University of California
Agriculture and Natural Resources
Making a Difference for California

Golden State Dairy Newsletter

Volume 12, Issue 3

August 2020

"How To" Reminders for Summer Silage Harvest.

Jennifer Heguy - UCCE Merced, Stanislaus & San Joaquin Counties

Buying or selling corn silage this summer? Do you want to adjust price for dry matter?

Traditionally, corn silage is purchased on a 70/30 basis; that is 70% moisture and 30% dry matter (DM). Let's assume we're buying a field for $60/ton. What happens when the corn silage is delivered at 28% DM, is the value still $60/ton? What if it's delivered at 32% DM? Below is an equation that can be used to correct the purchase price for DM:

$$\frac{\textbf{Actual DM \%}}{\textbf{30\% DM}} \times \textbf{\$/ton} = \textbf{\textit{Corrected} \$/ton}$$

Examples:
So, at **28% DM**, the purchase price would be: 28/30 x $60/ton = **$56/ton**
And, at **32% DM**, the purchase price would be: 32/30 x $60/ton = **$64/ton**

A note of advice: Have these discussions ahead of time, so both parties agree to price corrections before trucks start delivering forage.

See this previous *California Dairy Newsletter* issue for more information on silage DM% price correction, including suggestions for collecting a representative field sample for DM determination: http://ucanr.edu/adjusteddm

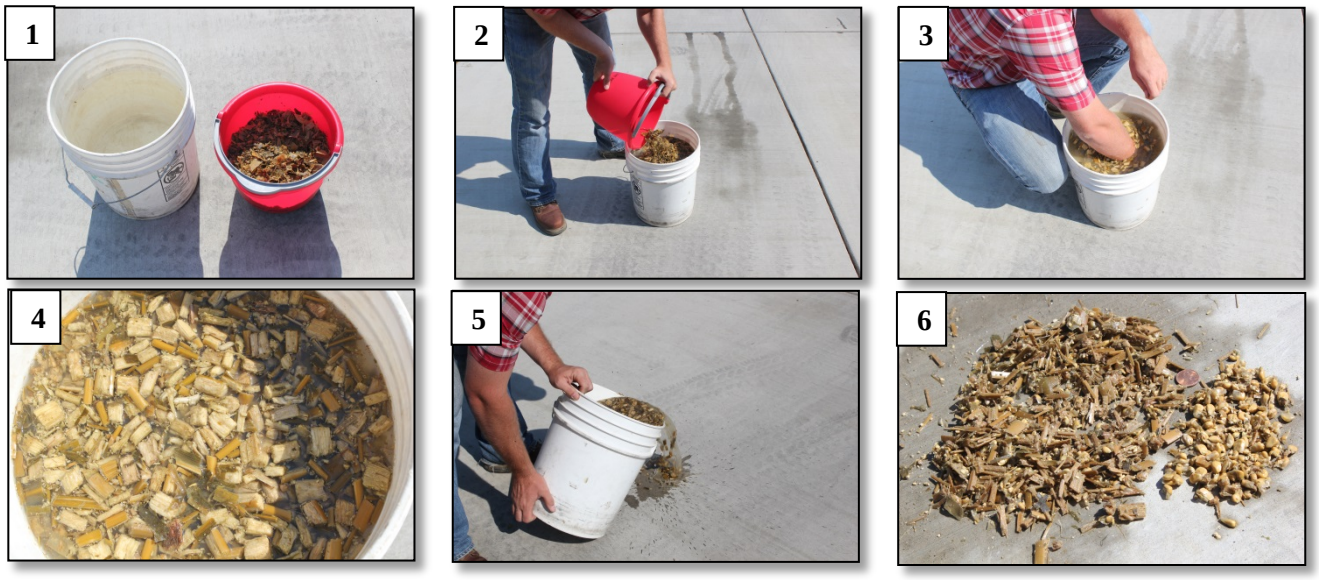
(continues on page 2)

Also In this Issue…

Newsletter Editor:
Jennifer Heguy
UCCE Dairy Advisor
jmheguy@ucdavis.edu
(209)525-6800

How do I evaluate kernel processing during harvest?

Here's a fast (less than 10 minutes per sample), yet effective, way to evaluate kernel processing during harvest. Kernel processing breaks up corn kernels, allowing the starch to be digested. If whole kernels pass through the animal, the starch is lost in feces rather than used as energy for milk production. By evaluating kernel processing during harvest, adjustments to harvest equipment can be made to ensure kernel processing is effective. Here are six easy steps to evaluate kernel processing:



Materials needed:

1. 5-gallon bucket
2. Water source
3. Silage sample; fill a gallon sized plastic bag ½ to ¾ full after it is unloaded at the silage structure.

Procedure:

1. Fill the 5-gallon bucket ¾ to the top with water.
2. Add the silage sample to the water in the 5-gallon bucket.
3. Stir the sample in the water for several seconds or until it all gets wet.
4. Let the sample settle in the bucket.
5. Slowly and carefully pour off the water with the floating sample material.
6. Kernels (and other dense material) sink to the bottom of the bucket; examine the kernels to ensure most are broken or crushed. If you find too many intact kernels, communicate with the harvesting crew in order to make the necessary adjustments at the field to achieve the desired end product.

