



\*\* This news release from K-State Research and Extension is available online at <https://ksre-learn.com/agriculture-cattlemens-day-essential-oils>

**Note to editors:** A photo to accompany this story is at <https://www.flickr.com/photos/ksrecomm/50041319341>

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## **K-State Cattlemen's Day: Hello essential oils and goodbye ionophores?**

K-State beef systems specialist researching the effects on stocker cattle performance

*By [Jacob Klaudt](#), K-State Research and Extension news service*

MANHATTAN, Kan. — Negative public perception and increasing governmental regulations have researchers seeking alternatives to antibiotic use in livestock. Ionophores – an antibiotic that alters rumen microbial populations to increase efficiency – have been temporarily banned in some countries.

If this occurs in the U.S., Kansas State University beef systems specialist Jaymelynn Farney said other feed supplements need to be evaluated to maintain current production levels.

In response to this change in animal husbandry, Farney and her team at the Southeast Agricultural Research Center in Parsons have started examining whether essential oils make a satisfactory substitute for ionophores.

“Some essential oils have similar ruminal effects as ionophores and impacts on feed efficiency, volatile fatty acid production and other efficiency areas,” she said. “We were interested in looking at this in stocker cattle because most of the work has been in feedlots or in vitro.”

Farney used 281 head of blackhided steers split into eight pastures. Four groups received free-choice mineral infused with essential oils, and the others infused with ionophores.

“We found that they performed essentially the same,” she said. “We had a 2.15 lb. average daily gain for ionophores and a 2.13 lb. average daily gain for essential oils over 90 days.”

She added: “The cattle fed ionophores gained 204 pounds total, and the essential oils group put on 203 pounds. Also, both groups had a very similar intake of mineral.”

While metrics like mineral consumption were comparable, the actual cost of the two supplements differed. Farney said the price of Solus – the brand of essential oil examined – calculated to \$13.09 per unit while the ionophores cost \$14.34.

“We fed a garlic oil product plus the Solus – a proprietary blend of ingredients,” Farney said. “When you open the mineral bag, you smell cinnamon, oregano, lemongrass and capsaicin.”

Outside of determining differences in performance, Farney has also set out to observe changes in functional behavior through GPS ear tags. Researchers noted no differences in the amount of time eating, resting, walking and ruminating. Yet, they saw a trend in slightly elevated heart rates in the animals fed essential oils.

“This was intriguing because many essential oils have been identified and marketed as vasodilators, or substances that allow for easier blood flow,” Farney said. “We're not sure yet if that means anything to performance, but it was cool to see.”

This study will be conducted annually for four more years as a part of an overarching research project, said Farney. After her team collects the data and comes to conclusions, she hopes their results open a natural marketing avenue for producers.

“One of the big downsides of natural and organic systems is that ranchers have to get paid a significant premium because cattle do not gain as well as without antibiotics (ionophores),” she said. “If you can increase gain and feed a product like an essential oil that could be certified through those marketing schemes, you might get the best of both worlds.”

Farney will present her team’s results during [K-State’s 112th annual Cattlemen’s Day](#), set for Mar. 7 at the National Guard Armory in Manhattan. Her session will take place during the morning portion of the program.

Registration costs \$25 for those who register by Feb. 21 at noon, or \$35 on the day of the event. There is no charge for students who pre-register. [Registration is available online.](#)

*Brand names appearing in this article are for identification purposes only and does not imply endorsement or disapproval by Kansas State University of any particular product.*

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**FOR PRINT PUBLICATIONS:** Links used in this story

K-State’s 112th annual Cattlemen’s Day, <https://www.asi.k-state.edu/events/cattlemens-day>

K-State’s 112th annual Cattlemen’s Day registration, <https://www.asi.k-state.edu/events/cattlemens-day>

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**Story by:**

Jacob Klaudt

[jbklaudt@ksu.edu](mailto:jbklaudt@ksu.edu)

**More information:**

Jaymelynn Farney

620-820-6125

[jkj@ksu.edu](mailto:jkj@ksu.edu)