

ISSUES WITH MONITORING DAIRY FOULING IN HEAT EXCHANGERS

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ABSTRACT

Various techniques are available to monitor fouling in heat exchangers. In the current study, we have monitored milk fouling in a plate heat exchanger using several different techniques: temperature, heat transfer coefficient, pressure drop, deposit mass, visual observation of deposit pattern, and chemical analysis of fouling deposits. While all these techniques are useful in their own right, the experimental results show that at times it may not be possible to correlate the fouling trends obtained from one technique to another. Some observations are made as to which technique may be useful to monitor fouling in an industrial dairy processing application where strict hygiene requirements may limit the amount of instrumentation that can be used.