ABSTRACTS
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109 New technologies and decision-making tools for high producing herds. Lawrence Jones*[1], [1]*FARME Institute, Inc., Homer, NY.*

As herds reach higher production levels, attention to detail in managing these herds must increase exponentially. The main issue in achieving 60 liters or more per day average production is to reduce stress on all aspects of the cows livelihood and to maximize dry matter intake. Cows must be housed in clean comfortable conditions, fed rations that support ruminal and general health, monitored for early detection of problems, and provided interventions when problems arise. Like the poultry and swine industry, housing systems for high producing dairy cows will incorporate environmental control systems to monitor and control temperature and humidity. Similar monitoring and control systems will be used to ensure that milking equipment is functioning properly and that milk is harvested without trauma. During the milking process, biosensors will be used to assess the health status of cows. Potential biosensors include conductivity, milk temperature, somatic cell content, as well as specific hormone measurements. With the adoption of electronic identification of animals, automated measurements such as activity and body weight are possible. It is nearly impossible to manually evaluate all data that can be collected on a high producing herd. Computer systems that utilize management-by-exception techniques provide early detection of trends and problems. Real-time electronic systems will be able to divert the deviate cow immediately after milking for inspection and treatment. Another decision making tool is the use of sentinel animals to monitor a group. These animals can have ruminal cannulae or routine blood profile monitoring. In addition to monitoring, high-producing herds also require intervention protocols (e.g., programmed ovulation for reproduction) to prevent animals from being culled involuntarily. Other bio-manipulations (e.g., bST) can be used to better utilize nutrients.

Key Words: Production, Monitoring, Biosensors