UNIVERSITY OF FLORIDA
IFAS
Department of Animal Sciences

# Dairy Update

Quarterly Newsletter — Winter (January) 2004

## PROGRAM REPRODUCTION ROAD SHOW

### Reproduction Extension Meetings Coming Near You!

You are invited to attend the Reproduction Road Show. This is a series of 4 meetings around Florida, **March 2, 3, 4, and 5,** to bring you up to date on practical state-of-the-art methods to improve reproductive performance in dairy cattle.

Program

10:00 am - **Trends in reproductive performance in dairy cows: what do the numbers tell us?** - Brent Broaddus UF/IFAS Dairy Extension
10:15 am - **Managing the postpartum cow to maximize pregnancy rate** - Carlos Risco, UF/IFAS College of Veterinary Medicine
10:45 am - **Successful timed AI programs** - Milo Wiltbank, U of Wisconsin Dept. of Dairy Science
11:25 am - **Economic importance of improved reproductive performance** - Albert de Vries, UF/IFAS Dept. of Animal Sciences

11.45 pm - **Lunch** (sponsored by Pfizer).

1:00 pm - **Reproductive data management with PC-DART** - Dan Webb, UF/IFAS Dept. of Animal Sciences
1:20 pm - **Embryo transfer that works** - Pete Hansen, UF/IFAS Dept. of Animal Sciences
1:45 pm - **Getting anestrous cows pregnant** – Milo Wiltbank, U of Wisconsin Dept. of Dairy Science
2:30 pm - **Speaker Panel** (Wiltbank discussion leader)
3:00 pm - **PC-DART reproduction workshop** (Webb leader).

Meeting Places and Times

Tuesday, **March 2**, 10 am, Okeechobee County Extension Office, 458 Highway 98 N, **Okeechobee**, FL
Local Contact Person: Pat Miller (863) 763-6469

Wednesday, **March 3**, 10 am, Hardee County Extension Office, 507 Civic Center Drive, **Wauchula**, FL
Local Contact Person: Brent Broaddus (813) 744-5519 ext 132

Thursday, **March 4**, 10 am, Marion County Extension Office, 2232 NE Jacksonville Road, **Ocala**, FL
Local Contact Person: Russ Giesy (952) 793-2728

Friday, **March 5**, 10 am, Washington County Extension Office, 1424 Jackson Avenue, **Chipley**, FL
Local Contact Person: Andy Anderson (850) 638-6180

Registration

Early registration is $10 and provides the program, a copy of the proceedings, and a CD with the videotaped presentations once released. Lunch is free (kindly sponsored by Pfizer). Registration after March 1 is $20. Registration at the door is possible. **To register** and indicate your preferred location, please contact:

Brent Broaddus (UF/IFAS Dairy Extension)
5339 County Road 579, Seffner, FL 33584
Phone: (813) 744-5519 ext 132, Fax: (813) 744-5776
Email: broaddus@ufl.edu

More Information

Brent Broaddus (UF/IFAS Dairy Extension)
Phone: (813) 744-5519 ext 132 – Email: broaddus@ufl.edu

Albert de Vries (UF/IFAS Department of Animal Sciences)
Phone: (352) 392-7563 – Email: devries@animal.ufl.edu

Pete Hansen (UF/IFAS Department of Animal Sciences)
Phone: (352) 392-5590 – Email: hansen@animal.ufl.edu

---

## NEW YEARS RESOLUTIONS

**David R. Bray**

It is a new year once again. It is time to repeat what we did right last year and not to repeat what did not work well last year.

Mastitis was a big problem last year for many dairies. With low milk prices and the previous year's high replacement costs many of us did not cull our chronic cows. We dried off our chronic cows and, as predicted, they calved back in with high somatic cell counts.

**Resolution #1** – Cull chronic mastitis and other cows that live in the hospital herd. To do this you must keep records to determine which cows are the problem. Many people keep records in a daybook but never look at it. PC-DART has a herd health section to record all health data. These data should be recorded and looked at and culling decisions made on animals staying longer in the hospital herd than the time needed to sell milk to make a profit. If this time is longer than their profit margin, cull them. 30 days out of the bulk tank is about the limit before they become unprofitable. You can use hand recorded data as well to determine length in the hospital herd. This is more important than ever with the new "downer cow" rule. If you have a cow that needs to be culled because she is lame or has chronic mastitis or other problems, do not

put her in a lot to lose 500 pounds and become a downer cow. Make the decision before you fill her up with antibiotics.

