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Dairy/Livestock

UI to test water filtration system on dairies

By JOHN O'CONNELL
Capital Press

MOSCOW, Idaho — A University of Idaho professor who developed a mobile facility that cleans dirty water and converts the pollutants into fertilizer plans to start testing his experimental technology on dairy lagoons in late September.

Greg Moller, a professor of environmental chemistry and toxicology, built his demonstration-scale machine — a 40-foot-long, 9-ton filtration system mounted on a trailer — with a \$427,000 grant from the Idaho Department of Commerce's Idaho Global Entrepreneurial Mission.

Moller explained the machine is an updated version of a technology he pioneered about a decade ago, called reactive filtration water treatment. His original system



Courtesy of Greg Moller

The Nutrients-Energy-Water Tech filtration System, mounted on the trailer pictured above, was developed by University of Idaho professor Greg Moller and is scheduled to be tested for cleaning the UI's research dairy in late September. The experimental technology pulls pollutants out of tainted water and converts them into fertilizer for agriculture.

utilizes a filter of sand coated in iron — which acts as a sponge attracting pollutants and pulling them out of suspension — and has been implemented at municipal water treatment facilities through-

out the world, including in three Idaho cities, Plummer, Grangeville and Hayden.

A second version of the technology also treats water with ozone, which sterilizes pathogens including viruses,

bacteria, antibiotics and trace organic compounds.

The latest incarnation, called Nutrient-Energy-Water Tech, works by adding a biochar powder treated with iron to water, where it bonds with pollutants. Water is again treated with ozone and then filtered through iron-stained sand. Moller said the biochar, which becomes infused with key agricultural nutrients such as phosphorus and nitrogen as it cleans, can be converted into pellets to aid in both soil tilth and fertility.

"We're recovering water so it can be re-used, pulling out nutrients and pollution and addressing food security issues," Moller said.

Moller said farmers who use biochar could potentially be eligible for future carbon trading credits due to the carbon sequestered in the product.

J.R. Simplot Co. is partnering on the project to evaluate the nutrient-enhanced biochar as a sustainable fertilizer source. Blue Water Technologies, of Hayden, has licensed Moller's previous innovations and is also a research partner on the current project.

Moller has tested the trailer, which has the capacity to process 15 to 25 gallons of water per minute, on water that has undergone initial treatment at the Moscow wastewater treatment plant, but still contains elevated nutrient loads.

Moller said the trailer will soon commence with testing on the lagoon at UI's research dairy in Moscow. He intends to test the product at additional dairies throughout the state later this year or early next year.

Idaho Dairywomen's Association has aided Moller by offering letters of support,

though the organization hasn't provided direct financial aid, said executive director Bob Naerebout.

"We think all of those types of projects are extremely important in terms of how we can harvest the nutrients out of lagoon water," Naerebout said.

Naerebout said the association has been involved in similar research in the past that hasn't proven economically feasible for dairy operations, and he'll "anxiously await" results of dairy testing.

Moller's trailer was showcased during the Idaho National Laboratory's Aug. 18 Intermountain Energy Summit in Idaho Falls, and Moller is scheduled to discuss the breakthrough Oct. 27 during the Northwest Food Processors Association's Sustainability Summit at the Crowne Plaza in Portland, Ore.

Utah State University team creates winning dairy product

By CAROL RYAN DUMAS
Capital Press

SUN VALLEY, Idaho — A team of food science students from Utah State University took top honors and \$10,000 in the Idaho Milk Processors Association new product competition.

The product — called Eureka! — is a liquid meat marinade made with acid whey produced in the manufacture of Greek yogurt. The product is comprised of about 65 percent dairy, utilizing a by-product that carries expensive disposal costs.

The marinade comes in a resealable pouch containing 16 ounces of liquid marinade and is large enough to hold up to 2 pounds of meat. The students developed two flavors — Traditional Savory and Spicy Chipotle Pepper — with the potential for ad-

ditional flavors, different size containers and vegetable marinades.

The product could tap into the growing marinade market with a savory, user-friendly, shelf-stable and self-contained marinade pouch, the students said in their presentation at IMPA's annual conference.

In 2013, U.S. sales of cooking sauces, marinades and dressing totaled \$7.4 billion. A 2013-2014 survey of 24,000 Americans found that 82 percent of those households were using some form of barbecue sauce or marinade for meat on a regular basis, with more than half using at least two bottles or packages per month, they noted.

The students conducted a taste panel with 109 panelists to evaluate beef and chicken marinated with their product. On a scale from 1 (dislike

extremely) to 9 (like extremely), the products rated in the neighborhood of 7 for smell, appearance, flavor, overall appeal and tenderness, the students said.

Cost to produce the marinades per 16 ounce package on a large-scale basis would be \$0.84 for the Traditional Savory and \$1.50 for the Spicy Chipotle Pepper, with retail prices ranging from \$2.50 to \$4.

The product has an easy-to-understand label and a ready-to-use marinade in a bag and provides a simple solution for consumers who want a satisfying yet easy meal at home, the students said.

