

2. EFFECT OF MASTITIS ON QUARTER MILK YIELD RESPONSE TO IMPROVED FEEDING

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This study was carried out to investigate the effect of mastitis on quarter milk yield response to improved feeding and the resulting implications on returns of costs incurred in feed quality improvement. The effect of mastitis on aspects of milk composition was also studied. A change over design experiment lasting 66 days was used. Two diets (Conventional and Improved) were fed to 16 cows, randomly divided into two groups of eight per group. Cows selected had at least one quarter positive for mastitis. Mastitis was detected and scored using the California Mastitis Test (CMT). Repeated quarter records were taken for each quarter during periods I and II of the experiment. A total of 366 and 372 records were taken under improved and conventional diet feeding respectively. Mastitis caused a significant reduction, ($P < 0.01$) in quarter milk yield. When compared with healthy quarters, response to improved feeding in mastitis quarters was reduced by 6.6% to 23.3% depending on the severity of mastitis, as determined by CMT score. Mastitis had no significant effect on quarter butterfat percentage ($P > 0.05$). Butter fat yield response to improved feeding increased by 5.8% in quarters with CMT score of trace but was reduced by 9.17%, 7.4% and 8.5% in quarters with CMT scores of +1, +2, and +3. Mastitis caused a significant reduction in quarter lactose percentage ($P < 0.01$). Lactose yield response was reduced by 25%, 13.7%, 24.6% and 21.9% for respective CMT scores of trace, +1, +2 and +3. Quarter chloride percentage was significantly increased ($P < 0.01$) by mastitis. Chloride yield response however reduced by 43.7%, 21% and 41.1% for CMT scores of trace, +1, +2, and +3 respectively but increased by 11.8% at CMT score of +2. Returns to costs incurred in feed improvement were reduced by an estimated 20% of projected returns per cow per year, as a result of subclinical mastitis. It was concluded that mastitis infection reduced returns on costs incurred in feed improvements. It was therefore recommended that control of mastitis should always be undertaken together with any feeding improvements, or other manipulations designed to increase milk yield of lactating dairy cows.