**Resolution #2** – Milk clean, dry udders. Post-dip, and keep equipment in good repair.

**Resolution #3** – Keep your cows cool. Our summer research has shown that our cows became hot at night when no sprinklers were used at night. When hot weather comes, leave the sprinklers and fans on all night. Set the sprinkler thermostat at 68 degrees F and run them all night as long as barn temperature is above 68F. Run fans 24 hours a day if your cows have access to the barns for that time.

**Resolution #4** – Clean your fans, put timers on your sprinklers (set the timer so the cow gets wet to the skin, shuts off and turns on again before the cow dries off). Cooling occurs when we wet the cow and the fans dry the water off the cow and takes the heat with it. Usually sprinklers on for 1 to 2 minutes every 10 to 15 minutes will suffice but this varies due to water pressure fluctuations, supply and pipe size. Set your sprinklers individually for each barn, not what Joe Blow down the road uses. Also keep in mind that dirty fans are half as effective as clean ones.

**Resolution #5** – Keep your cows as clean and comfortable as possible. Most of our mastitis problems are due to *Strep uberis* This organism lives in the ground and in our free stalls, including sand bedding. Bedded packs are a huge reservoir for mastitis pathogens when wet and dirty. Remove old dirt in pasture mud holes, put in clean dirt, especially in calving lots. Clean and drain cooling ponds, keep free stalls and packs bedded and clean.

If you need help in these areas let me or any of the Dairy Agents know we will be glad to help.

---

## YOUTH DAIRY HIGHLIGHTS

**James Umphrey and Debbie Clements**

Florida dairy youth from seven counties took advantage of the First Annual fitting and grooming workshop and contest held on January 10th in Arcadia. There were over 50 youth and family members in attendance to see six teams compete. The event was an effort on the part of the State Dairy Youth Volunteer Leaders Committee to provide information to youth on the proper techniques needed to fit and groom a dairy heifer for the show. The top senior team was Adam Spann and John Larson of Okeechobee and the top junior team was Kaitlyn and Brittany Watts of Lake County.

There are a number of shows coming up for youth to show off their skills and animals. The South Florida Fair youth dairy show is **January 31** in West Palm Beach. The Florida State Fair youth dairy show is **February 15th and 16th** in Tampa. The State 4-H Dairy show and the State FFA Commercial Dairy Heifer show is Saturday **March 6th** in Orlando. Make plans to come out and watch the future of the dairy industry show off what they have learned.

Now is the time to start working on Dairy Judging for the youth interested in being a part of the State teams for the coming year. Hoards Dairyman magazine has put their previous classes on-line. They can be found by going to http://www.hoards.com/youth_corner/cjc_corner/cow_judging_results.html

There are a number of local dairy judging contests that youth can participate in that are listed below: South Florida Fair - West Palm Beach - **January 30th**, Florida State Fair - Tampa - **February 14th,** Central Florida Fair - Orlando - **March 5th.**

If you have any questions concerning upcoming judging events please feel free to contact James Umphrey 352-392-5594 and Umphrey@animal.ufl.edu or Debbie Clements at 863-763-6469 and DSClements@mail.ifas.ufl.edu. We will try to help get your youth involved. The Dairy Judging program is supported through IFAS, the SMI Milk Check-off and numerous industry supporters.

---

## BUSINESS COW COLLEGE

**Albert de Vries and Russ Giesy**

We often find that the people on our most successful dairies have great cow sense. But it is also clear that they use business principles to make the most profitable decisions.

Maybe you feel your dairy business analysis knowledge and skills could use a boost. We are offering an applied course in the fundamentals of dairy business analysis. Topics covered include:

Balance sheet, income statement, equity statement
Investment decisions (buying cows, facilities, etc)
Economics of maintaining the herd
Capital and partial budgets
Marginal costs and returns
Use of spreadsheets
Business plan
Buy or lease
Risk

Meeting place and time: In Gainesville, dates to be decided soon (second half of May 2004). **Let us know** if you are interested because we'll try to tailor to your needs.

