Michael Kleinhenz and Hans Coetzee, veterinary researchers at Kansas State University, are studying the use of industrial hemp to reduce pain and improve well being in livestock.

Hemp Shows Promise As Cattle Feed

Two researchers at Kansas State University are making progress on studies that involve feeding industrial hemp to cattle. Michael Kleinhenz and Hans Coetzee, veterinary researchers at K-State, have studied the use of cannabinoids to reduce pain and improve well being in livestock. Kleinhenz is an assistant professor in beef production medicine, while Coetzee, also a professor, is head of the anatomy and physiology department in the College of Veterinary Medicine.

"We were looking at the use of CBD in pain mitigation, as one of the big claims is that it helps with chronic pains," Kleinhenz says. He and Coetzee collaborated with a colleague from K-State's horticulture department who was growing hemp for CBD production in a research setting.

"Out of the blue he's like 'I've got 20 lbs. left from my seed cleaning, would you guys be interested in trying to do something with it?'" Kleinhenz says. "We looked at each other and said, 'I wonder if this would make good animal feed?'"

The researchers found a lab to evaluate the hemp for nutrients and conducted their own cannabinoid testing. As they continued their research, Kleinhenz and Coetzee realized that at present there isn't a similar hemp feed product on the market and there are many parts of the hemp plant that can be used as cattle feed, post- harvest and post-processing.

In recent months their research has stalled, but they've had conversations with the Food and Drug Administration and Kleinhenz says the FDA has been "very helpful" in directing the study. Because the effects of cannabinoids on livestock is unknown, the feed would need FDA approval before it gets produced. Kleinhenz hopes by early 2021 they will be able to study tissue residue profiles on cattle and, by the summer, move into studies on how the feed affects milk production.

Coetzee and Kleinhenz conducted a 14-day feeding trial with 16 calves. They fed 8 calves hemp feed and the other 8 non-hemp feed. "We saw some behaviorial differences in how they spent time lying down and moving," Kleinhenz says. "We didn't see any benefits or harm in terms of production parameters and average daily gain from feeding hemp."

If the feed is approved for market distribution, Kleinhenz says it could be a lower-cost alternative for producers. With grain prices continuing to rise, farmers could choose the hemp product not only to save money, but to also have healthier livestock. In agriculture, Kleinhenz believes hemp residue products will continue to gain popularity in coming years.

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Scale Uses WiFi To Monitor Bee Hives

With the new WiFi Hive Scale beekeepers can monitor their hives from a computer, cell phone or tablet. The setup keeps track of the hive's weight, at intervals from every 1 1/2 min. to an hour.

Weight data provides the most significant and useful information for maintaining a healthy hive, says Patrick O'Keefe, who designed the system. The graphs that producers see show a drop in weight when bees leave for the day to gather nectar, and gains in weight when they bring the nectar back.

"A weight of 2 or 3 lbs. of bees indicates a strong hive," he says. "If the weight drops suddenly there's a problem."

It can mean the hive has been robbed by other bees or that the queen bee tells her bees to leave the hive, which is called a swarm. Disease and dearth (from drought and loss of food) also cause weight losses.

By getting the information right away beekeepers can take action to add supers to stop a swarm, provide food, or take other measures.

O'Keefe grew interested in bees in the 70s when his brother had 300 hives. As an electrical engineer he started working on his monitoring system about a dozen years ago. It includes a small scale that slips under the corner of a hive and a WiFi module that sends weight and temperature data to a router. In remote situations without WiFi, a hotspot is added.

"I spent a year working with 10 scales to figure out how to mount them so the hive is stable and to protect the scale and module from the elements," O'Keefe says. "I want to see it last at least 10 years."

He suggests putting a scale under one or two hives in an apiary of several hives. Monitoring them gives a hint of what's going on in all the hives. Each system costs $285 ($10 shipping). Additional hotspots are $195, that work on up to 10 scales and cost about $1/each/month for AT&T 4G LTE. The cost is a quick return on investment if it saves a hive and the revenue it generates, O'Keefe notes.

The scales work on all types of beehives including the Flow™ Hive developed by

Wi-Fi Hive Scale keeps track of a bee hive's weight at regular intervals to let you know hive's health. Hive can be monitored from a computer, cell phone or tablet.

Australian beekeepers about 6 years ago. O'Keefe has distributors in Australia and Norway, where beekeepers have embraced the technology. O'Keefe sells the WiFi Hive Scale in the U.S. and Canada.

He sells to backyard beekeepers as well as commercial companies, who use the scales on active hives in the summer and in winter to monitor hives stored in warehouses. Email alerts can be set up when weight drops or increases to specific levels, and he also offers an optional humidity sensor that helps monitor condensation that can result in frozen colonies in northern areas in the winter. Batteries are used in his systems, though some customers have refitted them with solar chargers.

Contact: FARM SHOW Followup, O'Keefe Electronics Inc., 47585 Peck Wadsworth Rd., Wellington, Ohio 44090 (ph 440 821-2032; www.wifiscale.com; info@wifihivescale.com).

Four models of Elixir fertilizer toolbars are available, in 17 different configurations.

ToolBar Tackles Tough Terrain

Daniel Rauchholz assembled a team of equipment professionals with over 100 years of experience, and used input from farmers and equipment dealers to help design and build an innovative new fertilizer toolbar. Rauchholz says the Elixir bar is a tough alternative to existing equipment on the market with features like industry-leading range-of-motion, greaseless wing pivot points and hybrid oscillating axles that allow the bar to provide uniform application across all types of terrain.

"An Elixir bar can put down anhydrous, dry or liquid fertilizer or any combination of products," Rauchholz says. "We've tested different models during the fall and spring the past 2 years in different states with excellent results."

Four models of Elixir toolbars with 17 different configurations are available in sizes ranging from the 15-row unit at 30-in. spacing to the giant 65-ft. wide, 7-section model with 22 to 26 rows at 30-in. spacing. Rauchholz says the different sizes allow producers to build the exact machine they need to match their horsepower and application needs. Elixir models have a 40-degree range-of-motion that allows uniform application over uneven terrain. The oscillating wheels contribute to accurate depth control across the width of the machine and also better control for road transportation between fields while reducing tire wear on crowned surfaces. A ladder-style frame on all Elixir models contributes to residue flow through the bar and uniform fertilizer placement while following contours, traveling up and down hills, across waterways and on terraced fields.

Farmada can set up its toolbars with 3 different knife systems. The CS Mount is built for a 6 by 4 (series Elixir64) or a 6 by 6 frame (series Elixir66) with a single component disk and a shank that delivers up to 800 lbs. of down pressure. This is the preferred choice for hilly and heavily contoured land. The Split Mount has the coulter mounting to a front frame and the shank mounting to the rear frame, which allows greater front-to-back stagger for improved trash flow. The High Speed Single Disc is designed for the high-speed row unit

Elixir models have a 40-degree range of motion for uneven terrain.

from Yetter.

Rauchholz says that even though initial Elixir implements performed well in the field, he and his staff continue to fine tune their designs and will add new technology as it becomes available. "We're dedicated to being price-competitive with excellent dealer support and outstanding customer service," Rauchholz says.

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