

## **Bovine Bubbles**

Saturday, July 17, Modesto Bee

By EDIE LAU - THE SACRAMENTO BEE

DAVIS -- If you need to measure exactly how much gas comes out of a cow, there's really only one airtight approach:

Put her in a bubble.

Snicker all you want, but this is serious work for University of California at Davis scientist Frank Mitloehner, who just put 40 heifers inside tented corrals he calls "bovine bubbles."

It's serious because the government for the first time is cracking down on air pollution produced by livestock in California, and there's precious little reliable data on how much pollution the animals make, or how best to reduce it.

"We want to know, first of all, what kind of emissions come from a cow and her waste, and secondly, how can we control the emissions?" said Mitloehner (pronounced mit-LER-ner), whose training as an animal scientist and air-quality specialist make a custom fit for the job.

Dairy cows are the biggest target because the state has so many: about 1.6 million producing milk at a given time, and nearly as many "dry" cows and heifers.

As the nation's No. 1 dairy producer, California also may be the nation's No. 1 dairy polluter, especially since most of the herds live in the San Joaquin Valley, a basin stretching from Lodi to Bakersfield with one of the worst air-quality ratings in the country.

Getting a handle on emissions from normal outdoor pens is troublesome. The wind shifts, and there goes the reading. Hence, the research bubbles.

"You won't see this anywhere else in the states," Mitloehner said with pride, stepping into one of four enclosures his students built last month at the west end of the UC Davis campus.

The bovine bubbles resemble Quonset huts covered tight as a drum with white, high-tech plastic.

Ten young cows live in each bubble. They won't suffocate because cooled air comes in one end and is vented out the other, sampled and analyzed upon exit and also later in the lab.

This week, Mitloehner and his research staff planned to begin testing several ways of mitigating the gases and fine manure dust produced by typical dairies and cattle ranches. The experiment will last eight months.

The results can't come too soon. As of this month, San Joaquin Valley farmers with large animal operations must obtain air-pollution permits.

"As per usual, the regulation comes before the science," Mitloehner said dryly.

The awkward timing is especially sensitive in the case of dairies because a key emissions figure underlying the new rules apparently is based on a mistake.

Mitloehner, among others, tracked it down. According to his sleuthing, the figure originated with a study in 1938 by scientists scrutinizing the nutritional physiology of ruminants.

The study measured the amount of methane emitted by a mature cow. The figure, amounting to 160 pounds per year, was picked up and repeated by scientists in subsequent papers.

### **Perpetuating the mistake**

In 1978, Mitloehner said, researcher Hal Taback reported the methane number as the amount of total organic gases produced by a cow. The supposed error was perpetuated by researchers citing Taback.

In 1997, the San Joaquin Valley Air Pollution Control District used the number in question to create an emissions factor for volatile organic chemicals, or VOCs, produced by cows. VOCs are ingredients in the formation of ozone, the pollutant that most plagues valley air. Methane, while an organic gas, is not a VOC -- meaning the original statistic shouldn't apply, Mitloehner said.

In short, estimates for cows' contribution to ozone pollution are based on an error, he said.

The ramifications are profound. Using the flawed figure, regulators project that dairy cow waste will surpass passenger cars as a pollution source in the valley by 2010.

The dairy industry isn't pleased.

"We want to be sure that we're doing our fair share to clear the air in the valley," said Michael Marsh, chief executive officer of Western United Dairymen in Modesto, a trade association representing more than half of the state's 1,950 dairy producers.

"At the same time, we don't want to be tied into a made-up emissions factor."

### **Measuring from both ends**

At UC Davis, Mitloehner is chasing an emissions factor using the bovine bubbles as well as a second study involving the use of "environmental chambers" to measure output directly from both ends of the cow.

The bovine bubbles also are being used to quantify the ammonia and dust generated by the manure that builds underfoot.

Manure dust is finer than soil dust. The particles are measured in microns. To appreciate the size of a micron, consider that a human hair is about 17 microns in width. Manure particles may be smaller than 10 microns or even 2.5 microns.

Heifers -- young cows that haven't yet borne a calf -- and mature cows that aren't lactating usually are kept in corrals with a dirt base upon which manure builds up, Mitloehner said.

Cleaned out typically only twice a year, the corrals harbor ever deeper piles of manure. As cow pies dry in the summer heat, dust forms, going airborne with every step of the hoof.

Mitloehner keeps a little plastic tub of manure dust in his office. When he lifts the lid ever so gently, fine brown powder curls out like a genie from a bottle. Particles this small lodge deep in the lungs, sometimes finding their way to the bloodstream to cause a variety of ailments.

It's not good for humans or livestock.

