

Colorado Dairy News

Cooperative Extension, Colorado State University, Fort Collins, Colorado 80523 Volume 7, Number 5
a publication from Integrated Livestock Management (www.cvmbs.colostate.edu/ilm/)

ILM Dairy Team

**Frank Garry, Coordinator ILM,
Professor of Clinical Sciences, CSU**

Six years ago the Integrated Livestock Management program was begun in order to focus on issues important to Colorado animal agriculture. At that time, changes both within and outside the university emphasized the need to develop a new organization for the way CSU works with the dairy industry and other livestock groups. The program was structured to incorporate the research, outreach, and teaching activities of multiple departments within the University.

ILM is a multidisciplinary program that aims to unite expertise already present at CSU to address the multifaceted problems facing modern agriculture. ILM was developed with a core structure of postgraduate studies, in order to integrate our activities around the education and projects of advanced livestock production specialist trainees. This unique model of university activities has been very successful to date, and we have tried to keep you apprised of ILM progress with reports in this newsletter.

ILM dairy projects have included studies of Johne's disease, coliform mastitis, bulk tank milk quality, newborn calf problems, salmonellosis, an emerging 'bloody gut syndrome' and Malignant Catarrhal Fever. The basic concept behind ILM has been to develop projects in the production environment. This has been very successful in working with the dairy industry, where projects have been conducted in cooperation with operating dairies. The graduate level trainees work with producers and help provide information back to producers resulting in a mutually beneficial partnership.

Over the years, Bill Wailes and Frank Garry have polled numerous dairy producers to determine their needs and, thus, the direction of ILM Dairy activities. Based on those conversations, we are in the process of structuring our activities into formalized programs in five critical areas:

1. News and information delivery
2. Milk quality/mastitis
3. Standard operating procedures for routine problems
4. Disease control programs
5. Herdsman training

Although we have made progress in each of these five program areas over the last years, we have recently gained new personnel and have formed an ILM Dairy Team. The ILM Dairy Team includes Bill Wailes, Frank Garry, Ragan Adams and Page
(Please continue on page 3, under ILM Dairy Team)

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**Dairy 2002
Coming to
Colorado**

Representatives from the USDA will visit Colorado dairies this January to conduct the initial survey for Dairy 2002, a continuation of studies that address priority issues of the U.S. dairy industry. Previous studies include the Dairy Heifer Evaluation Project in 1991 and Dairy '96. Discussion of these studies have been published in the Colorado Dairy News and are archived at www.cvmbs.colostate.edu/ilm/. Original reports are available at www.aphis.usda.gov/vs/ceah/cahm/.

Twenty other states besides Colorado will participate in Dairy 2002. Collectively the states represent over 80% of the dairy herds and 80% of the dairy cows in the U.S. Some objectives that will be addressed in the Dairy 2002 national study include:

- * management strategies that prevent/reduce Johne's disease
- * factors associated with key food safety pathogens in U.S. Dairy cattle
- * describing the level of understanding of producers to the threat of foreign animal diseases
- * describing biosecurity practices, management practices, animal waste handling systems, and uses of animal identification.

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Important Dates:
Mark Your Calendar

January 29, 2002: Colorado Dairy Nutrition Conference, Greeley, CO. Speakers include Drs. Bob Corbett, Mike Allen, Mike Hutjens, Keith Bolson and Jessie Goff. For more information contact WR Wailes, Extension Dairy Specialist, CSU 970/491-5390.

January 30-31, 2002: Colorado Dairy Days/Farm Show, Greeley, CO. For more information contact WR Wailes, Extension Dairy Specialist, CSU 970/491-5390.



**Integrated
Livestock
Management**

Colorado Dairy News

*is published
bimonthly as a service to those
people interested in the health and
welfare of the Colorado dairy
industry.*

*Past issues are available on the
ILM website
(www.combs.colostate.edu/ilm)*

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A Message From Your Extension Dairy Specialist.....

September 11, 2001 will ever be in our thoughts as a free and powerful nation. Never will this great country be without challenges from terrorists attacking our status as the most affluent society in the world. Let this day remind our livestock producers how envious other evil people are in this world. Never should we let down our principles and security of this great nation or relax and not worry about these types of activities.

