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## Dairy

# Wildfire smoke takes toll on milk production

Capital Press

Cows exposed to heavy wildfire smoke produce significantly less milk, with reductions persisting for a week after the air has cleared, according to University of Idaho researchers.

Amy Skibiell, Pedram Rezamand and Ashly Anderson, all with university's Department of Animal, Veterinary and Food Sciences, published their findings in the *Journal of Dairy Science's* June 15 edition. Data for their paper was collected during the summer of 2020 — an especially bad wildfire year throughout Idaho.

"In the summer of 2020, we had seven consecutive days of wildfire smoke where the levels were much higher than (Environmental Protection Agency) standards for human health. During that time we found cows produced less milk," Skibiell said in a press release.

Specifically, milk production dropped by 2.5 pounds per cow for every 100 micrograms per cubic meter increase in airborne particulates due to smoke.

On the smokiest days, particulate levels reached about 300 micrograms per cubic meter, resulting in a daily loss of 7.5 pounds of milk production per cow. Dairy cows experienced even steeper reductions in milk production throughout the week after the smoke had dissipated.

"I think it was a cumulative effect of exposure across multiple days and no respite," Skibiell said.

Heat stress was not a factor in the milk reduction, as 2020 was a cool summer



Capital Press File

**Cows exposed to heavy wildfire smoke produced less milk, researchers have found.**

and the temperature-humidity index during the smoky period wasn't high enough to affect production.

The researchers analyzed immune cells in cows' blood and concluded the smoke caused immune cells associated with infection and allergic reactions to increase. They also found higher carbon dioxide levels in the blood of smoke-exposed cows.

"I have a hypothesis that it could potentially be reduced lung function and impairing gas exchange. Carbon dioxide is also a component of smoke, so they're breathing in more of it," Skibiell said.

The researchers also found cows' respiration rates rose amid smoke exposure, further increasing the volume of carbon dioxide they breathed in. In the milk of smoke-exposed cows, they confirmed a very slight reduction in protein content.

They studied a group of dairy cows at the university's Dairy Center in Moscow that calved in July, collecting weekly blood and milk samples, tracking weight and recording body

condition scores.

During the summer of 2021, which was also a bad wildfire season, they focused their smoke-inhalation research on calves. White blood cell numbers of heavy smoke-exposed calves went down across the board — possibly due to immune cells migrating to the lungs, or because calves don't have fully developed immune systems.

This summer, the researchers plan to evaluate the physiological reasons behind the immune cell population changes in smoke-exposed cows and calves. They'll also closely evaluate what's occurring in the animals' lungs. They plan to create particulate matter in a controlled way this season to monitor how rising levels impact animal health.

Researchers from Oregon State University, Washington State University and University of California-Davis recently joined the project, conducting their own trials.

The researchers advise dairy producers to limit the exertion of their cows when the air is smoky, keeping doors on barns closed and using air filters.



Carol Ryan Dumas/Capital Press File

**European milk production is down because of climate policies, public perception and other issues, a dairy industry leader says.**

## Regulation, public perception crimping EU milk output

By CAROL RYAN DUMAS  
Capital Press

Like most of the dairy export regions in the world, milk production in Europe has been hindered by high input costs. But other factors signal a more permanent reduction in milk output in the European Union.

Milk production in the EU was down 1.6% year over year in May, according to the European Commission. It was also down 1.4% year over year in June, according to the International Dairy Foods Association.

"Input costs were already an issue last year, but Russia's war in Ukraine has made the situation much worse," said Jukka Likitalo, secretary general of Euclait, which represents European dairy traders and processors.

Supply chain and labor challenges and extreme weather haven't helped. But other factors decreasing milk production are more structural, he said during the latest "Dairy Download" podcast.

"We are seeing farmers leaving the industry and, in many cases, the next generation is not really willing to

take over," he said.

A lot of dairy farms are also switching to crop production, which tends to be a bit more lucrative. Being a dairy farmer is a tough 24/7 job and doesn't even pay that well, he said.

"And the rather negative perception of dairy farming is another growing problem as the climate discussion has become quite overheated or even toxic" in some European countries, he said.

A big game-changer has been the new policy direction in Europe under the "so-called Green Deal." A key part of that strategy is to cut greenhouse gas emissions by at least 55% by 2030 and become a carbon-neutral continent by 2050, he said.

"Some studies on the farm-to-fork strategy (the food policy component of the Green Deal) estimate that we could see declines of EU milk output of around 10% in the next eight years or so," he said.

The effects of the strategy are more prevalent in western European countries, which are under strong pressure from the public to reduce emissions. It seems to be particularly strong in Germany and France, the

two main milk-producing countries, he said.

"In addition to that, you already see legislative action happening in countries or areas with intensive agricultural systems and which also have high levels of nitrate and phosphate in the soil," he said.

There's definitely some or even a lot of pushback from the farming community in particular. But he thinks businesses have also realized this is sort of the direction things are going and have started to adapt, he said.