On his computer, Mitloehner has stored a pair of photographs showing cross-sections of alveoli, grapelike sacs in the lungs where oxygen is taken up by the bloodstream and carbon dioxide excreted. One photo shows healthy alveoli with plump, open chambers. The second shows the chambers clotted with dust particles that are covered by microbes.

"This animal," Mitloehner said, pointing to the second image, "was a steer on a feedlot that died of dust pneumonia."

The photograph highlights the urgency of imposing agricultural pollution controls. The other spur is state law: Legislation passed last fall removes the exemption from air-pollution restrictions that historically were given livestock operations.

## **Thick smoke hinders best views Haze shrouds glorious vistas after lightning-sparked fires strike Yosemite park.**

By Susie Vang

The Fresno Bee

(Updated Saturday, July 17, 2004, 6:24 AM)

YOSEMITE NATIONAL PARK -- A managed fire that officials are allowing to burn at Yosemite National Park has blurred scenic views with smoke and sparked mixed reactions from visitors.

Alice Berenbaum traveled from Virginia with her husband and three children for their first trip to Yosemite. As they looked over the ledge at Tunnel View on Friday morning, they saw clouds of white smoke, through which just the shapes of rocks and trees could be seen.

As Berenbaum and her family took in the view, David Seo shook his head in disappointment.

Seo traveled more than 200 miles from Rancho Palos Verdes and expected to enjoy the scenery with his wife, son and sister-in-law. What he wasn't prepared for was the thick haze of smoke.

"If I'd known this was like this, I wouldn't have come," he said. "I am not happy."

Park ranger Deb Schweizer suggested that a better time for weekend travelers to visit the park is in the afternoon, when most smoke clears.

Glacier Point Road was closed most of the day. Hiking trails that were closed because of the fire included the John Muir Trail, which will open this morning.

Firefighters are not putting out the fire because it will help the ecosystem, said fire manager officer Tom Nichols. He said it's important that visitors understand

that officials are doing all they can to cut down on the smoke while at the same time help nature take its course. When a fire is allowed to clear a section of the park, the idea is that future fires will be smaller and easier to manage because there will be less fuel, said fire information officer Gary Wuchner.

About 200 firefighters tried to direct the fire to the southeast, away from Glacier Point.

Officials hope the fire will go toward an area that burned in 1999, where there is less fuel. The fire is expected to die out in winter snowfall.

About 100 firefighters will monitor the fire today, and the remainder will be released to work on other fires outside the park.

On Friday, humidity helped slow the fire, Schweizer said.

Brian Seo, 5, stood inches away from his father and peered at the smoggy Yosemite Valley.

"It doesn't look pretty," Brian said. He pinched his nose and said the fire made the air "stinky."

Kenneth Brooker, visiting from New Zealand, stopped biking and rested at a viewpoint Friday. He said he had trouble breathing because of the smoke.

"When I got here, I got really dizzy," he said, and he had to lie down.

Brooker is camping with some climbers and they've told him that they're also experiencing breathing difficulties.

Schweizer said the clinic has not treated people for smoke-related health problems.

Evan Shipp, supervising meteorologist for the San Joaquin Valley Air Pollution Control District, said park visitors with conditions such as asthma should be careful.

"The precautions for these fire emissions would be if you're around where smoke impact is, you should take it easy, not exercise and try to remain inside," Shipp said.

Other families biked and walked on trails while a trio carried gear to go bouldering near a trail.

Alice Berenbaum said the fire and the beauty of Yosemite is all part of nature.

Her son, Brian, 12, agreed. "You have to make the most of it," he said. "You appreciate beauty in a different way."

## Southern California Wildfires Continue to Burn

By Erika Hayasaki, Times Staff Writer, LA Times, July 19, 2004

Several wildfires burned throughout the Southland today, including a Santa Clarita blaze that jumped fire lines over the weekend, prompting officials to order the evacuation of about 1,600 homes.

In Riverside County, a man taking target practice southwest of Hemet was cited over the weekend with recklessly causing the Melton fire and could be ordered to pay some of the more than \$1.1 million it has cost to fight the blaze. The fire has blackened more than 3,600 acres of brush and has damaged three buildings. By early today, it was 65% contained.

To the west in the mountains between the San Fernando and Santa Clarita valleys, firefighters had contained nearly 40% of the Foothill fire by this morning.

The blaze, driven by 20-mph winds, had jumped fire lines Sunday afternoon.

The Foothill fire started shortly before noon Saturday near the junction of the Antelope Valley and Golden State freeways after a red-tail hawk was electrocuted by a power line and fell to the ground, igniting grass and brush. By early today, the fire had charred more than 5,700 acres. At least three firefighters suffered minor injuries Sunday, said Los Angeles County Fire Department spokesman Mark Savage.

