

January 2004

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Prepared by Extension Specialists in Animal Sciences

- ❖ **J.D. Arthington**
Beef Cattle Management, Ona
- ❖ **J.N. Carter**
Beef Cattle Extension Specialist, Marianna
- ❖ **G.R. Hansen**
Beef Cattle Production, Marianna
- ❖ **F.G. Hembry, Professor**
Department Chairman, Gainesville
- ❖ **M.J. Hersom**
Extension Beef Cattle Specialist, Gainesville
- ❖ **E.L. Johnson, Associate Professor**
Extension Equine Specialist, Gainesville
- ❖ **T.T. Marshall, Professor**
Beef Cattle Management, Gainesville
- ❖ **R.O. Myer, Professor**
Animal Nutritionist, Marianna
- ❖ **R.S. Sand, Associate Professor**
Extension Livestock Specialist, Gainesville
- ❖ **W. Taylor, Coordinator**
Youth Education/Training, Gainesville
- ❖ **S.H. TenBroeck, Associate Professor**
Extension Equine Specialist, Gainesville
- ❖ **T.A. Thrift, Assistant Professor**
Beef Cattle Nutrition, Gainesville




Dates to Remember

January

- 1** New Year's Day
- 10** Horse Judging School - Gainesville, FL
- 10** 4th Annual Lake City Invitational Brangus & Angus Bull Sale - Lake City, FL
- 13** Ocala Bull Sale - Ocala, FL
- 15** 21st Annual Florida Cattlemen's Institute and Allied Trade Show - Kissimmee, FL
- 15-16** Humane Care and Handling of Livestock Conference - Gainesville, FL
- 16-18** Breeding Management Short Course - Gainesville, FL
- 17** County 4-H & Open Horse Show - Newberry, FL
- 19** Martin Luther King, Jr. Day (Holiday)
- 20** North FL Beef & Forage Group Presents: Forage & Pasture Management - Suwanee County Extension, Live Oak, FL
- 21-23** AI Management School - Okeechobee, FL
- 22** North FL Beef & Forage Group Presents: Forage & Pasture Management - Putnam County Extension, East Palatka, FL
- 22-23** 2004 Florida Ruminant Nutrition Symposium - Gainesville, FL
- 24** Florida Bull Test Sale - Marianna, FL
- 27** 4-H Horse Project Committee Meeting - Alachua County Extension, Gainesville, FL
- 27** 4-H Horse Project Seminar - Alachua County Extension, Gainesville, FL

February

- 5&9** FL State Fair: Open Beef Shows - Tampa, FL
- 6&10** FL State Fair: Youth Beef Shows - Tampa, FL
- 7** FL State Fair: 4-H Day - Tampa, FL
- 7** FL State Fair: 4-H Livestock Judging - Tampa, FL
- 10** FL State Fair: Youth Steer Showmanship - Tampa, FL
- 11** FL State Fair: Youth Steer Show - Tampa, FL



Breeding Management Short Course
January 16-18, 2004

See page 3 for more details.



Beef Management Calendar

January

- ☑ Apply lime for summer crops.
- ☑ Check for lice and treat if necessary.
- ☑ Control weeds in cool season pastures.
- ☑ Begin grazing winter clover pastures when approximately 6 inches high. Rye should be 12-8 inches high.
- ☑ Check mineral feeders.
- ☑ Put bulls out for October calving season.
- ☑ Make up breeding herd lists if using single sire herds.
- ☑ Watch for calf scours.
- ☑ Give bulls extra feed and care so they will be in condition for breeding season.
- ☑ Make sure cow herd has access to adequate fresh water.
- ☑ Buy only performance tested bulls with superior records.
- ☑ Get taxes filed.
- ☑ Discuss herd health with you veterinarian and outline a program for the year. Review herd health program with your veterinarian regularly.
- ☑ Carry a pocket notebook to record heat, breeding abnormalities, discharges, abortions, retained placentas, difficult calvings and other data.
- ☑ Observe cow herd for calving difficulties.
- ☑ Watch for grass tetany on winter pastures.
- ☑ Increase magnesium levels in mineral mixes if grass tetany has been previous problem (if you are not already using a high magnesium mineral).
- ☑ Examine bulls for breeding soundness and semen quality prior to the breeding season.
- ☑ Vaccinate cows and heifers against vibriosis and leptospirosis prior to the breeding season.

February

- ☑ Top dress winter forages, if needed.
- ☑ Check and fill mineral feeders.
- ☑ Put bulls out with breeding herd.
- ☑ Work calves (identify, implant with growth stimulant, vaccinate, etc.).