2020 Alfalfa and Forage Virtual Field Day

Wednesday, September 23, 2020; 8:30am – 12:00pm
In-Field Video Presentations and Live Webinar
Register here: https://ucanr.edu/survey/survey.cfm?surveynumber=31830

A virtual field day will replace the annual Alfalfa and Forage Field Day held at the Kearney Agricultural Research and Extension Center. The traditional in-field tour will be replaced with a series of prerecorded in-field videos posted online prior to the webinar portion of the event. Registered attendees can access video presentations and join the live webinar to ask questions of speakers during a Q&A panel discussion.

Implementing Calf Management Practices: Does It Pay?

Betsy Karle - UCCE Northern Sacramento Valley & Dr. Sharif Aly - UC Davis School of Veterinary Medicine

Economic considerations are important when implementing management practices on-farm. Solutions work best when the bottom line is justified. Our team investigated the costs associated with select calf management practices that were associated with a reduction in bovine respiratory disease (BRD) in pre-weaned dairy calves. Specifically, cost-benefit analyses were conducted for increased milk feeding and dam vaccination on BRD incidence. In our analyses of 2,615 calves treated for BRD on 5 herds throughout California, we honed in on the short-term cost of BRD, which was estimated at $42.15 per case (medication- $15.70, labor- $17.30, loss of average daily gain- $9.15).

Increasing milk fed

A significant factor in calf health outcomes, especially relative to respiratory illness in calves, is the amount of milk fed daily. Our studies found that increasing milk intake by a pint, from 8 pints to 9 pints, daily, for at least the first 21 days of life was valuable. The cost of the additional milk fed was calculated using the Penn State Calf Milk Pasteurization Evaluator spreadsheet. Feeding the extra pint reduced BRD incidence by 92% and cost approximately $1.19 per calf to implement on a typical California herd (1,249 lactating cows). Over a one-year period, dairies could save up to $8.51 per calf where BRD typically affects 25% of pre-weaned calves. Even herds with low BRD incidence, such as around 5%, are expected to save $0.75 per calf in treatment costs. It is not until BRD incidence is 3% or less on an annual basis that increasing the amount of milk fed would not be economically beneficial.

Vaccination of dams

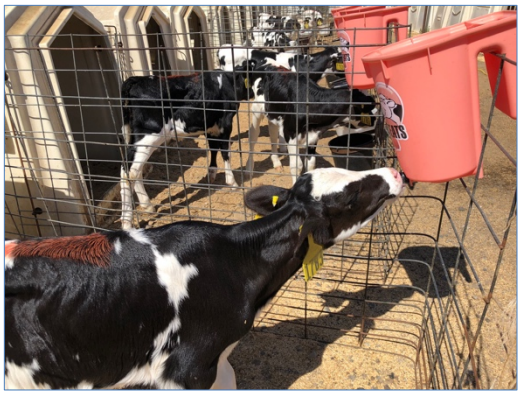
Vaccination of dams with a modified live vaccine per the herd veterinarian's protocol was associated with a reduction of BRD in pre-weaned calves. As a preventative measure, vaccination was correlated with a 67% decrease in the risk of BRD. Other benefits of vaccination beyond BRD reduction in pre-weaned calves were not analyzed in the current study. The cost of vaccination was estimated at $4.64 per heifer calf and assumed that all bull calves were sold within 1-2 days of birth. All cows are typically vaccinated, regardless of their calf's sex. If bull calves are raised on-site, the ratio of calves raised to cows vaccinated increases, diluting the additional cost of vaccine over the larger number of calves being raised. Based on the scenario of raising heifer calves only, economic gains relative to calf BRD were present in herds with 20% or more of calves affected by BRD in the pre-weaning period. A net savings of $2.42 per calf could be realized in herds where 25% of calves are affected by BRD. Vaccine protocols should always be developed in consultation with your veterinarian to meet the needs of your particular herd.

Future research

Increasing the frequency of maternity pen bedding changes, heat treatment of colostrum, storing colostrum in bags (compared to bottles), feeding whole milk, pasteurizing milk, housing calves individually, reducing dust, and providing shade or shelter, also have a significant role in reducing BRD in calves. While we have not yet analyzed cost-benefit scenarios for these additional practices, their benefits should not be overlooked.

The bottom line

While implementing management practices is an investment, there may be gains to be had when a cost-benefit scenario is considered. Increased amount of milk fed and vaccination are two particular practices strongly associated with improved calf health in our previous studies, as well as economically viable when put into practice.



New AMMP Practices under consideration

Dr. Deanne Meyer - UC Davis Department of Animal Science and UCCE

The door is still open! This one is for proposing new practices for the Alternative Manure Management Program (AMMP). The door will close September 4, 2020, at 5 pm.

The California Department of Food and Agriculture is accepting proposals for NEW PRACTICES to be included in the AMMP. This proposal process is to get new practices approved. This is not for dairy operators to request funds for their specific operation.