For more information, to sign up,
or just indicate your interest, contact:

Russ Giesy (UF/IFAS Dairy Extension)
Phone: (352) 793-2728 – Email: giesyr@aol.com

Albert de Vries (UF/IFAS Department of Animal Sciences)
Phone: (352) 392-7563 – Email: devries@animal.ufl.edu

UF/IFAS Dairy Extension Website: http://dairy.ifas.ufl.edu

---

## DR. BILL THATCHER RETIRED

Dr. William W. Thatcher, Graduate Research Professor, retired on December 31, 2003, after 35 years of service. Dr. Thatcher's very successful research approach has been to first elucidate the physiological mechanisms controlling aspects of reproductive function that are amenable for manipulation to improve reproductive efficiency and then develop strategies for exploitation of this basic knowledge to develop systems, such as Ovsynch and Heat Synch, to improve reproductive efficiency at the farm level. Dr. Thatcher will continue his research efforts at UF part-time.

---

## 2002 FLORIDA DBAP SUMMARY

**Albert de Vries, Russ Giesy, and Brent Broaddus**

The Dairy Business Analysis Program (DBAP) is an annual survey of the financial results of participating dairy farms in Florida, Georgia and Alabama. The survey data are used for a financial analysis of each dairy through a comparison of the dairy's financial and production measures with results from other participating dairies. The dairies that submit data to DBAP receive a detailed report which indicates their financial strengths and weaknesses.

Summary results for the 20 Florida dairies that contributed their 2002 data are shown in the table:

| | Average | Top 6* |
|---|---|---|
| Number of cows | 1324 | 1952 |
| Milk sold / cow | 16,352 | 17,203 |
| Cows / worker | 65 | 73 |
| Milk sales / cwt | $16.08 | $16.36 |
| Other revenues / cwt | $ 1.45 | $ 1.02 |
| **Total revenues / cwt** | **$17.53** | **$17.38** |
| Labor cost / cwt | $ 3.11 | $ 2.92 |
| Feed cost / cwt | $ 7.51 | $ 6.32 |
| Crop cost / cwt | $ 0.24 | $ 0.32 |
| Machinery cost / cwt | $ 0.81 | $ 0.64 |
| Livestock cost / cwt | $ 1.74 | $ 1.46 |
| Milk marketing / cwt | $ 0.91 | $ 0.96 |
| Real estate cost / cwt | $ 0.54 | $ 0.42 |
| Depreciation / cwt | $ 1.98 | $ 2.10 |
| Other costs / cwt | $ 1.48 | $ 1.07 |
| **Total cost / cwt** | **$18.34** | **$16.21** |
| NFIFO / cwt | -$ 0.80 | $ 1.17 |
| Assets / cow | $5529 | $5805 |
| Asset turn over ratio | 0.61 | 0.61 |
| Debt / cow | $2134 | $2199 |
| Current ratio | 0.97 | 1.91 |
| Return on assets | -3% | 5% |
| Return on equity | -10% | 4% |
| Cash flow coverage ratio | 1.16 | 2.69 |

* Top 6 dairy farms based on highest net farm income from operations / cwt (NFIFO / cwt).

Data collection for the year 2003 is starting now. If you would like to participate, or learn more about DBAP, contact Russ Giesy (352) 793-2728, giesyr@aol.com, Albert de Vries (352) 392-7563, devries@animal.ufl.edu, Brent Broaddus (813) 744-5519 ext 132, babroaddus@mail.ifas.ufl.edu, Lane Ely (University of Georgia), (706) 542-9107, laneely@arches.uga.edu, or your local Dairy Agent.

---

## MAY 27, 2004 CORN SILAGE FIELD DAY

The 2004 Corn Silage Field Day will be held on Thursday, **May 27,** at the UF/IFAS Plant Science and Education Research Unit, 2556 West Highway 318, Citra, Florida 32113. Topics include field demonstrations of corn varieties and equipment and presentations by various speakers. Program details are posted on http://dairy.ifas.ufl.edu. For more information, contact Jerry Wasdin, (352) 392-1120, wasdin@animal.ufl.edu.