- ☑ Make sure lactating cows are receiving an adequate level of energy.
- ☑ Watch calves for signs of respiratory diseases.
- ☑ Cull cows that failed to calve while prices are seasonally up.
- ☑ Check for lice and treat if needed.

March

- ☑ Prepare land for summer crops.
- ☑ Begin grazing warm season permanent pastures.
- ☑ Check and fill mineral feeder.
- ☑ Observe bulls for condition and success. Rotate and rest if needed.
- ☑ Deworm cows as needed.
- ☑ Make sure calves are healthy and making good weight gains.
- ☑ Hang forced-use dust bags by April 1st for external parasite control or use insecticide impregnated ear tags.
- ☑ Identify, vaccinate, implant, and work late calves.
- ☑ Put bulls out March 1st for calving season to start December 9.
- ☑ Remove bulls March 22nd to end calving season January 1.



Livestock Summary

Cattle prices are at record levels thanks to continued very strong domestic and export demand for beef. This trend has pulled fed cattle marketing ahead of schedule and producers are showing little inclination toward herd expansion.

Continued poor forage conditions in many areas and uncertainties over domestic cattle/beef prices stemming from the discovery of a single cow with BSE in Canada on May 20 has also contributed to this caution.

To make matters worse, the opportunity cost of retaining heifers, even in areas with adequate forage, is very high. Consequently, female slaughter remains very large with third-quarter heifer production mirroring the record levels of the mid-1970's.

Similarly, total cow and dairy cow slaughter this summer will likely be the largest since 1997, being the

second year of herd liquidation in this cattle cycle. Conversely, beef cow production is the largest since 1998.

The dairy cow sector continues to adjust cow inventories down in response to poor returns, while the beef sector in many areas still remains concerned with forage uncertainties and faces a high opportunity cost for retaining replacement heifers.

This September, Choice boxed beef prices averaged \$156.55 per cwt which ran about 40 percent higher than last year's prices. Select beef prices were also up about 20 percent during that same period.

These dramatic price increases are serving to ration the extremely tight supply of higher quality beef. As fed cattle supplies have been pulled ahead and slaughter weights have been held down, consumers are starting to shift their preference toward Select beef.

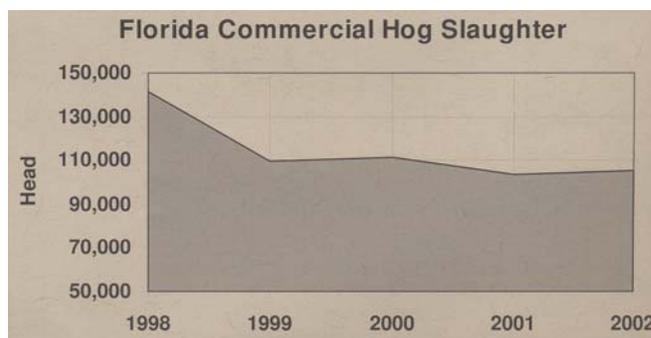
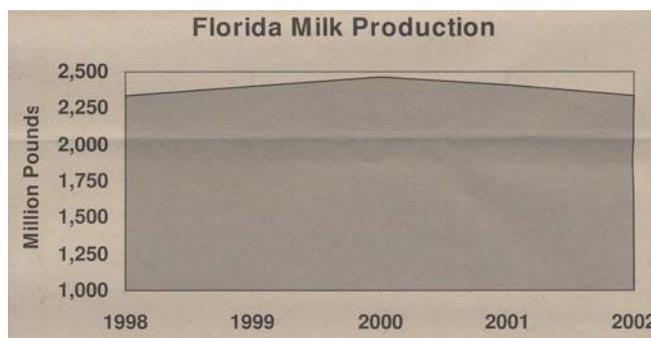
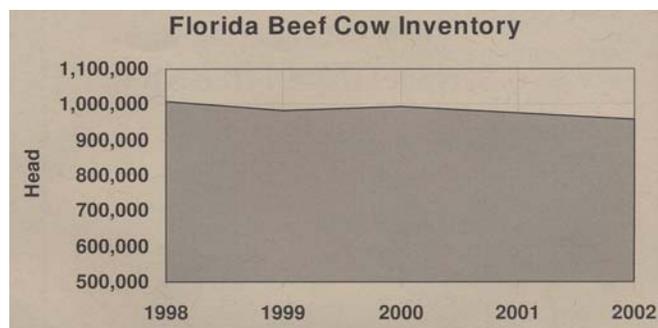
Given this tight fed cattle supply situation, retail beef prices are likely to continue on a record-setting pace as the higher prices are passed onto consumers.

