Bovine Somatic Cell Count and Mastitis Bacterial Strains

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Mastitis (inflammation of the mammary gland) is an economically important health issue in dairy herds. Previous studies found correlations between high somatic cell count (indication of inflammation) and lower milk production, greater risk of culling and reproductive problems. This study used data from DHIA on one herd (n=74) of Jerseys to perform statistical analysis on the relationship between average SCC for first lactation and milk production, protein, and fat (lbs). I hypothesized a higher SCC would have a negative correlation on milk and component production, and the correlation between milk fat and protein would be positive. This study also concerns milk culturing to gain a more specific knowledge of the pathogens infecting high SCC cows. In selecting my group of 10 cows to culture, I chose the cows with the highest SCC last test, excluding any cows going to be dried off next month. Milk samples were plated on bi-plates (blood and MacConkey agar) to examine the bacterial strains present, and determine the best course of action for treatment. I hypothesized the cows with higher SCC would be more likely to have a growth of some kind, and the organisms cultured would be environmental. The results of this study will give my farm a greater understanding of the impact of high SCC on our production. This is particularly significant, since 2018 marks the fourth consecutive year of abysmal US milk prices. Any production loss due to mastitis is necessary to address. With this better understanding, dairy farmers will be able to use less antibiotics, which will save money. This meets the goal of using antibiotics more judiciously in the dairy industry. The overall goal is to better our herd health program, and encourage other farms to do so.

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