In northwest Los Angeles County, firefighters made progress today in quelling the Pine fire, which has ravaged more than 17,000 acres since it was sparked a week ago. Officials are still investigating the cause of the fire. The blaze was 80% contained today, and all 1,000 residents who had evacuated the area were allowed back to their homes, fire officials said, adding that they expected to have the fire fully controlled this week.

"We're in mop up," said Cricket Konopacki, a spokeswoman for the California Department of Forestry. "They're watching for smoke and putting out hotspots, and making sure everything is out."

The Pine blaze destroyed three homes and 21 other buildings and damaged four homes and 19 outbuildings, said Los Angeles Fire Capt. Anthony Penn.

Four firefighters suffered minor injuries, and one fireman, Los Angeles County Fire Capt. Daniel E. Elkins, 47, was killed in a car accident while returning to the fire station from the fire, said Penn. Funeral services for the 20-year Fire Department veteran are scheduled at 11 a.m. today at Lancaster Baptist Church, 4020 E. Lancaster Blvd.

About 5,000 firefighters have battled blazes across Southern California during the last week. More than 40,000 acres had burned as of Sunday evening, and the Federal Emergency Management Agency has approved funds to help pay for fighting six of the fires, including the Foothill and Melton blazes.

*Times staff writer Amelia Neufeld contributed to this story.*

## **Move over horses, here comes cow power**

Visalia Times-Delta, Monday, July 19

By Don Curlee, Agriculture

While horsepower seems to be universally understood, in several areas of California the exciting promise of the future is cow power.

The technique that has been developed for using the waste product from large California dairies to produce methane gas for use as a power source seems almost too good to be true.

In Chino, in the southwestern corner of San Bernardino County, nine dairies supply a centrally located methane digester. The gas created is used to drive pumps that bring up salty groundwater from the underground basin. The water is desalted in a plant whose power also comes from the methane gas. The treated water goes directly into the drinking water distribution systems for Chino, Chino Hills, Ontario and other neighboring communities.

The digester uses about 225 wet tons of cow manure every day, and that might be the best news of all. Before the digester facility was built, disposal of the dairy waste was a challenge for dairymen and residents of the highly concentrated dairy center.

Through the years, the salts from the dairy waste and from fertilizers applied to orchards and vineyards that occupied the area before houses moved in tended to leach through the upper levels of the soil and into the underground water basin.

After the methane gas is removed from the manure, the dry solids are useable as fertilizer and mulch. A facility in the Chino area packages the solids for use by homeowners and others, and also provides bulk delivery for large applications.

In Marin County, the Straus Family Creamery began using a methane digester in May that is expected to generate 600,000 kilowatt hours of electricity annually. It will be used to power several motors at the dairy and creamery at a savings of \$6,000 per year. Funds have been made available for methane digester installation through the California Energy Commission, administered by Western United Resource Development, an arm of Western United Dairymen in Modesto. However, the deadline to apply for the funding is Aug. 31.

Besides the economic advantage to dairymen who use the methane gas to produce power, capturing and utilizing the gas has significant benefits to the environment. When the methane is allowed to occur naturally and escape into the atmosphere, it is said to contribute to the greenhouse gasses that alter the sun's intensity.

Nathan DeBoom, assistant manager of the Inland Empire Utility Agency in Chino, said technicians and planners are working toward refinement of the system. They want to reduce the three components of the digester to one. They also want a high-value market for the solids, funding credits for air quality mitigations that can be traded and additional sources of waste.

For now, however, the bovines are in the driver's seat, accelerating with abandon under the source of cow power. Going from 0 to 60 is one sMOOth move.

## **The Californian nets 12 publishing awards**

The Bakersfield Californian, Sunday July 18, 2004

*The Bakersfield Californian* won 12 awards from the California Newspaper Publishers Association on Saturday at the 2003 Better Newspapers Contest awards ceremony in Long Beach.

The newspaper earned the top honor of general excellence for its circulation category while *Californian* Executive Editor Mike Jenner was honored with the individual Freedom of Information award. That is a singular statewide honor.

Also winning locally was *The Tehachapi News*, which won first place for the best spot news photo in the weekly 4,301 to 11,000 circulation category.

East Bakersfield High School's The Kernal, earned second place in general excellence in the high school newspaper division.

The *Californian* awards were for newspapers in the 25,001 to 75,000 daily circulation category.

*The Californian's* awards were:

- General excellence, first place, staff.
- Freedom of Information individual, Jenner.
- Freedom of information, first place, staff, for ongoing series of public payroll and retirement benefits stories.
- Best Web site, first place, staff.
- Photo essay, first place, photographer Casey Christie for "Culture of Truancy" series.
- [Environmental or agriculture resource reporting, first place, reporter Matt Weiser for "Smog: A Growing Concern" series.](#)
- Sports coverage, first place, sports staff.
- Editorial pages, first place, staff.
- Non-local spot news, second place, metro staff, coverage of the Paso Robles earthquake.
- Lifestyle coverage, second place, Eye Street staff.
- Front page, second place, staff.
- Feature photo, second place, photographer Christie for "Dog Waiting" photo.

