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Penn State research reveals long-term impact of calthood events on cow productivity

By JANE FYKSEN
CROPS EDITOR

Cow health, productivity and profitability begins in calthood, according to Penn State University research published in several papers in the Journal of Dairy Science.

The study investigated possible relationships between management and health events that occurred during calves' first four months of life and their future performance. Data for this study was collected over 10 years and included management, nutrition, and health information for calves, measurements at first calving, lifetime lactation records, and age at culling.

Says Penn State University dairy scientist Jud Heinrichs—one of the foremost heifer-rearing experts in the country: "Research has shown that many components of the way we manage calves can have long lasting effects on the dairy animal. Calf health is one of the factors that can have long-term effects on the productivity, and therefore profitability, of the dairy animal."

Very few studies have taken those factors and followed dairy calves through to calving, their first lactation, and their complete lifetime production—until



Photo by Jeffrey Hoffelt

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now.

Heinrichs and fellow researchers studied calf nutrition, health, management and other variables to determine their short and long-term effects on the animal. They followed 795 calves from 21 farms in two counties in Pennsylvania, closely following the calves as they were born, and keeping track of all feed intake, health, housing and management practices during their growing period.

That was followed by calving data and lactation records.

Sixty-eight different variables were followed on all heifer calves until they began their lactations. "Our statistical analysis allowed us to include this large amount of information while accounting for farm differences, and at the same time, reducing bias caused by missing data," Heinrichs explains. "The resulting analysis is more 'generalizable'

for outcome measures such as milk production."

He says one of the "interesting things to note" from this work is the cost of sick calves and the benefit of treating them. To explain this in regards to production costs, all calf health incidences—whether respiratory illness, serious diarrhea, or other events—were grouped together.

The final analysis of this data showed that for every day a

pre-weaned calf was clinically sick, that animal—as an adult cow—produced 277 fewer pounds of milk in her first lactation (on a 305-day mature equivalent basis) than her counterparts that were healthy, Heinrichs reveals.

"Calves that were treated for being sick had a positive response of 440 pounds of milk," he states. To expand this finding to some

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