VALLEY VETERINARIANS, INC.

COW DOCS

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Dairying in the New Millenium:

A Profit from Poop

On most of the dairies we service, there is a major source of profit that is not being fully utilized. Cows not only turn corn, silage and hay into milk, they also produce unbelievable amounts of manure. This 'waste' can not only be used to fertilize and irrigate fields or as a cheap source of bedding, there is a tremendous store of energy there for the harvesting.

The practice of collecting methane and using it to power generators that produce electricity has been experimented with since the late 1970's. The early experiments have had mixed success, as problems with engineering and construction robbed the public's interest in this renewable and easily accessible energy source.

Rob Hilarides, of Hilarides Dairy, in Lindsay, has been collecting methane from ponds on his heifer facility for a couple of years now. The feed lanes are gravity flushed, and the effluent goes into separation ponds. The liquid portion of this pond is pumped into a covered digester pond, and then gravity flows into a secondary partially covered pond. The methane is collected from these last two ponds, and then the fluid in the secondary pond is used for irrigation and flush purposes.

The methane, after being collected, is pumped to the four generators Rob has on his dairy. Each generator produces a little over 100 KWH apiece, nearly enough to supply all of the energy needs for this 10000 cow dairy. Rob is planning on installing 2 more generators costing about $100000 each, which should produce a surplus of energy for the dairy. This surplus energy can be used to gain 2/3 credit from Southern California Edison, which is available for use on any other ag-well accounts that are adjacent to the dairy.

The large primary digester and methane collection pond at Hilarides Dairy in Lindsay

Rob's initial outlay for the entire setup was about $1.2 million, which he hopes to recoup after about 5 years. Western United Dairymen and the California Energy Commission did provide grants to help with the initial construction and infrastructure. Ongoing costs are variable, having to do with upkeep and maintenance, including valve adjustments, oil changes and 'rewinding' for the generators. In addition to the 2 extra generators that are scheduled to be installed, he is considering covering more lagoons, to provide a more consistent source of methane. Having multiple generators allows Rob to cope easily with the variable amounts of methane available, but he does say that usually the ponds provides more of the gas than he can use.

Although this setup seems to be a success at Hilarides Dairy, there are still problematic issues if you are considering methane digesters and producing your own energy. Of course you know that most dairies operate on a very thin profit margin, and the initial outlay for this type of operation is considerable. There is also a good deal of paperwork that must be done to get interconnected with the power grid, and there are numerous technical and safety requirements that must be met. The biggest requirement, according to Rob, if you are considering this type of setup, is that you have a real mechanical and equipment orientation. The generators require a good amount of work to keep them running smoothly.

Dairying in the New Millenium

A Profit from Poop (continued)

The benefits to this technology are plain. You can save money on electricity by producing your own. The generators produce a lot of hot water, which could be used on the dairy for other purposes. Methane is often blamed as one of the causes of poor air-quality as well as one of the potential causes of global-warming. Public Perception of the dairy industry may be improved by more lagoons being covered throughout the area.

We see a lot of dairies, and there's manure everywhere. Maybe the next time you look around, you'll see an opportunity for the type of success Hilarides Dairy is achieving with their methane digesters and electric generators.

The methane-run generators at Hilarides Dairy.

In the 'Meet the Vet' section of our newsletter, we will try to introduce you more personally to our vets, and to keep you updated with what's going on in our lives.

Meet the Vet:

Michael Zvonar

Mike Zvonar joined VVI in 2004 after having worked 5 years in a mixed large animal practice in Pennsylvania. He graduated from the University of Georgia College of Veterinary Medicine in 1999, and had received a BS in Chemistry from the University of North Carolina at Chapel Hill in 1995.

Mike was never around dairy cattle growing up in North Carolina, and only decided to work with them after getting into vet school. "I changed my mind about wanting to work in a zoo in my freshman year of vet school. And before I dropped out, I figured I had spent so much time and money getting there, I should look more into other fields of veterinary medicine. So I spent some time with people working on horses, dogs, cats and other species, but discovered I really like being around dairy cattle and the people who owned and worked with dairy cattle."

Mike just got married a year ago in August to a girl he met here in California. "We met on match.com, one of the popular internet dating services." Lissa was working at the time at the UC-Davis VMTRC in one of the research labs, so she doesn't complain too much when Mike comes home smelling like cows.

Mike doing a DA surgery.

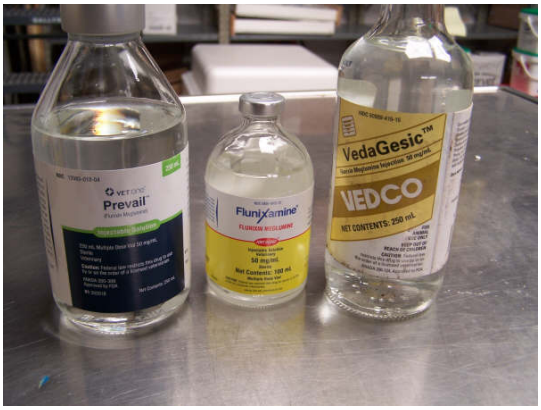
When not working, and not at home, Mike spends a good bit of time at the golf course. "It's the most frustrating thing I've ever tried to do, and I don't want to give up until I get it right." (Good luck). Mike also enjoys playing duplicate bridge and reading for pleasure. Lissa is a team-roper, and is very happy to be married to someone who can help take care of her horse. Lissa is also trying to learn golf, and really enjoys a good book.

