



The logo features a stylized black silhouette of a building with seven vertical spires of varying heights. To the right of this graphic, the letters 'NMC' are written in a large, bold, red sans-serif font. Below 'NMC', the text 'Milano2018' is written in a black, medium-weight sans-serif font.

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STAPHYLOCOCCUS SPP. IN THE MILK OF DAIRY COWS TREATED FOR MASTITIS WITH A HOMEOPATHIC FORMULATION

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This study focused on determining the relationship between staphylococci and the somatic cell count (SCC) and milk production of cows with subclinical mastitis treated and not treated with a homeopathic formulation, and on monitoring these microorganisms monthly for one year. The herd comprised 50 Holstein cows, and the number of milked cows remained approximately the same during the monitoring period. The lactating animals were subjected to the same procedures before, during and after milking, following technical recommendations for mastitis control. Milk samples were collected to investigate the infectious etiology of the disease and the SCC in the milk, an analysis indicative of the inflammatory response of the mammary gland to the infection (NIGHTINGALE et al., 2008). Milk production was also evaluated. Pooled milk samples were collected from the mammary quarters for microbiological analyses (GUIMARÃES et al., 2016). Subclinical mastitis was diagnosed whenever a combination was found of staphylococci isolates and a SCC of more than 200,000 cells/mL of milk (KOT et al., 2016). Milk samples for microbiological diagnosis were collected in duplicate. Lactating cows were evenly divided into two groups before treatment, according to the SCC, milk production and cases of mastitis caused by staphylococci. One of these groups comprised animals treated with a homeopathic formulation and the other comprised untreated cows. The choice of active ingredients for the treatment was based on technical advice from a homeopathic specialist, who helped prepare the formulations and explained how to administer them to the animals. The homeopathic compound consisted of Belladonna (12 CH), Hepar sulphur (12 CH), Silicea (12 CH), Phosphorus (12 CH) and Phytolacca decandra (12 CH), which were added to the feed of 50% of the lactating cows. The other half received placebo, with sugar added to their feed, without the homeopathic compound. The species most isolated in the milk of cows with mastitis in the treated and untreated groups was *S. aureus*, i.e., 32.5% and 41.3%, respectively, which is equivalent to 35.8% of the total cases of staphylococcal mastitis. This was followed by *S. simulans* and other coagulase-positive staphylococcal species, which were isolated in 22.0% and 21.1% of the total number of cases of staphylococcal mastitis. In the group treated homeopathically, the average SCC was higher than 200,000 cells/mL during nine of the 12 monitored months. Such values are indicative of inadequate milk quality. The average milk yields in the treated and untreated animals were 27.5 and 30.5 liters, respectively, which were lower than the pretreatment yields. The group treated homeopathically showed one exception in the 11th month of monitoring, when the average yield was 27.8 liters, which is close to that obtained before treatment. Microbiological isolates of staphylococci persisted in treated and untreated cows. The homeopathic treatment did not interfere in the control of staphylococcal mastitis, nor did it improve milk production and quality, probably because, contrary to expectations, it did not improve the immune response of the animals or because of the ability of *Staphylococcus* spp. to overcome the animal's immune defenses by means of pathogenic factors, which are still to be investigated. Other strategies for disease control should be explored, since the presence of *Staphylococcus* spp. in milk poses a risk to the consumer, even when the product is subjected to heat treatment. Financial support: Grant no. 2017/08979-7 from São Paulo Research Foundation (FAPESP).

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