Foreign terrorist activities involving Foot and Mouth Disease (FMD) pose the greatest risk to livestock producers. Nationally and locally biosecurity protocols have been developed to prevent this and other devastating disease from entering our country. Now more than ever it is extremely important to adhere to these protocols. Let this day remind us that these threats are extremely real. Thank God for this great country and a great industry that we all serve and for which we work very diligently.

Milk consumption is down according to Tom Jenkinson, Executive Vice President of Industry Coordination for Dairy Management, Inc. Twenty years ago milk consumption peaked at 30 gallons per year when teenagers reached the age of 17 or 18 and then slowly trailed off. Today children's peak milk consumption occurs when they are less than 10 years old and has dropped to 26 gallons per year. Not only are children drinking less milk, they are drinking it for a shorter period of time. Reversing this trend is a critical part of increasing national milk consumption. A five month study of middle and high school vending machine use showed that students would drink more milk if it were available *when, where and how* they wanted it. Wide spread use of milk vending machines in schools could potentially increase school milk consumption 4% or 140 billion pounds. Placement of vending machines in schools in five major U.S. markets was sponsored by the National Milk Mustache Campaign.

Sincerely,

Commodity Price Quotes

By-Product Feeds	Price/Ton Spot Loads	Future Months Oct-Dec
Bakery Waste	\$83.00	\$83.00
Blood Meal	\$450.00	NA
Corn Gluten Feed	\$98.00	\$95.00
Corn Gluten Meal	\$300.00	NA
Corn Hominy	\$88.00	\$91.00
Flaked Corn	\$99.50	\$97.00
Whole Corn	\$84.00	\$86.00
Cottonseed Meal	\$170.00	\$165.00
Whole Cottonseed	\$173.00	\$147.00
Distillers Grains	\$110.00	\$110.00
Pork - Meat & Bone Meal	\$213.00	NA
Tallow	\$0.16/lb	NA
SBM - 48%	\$198.00	\$190.00
Wheat Middlings	\$95.00	\$105.00
Soybean Hulls	\$88.00	\$78.00
Canola Meal	\$148.00	\$152.00

These price quotes are delivery at Greeley, Co

(ILM Team , continued from page 1)

Dinsmore, who have been working on this initiative since it began in 1996. We now welcome three new members onto the team: Drs. John Wenz, Heather Hirst, and Veena Khunkhun, who were previously involved with ILM as trainees, and now join the team to help advance program development. A summary of our goals in each area follows. Please feel free to discuss these programs with the team leader. A card with contact numbers will be included in the November newsletter for your convenience.

Our **information delivery program** will continue to center on the Colorado Dairy News, as it has since ILM was started. The CDN has proven a very useful means of informing producers about current issues in the Colorado dairy industry, and new developments in ILM projects. We have also used the newsletter to distribute information about national dairy studies and to disseminate standard operating procedure guidelines for a range of dairy activities. Dr. Ragan Adams remains in charge as the editor and welcomes feedback and suggestions for future issues.

Development of the **Colorado milk quality/mastitis program** will be led by Dr. Page Dinsmore. While continuing to improve the current bulk tank culture program, Dr. Dinsmore will work with the Diagnostic Laboratory to assure the highest quality testing procedures and results. We also welcome JoAnn Hovland to the Diagnostic Lab staff. She will be working with Dr Doreene Hyatt as the microbiology specialist in charge of milk culture procedures and reporting. We are planning to expand the scope of this program to include additional services with the goal of providing more direct assistance to dairies looking to decrease mastitis and improve milk quality.

Guidelines for standard procedures and quality assurance approaches to routine dairy practices have been included as inserts in the Colorado Dairy News for the last couple years, and are available on the ILM website. We are planning to expand these efforts to assist producers and their veterinarians in on-farm implementation. This program will be headed by Dr. John Wenz, who has returned to CSU after 2 years in private dairy practice.

Disease control and monitoring efforts are becoming increasingly important to the dairy industry as we recognize the economic importance of certain herd disease problems. Dr. Heather Hirst has spent the last two years working with numerous Colorado dairy herds on John's disease testing and assessment. This disease will likely remain a high profile problem in the years to come, as will other infectious diseases such as salmonellosis, BVD, infectious lameness problems, etc. Dr. Hirst will now be working to help establish an ILM Dairy Team program designed to assist producers in disease risk assessment, monitoring and control.