Over the last few years, more than $59 million was invested in AMMP projects to reduce greenhouse gas emissions. The estimated annual reduction by implementing these practices is 206,000 $MTCO_2e$. If you or someone you know has a practice that you think should have access to the AMMP funds, now is the time to submit the appropriate information to the California Department of Food and Agriculture (CDFA). The Department hosted two webinar workshops in early August to identify the requirements for submitted proposals. Information on the proposal submission process is available at the CDFA website.

Here are the key requirements for proposal submission (excerpted from the CDFA website):

Who is submitting the proposal? This includes full name, organizational affiliation (if applicable) and contact information (phone number and email at a minimum).

What is the proposed practice? These cannot be proprietary or involve the use of exclusive, proprietary products, materials, or equipment. Note that commercially available technologies have a proven operating history specific to use and function.

What does the science say? Proposals must include peer-reviewed and publicly available research literature that demonstrate greenhouse gas reductions can be achieved and document measurable permanent greenhouse gas reductions. The scientific bar is set for field study design. Research findings submitted in support of the practice must be statistically sound and significant (e.g. randomized design with a minimum of three replicates). Proposed practices involving the addition of manure additives must include an analysis of environmental impacts and materials' safety, waste management, and disposal procedures.

Are there other positive or negative impacts as a result of the practice? CDFA encourages submissions to include life cycle assessment data for proposed manure management practices, if available. CDFA encourages submissions to include additional published peer-reviewed data to demonstrate environmental co-benefits of proposed practices, if available.

Submit proposals electronically to cdfa.oefi_ammp_tech@cdfa.ca.gov no later than 5:00 p.m. PT on September 4, 2020. CDFA accepts PDF format, single-spaced with font size of 11 or larger, and a maximum of three pages. Supporting information (research papers and data) is not counted in the page limit.

Watch your email……

Have you thought about changing how you collect manure? Are you interested in a vacuum system? A handful of California dairy producers were funded by the California Department of Food and Ag (CDFA) to change manure collection from flush to partial scrape. Webinar information on this topic will be available soon. The webinar is part of a joint effort between UC Cooperative Extension and the California Dairy Research Foundation. The project is supported by CDFA.

Advantages of Moving from an Exclusively Natural Service Breeding Program to Artifcial Insemination

Dr. Fernanda Ferreira - UCCE Herd Health & Management Economist Specialist, Fabio Lima – UC Davis School of Veterinary Medicine & Betsy Karle - UCCE Northern Sacramento Valley

Artificial insemination (**AI**) has been widely adopted across the US, and it is a significant factor in the dramatic increase in milk production in the US in the past years. However, some dairy farmers still prefer the use of natural service (**NS**) bulls. In 2014, 56.3% of all dairy operations in the US reported using a dairy bull as part of their reproductive program, with 10.7% of operations exclusively NS. Because a bull works as both an estrus detector and inseminator, there can be a perception of better reproductive performance of the cows, ease of management, and lower costs of NS when compared to the use of AI.

But are there economic advantages of using an AI program versus an exclusively NS program?

The short answer is yes.

- Good to high reproductive performance with an AI program (at or above 18% pregnancy rate) is easily achievable.
- Past studies (2005 and 2010) have shown that, on average, using AI or timed AI versus an exclusively NS breeding program had an economic advantage of $10/cow per year. This value may be higher today due to the increased use of genomics and greater selection intensity of bulls.
- If you consider the opportunity cost of having a cow in the slot occupied by the bull, the economic advantage of using AI over NS increases to $60/cow per year.
- If you use an AI bull with a net merit of $600, the advantage of AI over NS can be greater than $60/cow per year.
- If feed costs per cwt of milk produced increases, the economic advantage of using AI also increases, and it can be greater than $160/cow per year if feed cost per cwt of milk is $8.
- Additional advantages of using AI include reduced incidence of dystocia, elimination of venereal diseases, and increased personnel safety.

Where do the economic gains from using AI come from?

The use of an AI bull will be more profitable because their genetically better daughters will generate more lifetime net merit in a fluid and manufactured milk market. A study from 2002 showed that the daughters of AI bulls generated $148 and $120 more lifetime net income under fluid and manufactured milk market conditions, respectively, than daughters of non-AI bulls. Due to the increasing use of genomics, this difference is likely to be significantly larger today.

There are costs associated with keeping a bull. Bulls have to be properly managed, including reproductive evaluations, vaccinations, and subjected to a rotational breeding system. Feeding bulls has a significant effect on profitability when an NS program is used, accounting for approximately 38% of the total bull costs.

The data shared here were obtained from research done using reproductive and economic data collected from dairies across California (Overton, 2005), and from a research study in a large, Florida dairy herd (Lima, 2010). Their comparisons included a variety of scenarios relative to economic conditions in the dairy industry and genetic merit of sires.

The bottom line.

Talk to your veterinarian before making the decision to move from an NS to an AI program. It is important to have a good estrus detection program and/or timed AI protocols in place and semen choices should be specific to your dairy's objectives. At the end of the day, there are too many opportunities and advantages to AI not to consider implementing it across the herd.