---

## WHAT IS THE MAXIMUM WORTH OF A DAIRY HEIFER?

**Albert de Vries**

Occasionally the question is asked how much a dairy producer can afford to pay for replacement heifers (especially when heifers were $2000). The decision to purchase a heifer is an investment decision. A basic rule is that we must only consider the cash flows (extra receipts and extra expenses) that are changed as a result of the heifer purchase. The results of these calculations are different for every farm. That is why it is important to understand the basic concepts of the analysis. Let's assume the dairy facility is not filled to capacity, the desire is to continue dairying, and the question is whether to purchase a few more heifers. For simplicity, we'll ignore the timing of the cash flows (a dollar today is worth more than a dollar tomorrow), and the effect of the heifer purchase on taxes and possible loan payments.

First, estimate the expected time the heifer stays on the farm. One estimate is 1 divided by the typical annual cull rate, for example 1 / 40% is 2.5 years.

Secondly, estimate the receipts that will change: lifetime milk sales, calf sales, and the cull value. For example, 2.5 yr * 17,000 lbs @ $16 / cwt is $6800 for milk, 2 calves at $100 is $200, and ultimately a $300 cull value. Total expected extra receipts are $7300 (or $17.18 / cwt).

Thirdly, estimate the expenses that will change. This can be tricky because many costs on farms stay the same, whether the heifer is purchased or not. Good examples of costs that do not really change are depreciation of buildings and machinery and maintenance costs. And do labor costs really change with the purchase of a few heifers? We must only consider expenses that will change: feed, breeding, may be some labor and some other variable costs. One estimate from DBAP data is that at least 30% of the total costs to produce milk are fixed. If the total cost to produce milk is, say, $16.50 / cwt (which is lower than the DBAP average), then expenses as a result of the heifer purchase will only increase by $11.55 / cwt (70% of $16.50). Total estimated extra lifetime expenses are therefore 2.5 yr * 170 cwt * $11.55 = $4909. Thus, the maximum worth of the heifer to the farm is $7300 - $4909 = $2391. A producer could pay up to $2391 to purchase the heifer and expect to come out ahead.

Because fixed costs must not be included (those have to be paid anyway), the maximum worth of a heifer to a farm is often higher than most producers think. Cows are the money makers and keeping facilities full almost always pays.

Finally, a farm can be not profitable, even when the best decision is to purchase the heifers. To be profitable, both fixed and variable costs have to be counted whereas in the heifer purchase decision, only variable costs count.

---

## EFFECT OF TREATING BERMUDAGRASS WITH INOCULANTS, MOLASSES AND A MIXTURE OF THESE ADDITIVES ON SILAGE FERMENTATION

**Adegbola T. Adesogan**

There is relatively little published information on how effective inoculants are for enhancing the production of silage from tropical grasses. This study determined the effectiveness for improving the fermentation and aerobic stability of bermudagrass, of a dual purpose inoculant, molasses, and a

mixture of the inoculant and either molasses or fiber-degrading enzymes. The rationale for evaluating the mixtures was to determine if the microbes in the inoculant were more effective when supplementary sugars are provided. Unlike conventional inoculants which are aimed at either improving fermentation or improving aerobic stability, the inoculant we examined contained bacteria that improve fermentation, and others that improve aerobic stability.

A five-week regrowth of Tifton 85 bermudagrass was conserved in mini-silos for 60 days without treatment, or after treatment with: 1) an inoculant (BB); 2) molasses; 3) BB plus molasses (BBM); and 4) BB plus fiber degrading enzymes (BBE). The inoculant was supplied by Lallemand Animal Nutrition, Milwaukee, WI and it contained *Pediococcus pentosaceus* 12455, 1 x $10^5$ cfu/g of fresh forage and *Lactobacillus buchneri* 40788, 4 x $10^5$ of fresh forage.


The untreated and BBE-treated silages had a very pungent odor that is characteristic of undesirable clostridial fermentation. The pH of additive-treated silages were lower than those of untreated silages. Additive-treated silages also had higher DM recovery than untreated silages. BB, BBM and molasses-treated silages had lower ammonia nitrogen concentrations than the untreated silages, indicating that protein degradation was lower in those treatments. BB was the most effective treatment in this respect. Residual sugar concentrations were higher in molasses-treated silages than the other silages. All forages had high acetic acid (4.8 %) concentrations and low lactic acid (1.7 %) concentrations. However, untreated and BBE-treated forages had higher concentrations of butyric acid and ammonia nitrogen, confirming that clostridial fermentation had occurred in these forages. Untreated and BBE-treated silages were aerobically stable for 10 days while BB and molasses treated silages were stable for 5 and 7 days, respectively. The main reason why the untreated and BBE-treated forages were more stable was because they contained high concentrations of butyric acid, which causes the rancid odor, but also inhibits yeast and mold growth to a greater extent than the antifungal acids in the other silages.

