

Oregano-Based Feed Supplement Found To Reduce Methane Emissions In Dairy Cows

University Park, PA—Cow belches, a major source of greenhouse gases, could be reduced by a feed supplement developed by a Penn State dairy scientist.

In a series of laboratory experiments and a live animal test, an oregano-based supplement not only reduced methane emissions in dairy cows by 40 percent, but also improved milk production, according to Alexander Hristov, an associate professor of dairy nutrition at Penn State.

Methane production is a natural part of the digestive process of cows

and other ruminants, such as bison, sheep and goats. When the cow digests food, bacteria in the rumen, the largest of the four-chambered stomach, break the material down into nutrients in a fermentation process. Two of the byproducts of this fermentation are carbon dioxide and methane.

Experiments found another benefit of the gas-reducing supplement. It increased daily milk production by nearly three pounds of milk for each cow during the trials.

Hristov anticipated the higher milk productivity from the herd.

“Since methane production is an energy loss for the animal, this isn’t really a surprise,” Hristov said.

Hristov said that finding a natural solution for methane reduction in

cattle has taken him approximately six years. Natural methane reduction measures are preferable to current treatments, such as feed antibiotics.

He first screened hundreds of essential oils, plants and various compounds in the laboratory before arriving at oregano as a possible solution. During the experiments, oregano consistently reduced methane without demonstrating any negative effects.

Following the lab experiments, Hristov conducted an experiment to study the effects of oregano on lactating cows at Penn State’s dairy barns. He is currently conducting follow-up animal trials to verify the early findings and to further isolate specific compounds involved in the suppression of methane. **CR**