibiotic.

This was especially pronounced in treating quarters with a predisposition for intramammary infections.

To reach a reduction in using antibiotics it is necessary to select healthy udder quarters in an individual way.

A remarkable result of this study is that the efficacy of quarter individual dry off based on results of CMT-tests is equal to the combined dry off.