This was the most awards *The Californian* has won in a single year. Last year the newspaper won seven.

"I'm thrilled that we won so many awards," Jenner said. "But the contest that matters the most to me is the one with the readers. They are the judges who matter the most."

Other general excellence winners were *The Los Angeles Times*, 200,001 or more circulation; *Contra Costa Times* in Walnut Creek, 75,001 to 200,000 circulation; *The Reporter* in Vacaville, 10,001 to 25,000 circulation; and *The Porterville Recorder*, 10,000 or less circulation.

This was the first year East Bakersfield High School's student newspaper entered, said adviser and teacher Randy Hamm.

"These kinds of awards are a team effort. Everyone who wrote a story, took a photo or designed a page shares in the glory," Hamm said. "It's been a very good year for The Kernal."

About 175 newspapers participated in this year's CNPA awards contest. The organization represents more than 500 member newspapers from small weekly to large daily metropolitan newspapers.

## **Transit needs get airing**

[Bakersfield Californian, Community Voices](#)

Thursday, July 15, 2004

By RONALD E. BRUMMETT

Public transportation opponents view it as a waste of time and money, and an impediment to their progress on the road.

Supporters see a system that helps the environment, is cheaper than owning separate vehicles, reduces congestion and serves as a lifeline for those unable to operate their own cars.

Although public transportation accounts for only about 1 percent of all daily trips in Kern County, that 1 percent equates to more than 20,000 daily passengers on Golden Empire Transit alone, not counting services offered in other Kern cities or by the county.

Transit riders are a diverse group that are not necessarily low-income. Students too young to drive ride the bus, as do elderly citizens who are no longer able to operate a vehicle. Some people choose to take the bus to avoid the expense of car payments, insurance, repairs, parking, gas and registration.

Despite recent service improvements and gains in ridership, there are still people who need, but cannot catch, a bus. That is why every city, the county, GET and the Kern Council of Governments hold unmet transit needs hearings.

Through them, we hope to learn how public transportation is doing and what we can do to make it better.

Typically, it is the question of whether service is available at all that shapes whether a transit need is considered unmet. Other issues -- such as limited wheelchair spaces, or intersections and regular stops not being announced -- are operational concerns or adjustments over which the needs process has little control.

The distinction can be tricky, and the public may be cynical about whether needs it brings to KernCOG would be dismissed with legal sleight-of-hand. But that is not what we do.

KernCOG's role in addressing operational issues is to coordinate a solution. While funding may play a factor in how quickly a deficiency is addressed, knowing a problem exists is the first step in solving it.

On the other hand, those who argue that they cannot get to transit service, or that service cannot get to them, have an unmet need under the law.

The test of whether a need is reasonable to meet typically has to do with the costs required to achieve it.

Does a person who lives off a dirt road 40 miles from town have an unmet transit need? Absolutely. Does it mean the transit operator has a responsibility to get a bus to him? No. That would be an unreasonable request, given the extraordinary cost to service that one person.

However, extending an existing bus route to accommodate residents of a new development is an unmet need that is considerably less costly to address and that may improve the bus system's performance. Working with local transit operators, we continue to provide better service bus by bus, route by route.

Twenty-eight unmet needs hearings are held each year throughout the county. KernCOG will hold its meeting at 7 p.m., Thursday, July 15.

Consider attending. Please, talk to us any time of the year directly or by letter, phone, fax or e-mail.

*Ronald E. Brummett is the executive director for Kern Council of Governments, a regional transportation planning organization.*

## **Asthma coalition is grateful for success**

[Visalia Times-Delta, Letter to the Editor, Monday, July 19](#)

Thumbs up to all the volunteers and sponsors who made the Second annual Asthma Adventure Fair at the Visalia Convention Center on May 22 a huge success. The Children's Welfare Foundation unexpectedly donated 35 bicycle safety helmets at our event. At this fair, 383 children, their families, and caregivers learned about asthma control and received management tools.

CHRIS FOSTER

Tulare County Asthma Coalition

## **Where's the beef? Ban it**

[Bakersfield Californian, Letter to the Editor, Sunday, July 18, 2004](#)

There is really only one way to eliminate the increasing problem of air pollution caused by cow manure. That is to stop the consumption of beef and milk.

It will also not only solve this problem but also help to solve the increasing problems of ill health in this nation.

-- FRED COLCER, Tehachapi