Inevitably, the lower milk output is going to be reducing availability for exports, and that's already shown up in trade performance so far this year, he said.

"My guess would be that European exporters will be losing market share permanently," he said.

He also thinks there'll be a growing focus on cheese and value-added ingredients, to the detriment of commodity powders.

The question is to what extent export markets will be considered as secondary in comparison to domestic demand needs, he said.

"The slowdown in milk output is a big concern for sure," he said.

## Washington dairy rep rips Ecology's embrace of buffers

By DON JENKINS  
Capital Press

In proposed rules that will apply to some dairies, the Washington Department of Ecology has embraced large riparian buffers, drawing criticism from the Washington State Dairy Federation.

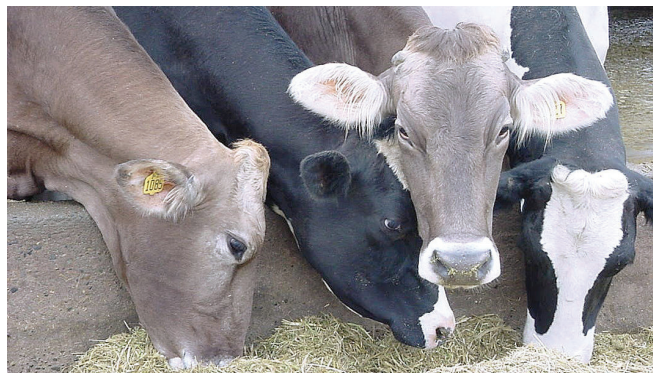
Buffers, or "riparian management zones," would be one of four ways for dairies with CAFO permits to protect water.

Federation policy director Jay Gordon said no dairy will choose land-consuming buffers. He criticized Ecology for endorsing an option that he said has more political than scientific support.

"It's just this drumbeat to keep pushing these big, dumb buffers," he said.

Only dairies or other confined animal feeding operations where manure washed or seeped into water must have a CAFO permit. Currently, 24 operations have CAFO permits. Permit terms add to regulations enforced by other agencies, such as the state Department of Agriculture. Ecology is updating the terms.

To prevent polluted runoff, CAFO permit holders can build berms, maintain 35-foot-wide strips of vegetation or not



Washington Department of Ecology

**Cows feed at a Washington state dairy. The Department of Ecology has proposed new terms for its CAFO permit.**

apply manure within 100 feet of water. Large buffers would be a new fourth option.

"These riparian buffers are a holistic approach to land and water management," Ecology permit writer Chelsea Morris said Tuesday at a public hearing.

"Not only are they meant to treat and trap manure coming from storm runoff, they also provide wildlife habitat and shade streams," she said.

Gordon said CAFO permits should stick to protecting water, rather than seeking to restore ecosystems. Buffers would take up too much land, particularly in Western Washington, for dairies to grow enough feed for their cows, he said.

"How do you dairy farm if you do that?" he said. "It's a suicide pill for a dairy farm."

Riparian buffers are politically charged. The Environmental Protection Agency has previously financed lobbying by tribes and environmental groups to impose 100-foot buffers in Washington. EPA pulled its support in 2016 when its role in funding "What's Upstream" billboards was publicized.

Gov. Jay Inslee this year proposed mandatory buffers. The bill would have authorized buffers equal to the tallest trees in an area, making buffers as wide as 250 feet a possibility. The bill stalled, and Inslee blamed indifference to salmon.

## GDT auction drops 5% again

By LEE MIELKE  
For the Capital Press

Don't look to the Global Dairy Trade for any rallies just yet. Tuesday's weighted average did a repeat of the last event, dropping 5.0%, the fourth decline in a row.

Again there were declines in every product, led by buttermilk powder, down 9.2%. Whole milk powder was down 6.1%, after dropping 5.1% on July 19, and skim milk powder was down 5.3%, after leading the declines last time with an 8.6% drop.

### DAIRY MARKETS

Lee Mielke



Butter was down 6.1% and anhydrous milkfat was off 1.4%. Cheddar was off 0.7%, after dropping 2.0% on July 19.

StoneX Dairy Group says the GDT 80% butterfat butter price equates to \$2.2987 per pound U.S., down 14.8 cents from the last event, and compares to CME butter, which closed Tuesday at a price of \$3.0325.

GDT Cheddar, at

\$2.1763, was down 1.2 cents, and compares to CME block Cheddar at \$1.8875.

GDT skim milk powder averaged \$1.5983 per pound, down 8.4 cents. Whole milk powder averaged \$1.6077, down a dime. CME Grade A nonfat dry milk closed Tuesday at \$1.6150 per pound.

Next Tuesday will be the first GDT Pulse, an effort with Fonterra to "enhance liquidity in GDT," according to its website. It will run the opposite weeks of the normal event for 6 to 12 months and only offer Fonterra whole milk powder.

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