"The team from Utah State offered a compelling product with the data and marketing materials to back it," said Alan Reed, chairman of the contest committee.



Jan Jackson/For the Capital Press

Tom Pettyjohn, a Burns, Ore., sheep grower, says he'll keep going despite the drought and wildfires that have impacted his operation this year.

Persistence key to raising sheep in drought-plagued E. Oregon

By JAN JACKSON
For the Capital Press

BURNS, Ore. — Trying to bring a crop to market during the unprecedented drought that has gripped the region is more than a full-time job for sheep grower Tom Pettyjohn.

There's no feed left in the mountains, a shrinking supply of feed in the valley and wildfires that are either out of control or have burned the range in previous years.

It all adds up to a hard year for sheep growers in this isolated part of Oregon.

Pettyjohn trails two bands of fine wool sheep onto Bureau of Land Management and U.S. Forest Service land in the summer and sends the ewes to finish out in the valley in the fall.

This year he is having trouble doing any of that.

"We're bringing two 800-plus bands and another 400 ewes down from the mountains a month early because the food has run out," Pettyjohn said. The grazing is so sparse that "many of them are leaving the flock and coming down the

mountain on their own."

Even his dogs are impacted. "I have a young dehydrated herd dog recuperating at the vet's right now because he was bent on trying to keep them from running," Pettyjohn said.

"To make their way home, they have to go through town so I get calls all the time from folks telling me my sheep are in their yards, the park and any place they find food to their liking," he said. "They are all home a little early for the winter — in fact the last of them just crossed the highway at the truck stop this morning."

"Now I'm hoping for an early winter."

Pettyjohn, who was born in nearby Nyssa and raised in Burns, grew up in the woods. He remembers one past wildfire in particular that his dad helped fight.

"My dad drove truck for what in his day was one of the biggest Ponderosa pine mills in the world and was fighting fires on my 10th birthday," Pettyjohn said. "My present that year was a helmet with a flashlight attached to it that was left over from the fire."

Pettyjohn left the woods for

ranching.

"I started out in cattle and didn't get into sheep until someone gave my daughter 5 ewes. From there I bought a band from Wyoming, bought some from my friend Jim Shepherd and I'm still buying," he said. "I still have about 100 head of cattle, but really I enjoy the sheep."

"Right now I'm looking for some place in the valley that has grass that can take about 400 ewes and looking to see what Montana is paying in case I have decide to truck them there."

Shepherd, a Burns rancher and Oregon Sheep Commission member who still keeps a flock of Rambouillets, talked about working with Pettyjohn.

"Right now we all are getting ready for the Harney County Fair and the drought and fire problems aren't keeping Tom from donating the use of his steel panels and sheep for the annual Mutton Buster," Shepherd said. "Fortunately, the drought and fires aren't affecting the FFA kids who have project sheep as much as the production sheep growers, though the price of hay is getting to them."



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Cash dairy prices ride a roller coaster

By LEE MIELKE
For the Capital Press

Cash dairy product prices were on a roller coaster. After all, this is fair season. The bearish July Milk Production and Cold Storage reports provided the downward momentum last week and demand provided the uplift.

Block Cheddar cheese lost 8 1/4 cents by Thursday but regained 4 1/4 Friday to close at \$1.70 per pound, down 4 cents on the week and 63 cents below a year ago. They tacked on another 3 cents Monday, as traders awaited Tuesday's Global

Dairy Markets

Lee Mielke



Dairy Trade auction, and added 2 cents Tuesday, hitting \$1.75 per pound.

The barrels finished Friday at \$1.60, down 9 1/2-cents on the week, 74 1/2-cents below a year ago, and an unsustainable 10 cents below the blocks. They inched a penny higher Monday and jumped 6 cents Tuesday, to \$1.67, reducing the spread to an above average 8 cents.

Product made its way to

Chicago last week, particularly barrel, as 10 cars of block traded hands and 31 of barrel. Sales so far this week are minimal.

Some Central cheese manufacturers report milk intakes are down slightly, due to the seasonal decline and the increased bottling demand for schools, reports Dairy Market News. Cheese production is active with little extra capacity available. Cheese makers are buying occasional loads of milk to fill capacity, but only when they can be purchased at or below Class. Cheese demand continues to be good.

Prize-winning state fair steer to go to food bank

SALEM, Ore. (AP) — Now that his stint at the Oregon State Fair is over, a prize-winning steer will soon be feeding the needy.

The Salem Statesman-Journal reports that Cascade High School students have been raising the steer, named Red Box, with the in-

tention to donate his beef to the Marion-Polk Food Share, where it will head to a food bank so they can give back to their neighbors.

Red Box weighs 1,070 pounds, and students say they expect him to be larger when he's butchered Sept. 23. They are fundraising for another

\$200 to offset the cost of getting his beef U.S. Department of Agriculture-inspected.

Red Box was crowned grand champion feeder calf at the Marion County Fair. He took third place in the market steer class against other student groups showing at the Oregon State Fair.