Herdsmen training has been identified as a high priority need by virtually all of the producers we have polled. High quality dairy operations rely on well trained workers, but there are limited opportunities available for this training. Although we have engaged in herdsman training in the form of various seminars over the last couple years, we see the need for a more complete and structured program. We have begun the process of curriculum development and considered various means of delivering high quality herdsman training. We expect to begin herdsman training sessions in the new year. This program will be led by Drs. Frank Garry and Veena Khunkhun.

All of these program developments are targeted around the needs expressed by dairy producers over the last couple of years. Your input is important. If you have questions or comments to help us with these ILM Dairy Team initiatives, please feel free to call.

New ILM Dairy Team Members



Dr John Wenz



Dr. Heather Hirst



Dr Veena Khunkhun

Milk Mycoplasmaology

*Doreene R. Hyatt,
Bacteriology Section Head,
CSU Veterinary Diagnostic Laboratory*

*R. Page Dinsmore,
ILM, CSU
Colorado Milk Quality/Mastitis Program, Head*

As mentioned elsewhere in this newsletter, the Integrated Livestock Management (ILM) program at CSU is developing a Quality Milk Program (QMP). The goal of this program is to help Colorado dairy producers produce the highest quality milk possible by providing a reliable milk culture lab, consultative services, and pertinent research in milk quality issues.

Currently one of our major concerns is the accuracy of our milk mycoplasma culturing technique. The investigation of laboratory test validity is not straightforward but understanding the steps of the investigation will give our customers a better understanding of the complexities of the issue. The following article explains the means by which we have evaluated our technique.

In conjunction with the QMP, the Colorado State University Veterinary Diagnostic Laboratories has been analyzing the milk mycoplasma culturing technique. This summer a study was performed to compare the results of our culturing technique to that of 3 other laboratories. We identified 211 samples from our laboratory or that had been shipped to us from other laboratories and split each into four separate samples. These were then shipped to three other laboratories for mycoplasma culture. Comparison of the results of all 4 laboratories (CSU Dx Lab and the 3 outside labs) analyzing the same samples revealed that the CSU Dx Lab identified fewer milk samples positive for Mycoplasma. In laboratory lingo, the "sensitivity" of our technique was less than that of the other 3 laboratories. Even though one could conclude that other labs reported false-positive results due to inability to distinguish mycoplasmas from similar non-pathogenic species, we decided to assume we were reporting false-negative results and resolved to modify our techniques to improve our lab sensitivity.

The CSU culturing process had been designed to be the best available anywhere because it used the best growth medium and an extra enriching step. These features add cost and time to the process but were included to optimize results. At CSU we make our own media with fetal bovine serum. Published scientific literature reports that this is a preferred supplement, but is rarely used because of expense. The other 3 laboratories in our comparison use horse serum in the growth media.

To evaluate the contribution of the difference of the media supplements (fetal bovine serum and horse serum), we re-cultured samples from which other laboratories had isolated mycoplasma, and we had not, as well as some that we had reported as positive for mycoplasma.

However, our most startling finding was unexpected. It appears that the cause of our lower sensitivity is related to the other procedural step conducted only by the CSU lab that was intended to increase sensitivity of the culture technique. At CSU samples are enriched in broth media and then filtered before plating. It appears that the filtering step intended to decrease contamination has actually decreased the likelihood of culturing Mycoplasma! These findings seemed illogical, since we are

enriching the sample to encourage the growth of mycoplasma! Unfortunately, an occasional side effect of enrichment is increased growth of contaminating background organisms, and thus the enriched culture broth must be filtered before the final plating. It appears that the mycoplasma organisms are being trapped in the filter along with the other microorganisms and are not available for plating. This indicates to us that it is not our media that is a concern, but perhaps the final filtering step.

At this stage we plan to apply the milk from all individual cow samples directly to plates without the intervening broth enrichment procedure. A benefit of this direct plating procedure is decreased turnaround time for results: We will perform an initial reading at 72 hours and a final reading at 7 days. Additionally, we will be performing another blinded culture study on mycoplasma positive and negative samples in the coming month comparing our sensitivity with the new method and old method to another laboratory's results. Stay tuned for an update when we complete this new set of samples!



JoAnn Hovland

joins the CSU Diagnostic Lab with six years of experience as a certified veterinary technician at Care Animal Hospital in Arvada. She and her husband moved to Ft. Collins to be closer to her parents. JoAnn hopes to become an integral part of the diagnostic team helping producers solve their herd mastitis problems.