Ontario bulk tank somatic cell counts (SCCs) peak in the late summer months every year. This consistent seasonal pattern can significantly affect your herds’ milk quality and farm profitability. University of Guelph researchers have confirmed consistent management practices that minimize cow teat exposure to environmental bacteria are essential to maintaining acceptable SCC levels during the summer months and beyond.

Population medicine professors David Kelton and Stephen LeBlanc, and former PhD student Dr. Dan Shock, conducted the research. They focused on identifying and understanding the impact of the environment, management choices and exposure to numerous pathogens associated with high bulk tank SCCs, to prevent the summertime spike.

A SCC is an indirect indicator of mastitis, an inflammation of one or more mammary glands caused by bacteria. A cow’s immune system responds to a bacterial infection by sending white blood cells to the udder to help fight the infection. This results in SCC increases in milk.

Shock’s research focused on risk factors associated with mastitis, and increases in bulk tank SCCs that typically occur from May to August. “Previous studies have focused on cow-level risk factors for summer mastitis, there are very few studies focused on herd-level risk factors,” says Shock.

Shock’s team studied 50 different herds across Ontario and collected data from milk recording reports. The herds were separated into two categories: herds with large summer increases in bulk tank SCCs, and herds with consistently low SCCs. The researchers visited each herd three times over a four-month period. At each visit, they collected data on milk quality, milking procedures, cow hygiene, teat and udder condition, as well as barn temperature and humidity, and environmental management.

They found high SCC herds were more likely to have dirty teat ends before the cluster was attached. This signals udder preparation procedures were less effective in these herds, says Shock. Farms with a high SCC took less time to milk their cows compared with farms with a low summer SCC.

The summer months are among the busiest for dairy farmers, says Shock. It may be that in an attempt to finish milking quickly, producers’ attention to detail drops during this period, he adds.

Herds with significant SCC increases had a higher number of new subclinical mastitis infections. This is based on individual cow DHI reports. These herds also had a greater number of chronic infections toward the latter half of the summer. Based on milk culture results, a greater proportion of these infections were associated with mastitis-causing bacteria of environmental origin, such as Streptococcus species, which thrive in heat and humidity.

Kelton and Shock are trying to raise awareness among producers of the risk factors associated with mastitis and summertime SCC increases. They expect to publish their results soon.

“Our research reaffirms the fact, there needs to be consistency and cleanliness to have high-quality milk,” says Shock. “The industry should focus on maintaining high-quality milk throughout the year. Anything we can do to mitigate summertime high SCC risks will mean better animal health, milk quality, and profitability for farmers.”

India Annamanthadoo is a student writer for the University of Guelph’s office of research. Shock’s research was funded by Dairy Farmers of Ontario, and the Highly Qualified Personnel Scholarship provided by the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA). Collaborators include University of Guelph professors Ken Leslie and Jason Coe, along with Ann Godkin, OMAFRA, and Karen Hand, Strategic Solutions Group.