

SELECTIVE DRY COW THERAPY

What is it and why use it?

In Italy 50% of farmers use intramammary antibiotics on all the cows at the beginning of dry period to prevent future mastitis and to stop eventually ones in act (Blanket dry cow therapy). This causes a selection of resistant microorganisms. One solution may be the use of selective dry cow therapy, that consists in the selection of eligible cows, that could be not treated at the end of lactation, because they don't present clinical or subclinical mastitis or a previous career with chronic ones. The use of nipple sealants is recommended on other cows.

What should farms take into account for applying selective dry cow therapy?



- Excellent cleaning of equipment, environment and animals
- Frequent renewal of bedding materials
- Reduced humidity and well ventilated spaces
- Daily checks of dry cows to promptly identify problems
- Accurate management and maintenance of milking systems to not over-milking or damage teat apex during lactation



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What are the criteria for identifying cows that should not be treated with antibiotics?

1. Evaluation of clinic mastitis during cow career
 2. Evaluation of somatic cell count
 3. Evaluation of differential somatic cell count
- More details will be provided in data sheet 3.

What are differential somatic cells? How they can be used?

Milk somatic cells consists of leukocytes, which, in turn, consists of three fractions (differential somatic cells):

1. Lymphocytes = regulate the immune response since the start of infection
2. Macrophages = ingest cell debris and bacteria and detect eventually pathogens present in organism
3. Neutrophils = main actors of immune response

During a mammary infection there is an increase of neutrophils versus a decrease of macrophages, which act in a second moment. For this reason, neutrophils are pointers of mammary health status.

In some types of analysis there is no way to identify the single fractions of leukocytes, but Differential somatic cell count (DSCC), determined as follows:

$$DSCC = \% \frac{\text{neutrophils} + \text{lymphocytes}}{\text{total somatic cell count}}$$

Which benefits of selective dry cow therapy?

- Reduction of 22-37% of antibiotic use
- Reduction of the risk of developing antibiotic resistance in bacteria
- Major animal welfare
- Lower costs for the purchasing of antibiotics
- Compliance with current regulations on conscious use of drugs