"All in all, I'm extremely happy I moved to the valley. I only wish I'd done it 5 years earlier. The clients and staff at Valley Vets are great people to work with and for, and this is the job I hope to retire from, when my arm gives out."

Drug Details:
Flunixin Meglumine

In 'Drug Details', we will give you a brief synopsis of various products you may be using.

"Take two aspirin and call me in the morning." That's what we picture some doctors doing back in the day. Flunixin is just another form of aspirin. The chemical is different, but the class of drug is the same, it's a Non-Steroidal Anti-Inflammatory Drug or NSAID. Flunixin is the only NSAID currently licensed and approved for administration in dairy cattle.



Some of the various bottles of Flunixin you may encounter.

Traditionally, NSAIDs are used to treat fevers, and other signs of inflammation, including pain and the swelling of tissues due to trauma. We most commonly recommend using flunixin after a hard obstetrical delivery, or to help a severely sick or feverish cow feel better. A third, and lesser cited reason for the use of flunixin in a cow, is for the benefits it gives through its anti-endotoxic effects. Flunixin may also be used occasionally to try and save a pregnancy if a pregnant cow has accidentally been administered a prostaglandin product such as prostamate or Lutalyse.

Banamine, or any of the generic forms of flunixin, should all be given IV to cows. It is very caustic and causes severe tissue damage , and the withdrawal and residue information that we have is all based on intravenous use. Intramuscular use, which we do not recommend, can lead to prolonged residues. The milk withhold period is 36 hours after the last treatment, and the meat residue is 4 days from last treatment when used intravenously.

Prolonged or overuse of any form of flunixin has several potential side-effects, including kidney failure and ulceration of the stomach. The potential for gastric ulceration is of particular concern in pre-ruminant calves, and the use of flunixin in these calves should be carefully evaluated. Flunixin should also never be mixed in the same syringe with any other drug or fluid as it has a tendency to congeal, which can cause problems when administered.

The proper dosage in any age of dairy cattle is 1cc per 100 pounds once or twice a day as needed. Like aspirin, flunixin will not actively fight a bacterial infection, but it is commonly used in conjunction with antibiotics and other drugs. Flunixin should never be used in conjunction with a steroid drug such as dexamethasone or pre-def, as this combination will greatly increase your odds of causing ulcers and other problems.

Should you have any further questions about flunixin, please ask your herd health veterinarian at his next visit.

Highlights:

- Use to alleviate tissue-damage due to trauma, or to alleviate severe fevers.
- The dosage is 1cc/100lbs once or twice a day Intravenously.
- Do not overuse (give more than 4 doses/cow) or overdose as you may cause stomach ulcers or kidney damage.
- Do not use concurrently with a steroid.
- Use a separate, clean flunixin-dedicated syringe for administration.
- Talk with your herd-health veterinarian about proper uses and any questions you may have.
- Do not use intramuscularly, as it may lead to prolonged tissue and milk residues.
- After IV use, the beef withhold is 4 days and the milk withhold is 36 hours.

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Feel free to contact us, or talk with your herd-health veterinarian about any questions or feedback you have on our newsletter or any of our services. We're here for your benefit.

A newsletter for California milk makers

Disease Profile:

Johne's Disease: A brief synopsis of a chronic killer.

Johne's Disease is characterized by chronic diarrhea and weight loss in a cow that otherwise looks healthy and may have a great appetite. It's caused by a bacteria called Mycobacterium avium ssp paratuberculosis (MAP). MAP is a very slow growing resistant bacteria that's difficult to kill. One study estimated that two-thirds of the dairies in the state have at least 1 cow positive by blood testing.

Not only is there significant cost from this disease in lost milk production and lost genetics, there are human health concerns associated with MAP due to a possible link to Crohn's disease. The hardiness of the bacteria and it's possible resistance to standard pasteurization make it a potential public-relations nightmare for the dairy industry.

Transmission of MAP between cattle is from an older, shedding animal through either milk, colostrum, or fecal-oral transmission to younger animals. This is one of the reasons it is vital that care be taken not to expose yearling and younger calves to cow manure, either through bedding or the common use of equipment.

The disease can then take up to 2 or more years to begin to show clinical signs in the newly infected animal. During this slow-growing stage, it is nearly impossible to test the animal and determine its Johne's disease status. This emphasizes the need to prevent exposure and prevent new infections. It is nearly impossible to eradicate the disease purely through testing and culling. Biosecurity and calf/replacement management must be part of any program to control this costly disease.

If you have any questions, or suspect you may have had a Johne's case, please discuss calf management and biosecurity with your veterinarian at your next herd health visit.

Potential exposure?