It is important to interpret the aerobic stability results in context. In spite of the greater stability of the untreated and BBE-treated silages, they were less desirable for feeding because their nutritive values were lower, and they had a rancid odor that reflected extensive protein degradation and clostridial fermentation. BB and molasses-treated silages had negligible quantities of butyric acid, and both of these were stable for 5 days, which is adequate for routine feeding operations.

In conclusion, this study shows that the efficiency of bermudagrass fermentation and the quality of the resulting silage can be improved by treatment with the dual purpose inoculant or molasses. Both of these treatments resulted in the production of silages that were stable for at least, five days. One advantage of using BB instead of molasses was decreased protein degradation, though this occurred at the expense of residual sugar concentration. No consistent benefits were evident when the inoculant was mixed with molasses or fibrolytic enzymes.

## A GUIDE TO HEALTIER CALVES:
### Diseases of Dairy Calves
### Part I. Enterotoxemia (Sudden Death Syndrome)

**James E. Umphrey**

Clostridium perfringens is an organism that occurs naturally in the soil and is often found in the gut of normal, healthy calves. Certain conditions allow the clostridial organism to rapidly multiply in the intestinal tract and produce a potent enterotoxin that damages blood vessels in the brain, large intestine and numerous other body organs. Calves that have a healthy appearance and appear to be performing well are susceptible to this disease. Death usually occurs suddenly within 24 hours of onset of disease.

Causes are many but are generally related to the feeding program. The four primary causes of SDS are: 1) overfeeding milk; 2) overfeeding grain, both of which can lead to overeating; 3) changing grain mixes suddenly, and 4).not weaning calves after she starts consuming adequate grain. Any one of these or a combination can cause a valuable calf to suddenly become ill and die.

Calves should receive 10% of their body weight in whole milk or quality milk replacer per day. If a calf weighs 80 pounds, she needs 8 pounds of milk. Additional milk can cause the calf more harm than good. Diarrhea can occur lowering the calf's resistance to disease including SDS. Calves 2-3 weeks of age can handle 2-3 gallons (or more) of milk per day without ill effects.

Grain consumption should be monitored very closely. Your goal is to have the calf eating 2.5 - 3% of her body weight at weaning. The amount of milk consumed should stay constant and as the calf grows her additional nutritional needs are met by an increase in grain consumption.

Calves at weaning (8 weeks) should be consuming 3-4 pounds of an 18% crude protein feed. At this point calves can be removed from milk feeding over 3-7 days by cutting milk feeding in half for a few days and then complete removal. Some research has shown that calves can be weaned earlier or when consuming ~2 pounds of feed per day for 2-3 days in a row. This can happen in as little as 5 weeks of age. Careful observation must occur if attempting to wean calves this early.

A good quality calf starter should be selected. Sudden changes in feed can throw calves off feed and will cause changes in the micro-flora of the gut. This change in the gut will allow the clostridium bacteria a chance to start growing rapidly. Calf starters should contain 18% crude protein. Research shows that if 35-40% of the protein is of the by-pass type it will help the calf grow in stature. Dried brewers grains are best for getting by-pass protein in calves. Adding 10-15% cottonseed hulls has been shown to have an advantage in feeding young calves.

A good vaccination program can aid in the prevention of SDS but it is not a substitute for properly managing the feeding program. Clostridium type C&D toxoid vaccine should be used in dry cows and springing heifers to establish clostridal antibodies. Two vaccinations of the dam, 2-3 weeks apart, should provide adequate immunity for the newborn calf. For calves, vaccinations should be made at 2 weeks of age and repeated in 2-3 weeks.

The Florida Dairy Update newsletter is published on a quarterly basis by the University of Florida, Department of Animal Sciences as an educational and informational service. Please address any questions comments or suggestions to Albert de Vries, Editor, Dairy Update, PO Box 110910, Gainesville, FL 32611-0910. Phone: (352)392-7563. E-mail: devries@animal.ufl.edu. UF/IFAS Dairy Extension website: http://dairy.ifas.ufl.edu