This year's calf crop is expected to be 38 million head, the smallest calf crop since 1951. These supplies will continue to tighten until additional beef and/or slaughter feeder cattle begin to be imported from Canada.

Regardless of what happens with Canada, beef supplies will remain very tight over the next couple of years as increased supplies are simply not biologically possible until at least 2006.

To say the least, 2003 has become a very interesting year for Florida's cow/calf operators while the future of the industry holds many challenges and opportunities.

Livestock Trends



SOURCE: The Florida Agri-Journal
 Researched by Tony Young
 Marketing Specialist I
 Division of Marketing
 Release - November 5, 2003

-RSS-

Breeding Management Short Course

January 16-18, 2004

Conducted jointly by the Department of Animal Sciences, Institute of Food and Agricultural Sciences (IFAS) and the Department of Large Animal Clinical Sciences, College of Veterinary Medicine (CVM).

Course Philosophy

This short course provides horse breeders with the opportunity to learn fundamental concepts and techniques of artificial insemination and breeding management.

This intensified 2 ½ day program offers an opportunity to collect and evaluate stallion semen samples, including cooled or frozen storage and shipping,

and appropriate hygiene techniques for genital tract examination of mares, as well as various insemination techniques.

Participants will attend lectures which include: mare and stallion anatomy, physiology of the estrous cycle, and the use and interpretation of uterine culture and biopsy. Participants will also see demonstrations on embryo transfer and pregnancy diagnosis techniques.

Emphasis will be placed on obtaining basic understanding of reproductive function as well as learning management techniques.

*Attendance Limited - Hands-on - Interactive -
Networking Opportunity*

General Information

Location: All lectures and labs will be held on the University of Florida campus in the Animal Sciences Building and the Large Animal Teaching Hospital located on Shealy Drive off of Archer Road. Check-in will be in room 102 of the Animal Sciences building. Driving directions available at: www.animal.ufl.edu

Hotel Accommodations: A block of rooms are reserved for BMSC participants at the Cabot Lodge in Gainesville, Florida, 3726 SW 40th Blvd. Contact the hotel directly at 1(800)843-8735 or (352)375-2400 and mention the Breeding Management Short Course to receive the reduced rate of \$65 per night. The hotel features daily continental breakfast and a cocktail reception in the evening. After December 31, reservations are on space available basis.

Registration: Attendance is limited to 24 persons so please register early. Included in your registration fee is all course materials, dinner on Saturday, daily lunches, and morning and afternoon refreshment breaks.

Cancellations: Refunds, less a \$25 administrative fee, will be issued for written requests received by January 1, 2004. A substitution of attendees may be made at any time, with no charge, by calling (352)392-1916. If this course is cancelled for any reason, the University's liability is limited to a refund of the registration fees paid.

For More Information:

Please visit <http://www.animal.ufl.edu/extension/equine/content/SCbrochure.pdf>.

For questions concerning content contact:
Dr. Saundra TenBroeck, (352) 392-2789 or
tenbroeck@animal.ufl.edu.

For questions concerning registration, contact:
Pam Gross, (352) 392-1916 or
gross@animal.ufl.edu.

Faculty and Sponsors

Eleanor Green, DVM, Chair Department of Large Animal Clinical Sciences (LACS)

F. Glen Hembry, PhD, Department of Animal Sciences

Ed Johnson, PhD, Extension Horse Specialist, Department of Animal Sciences

Margo Macpherson, Assistant Professor, LACS

Ed Ott, PhD, Professor, Department of Animal Sciences

Malgorzata Pozor, DVM, Instructor, LACS

Dan Sharp, PhD, Professor, Department of Animal Sciences

Mats Troedson, DVM, Professor, LACS

Saundra TenBroeck, PhD, Associate Professor, Department of Animal Sciences

Dana Zimmer, DVM, Assistant Professor, LACS

SOURCE: Dr. Saundra TenBroeck
Extension Equine Specialist
tenbroeck@animal.ufl.edu
(352) 392-2789
Department of Animal Sciences
University of Florida
Gainesville, FL

-SHT-



USDA Veneman Announces Bovine Genome Sequencing Project

NIH To Lead International Effort

Agriculture Secretary Ann M. Veneman has announced the launch of the \$53 million Bovine Genome Sequencing Project during a ceremony at the U.S. Department of Agriculture.

This joint sequencing effort is a collaboration among the National Human Genome Research Institute (NHGRI), which is part of the National Institutes of Health (NIH); USDA; the state of Texas; Genome Canada; The Commonwealth Scientific and Industrial Research Organization of Australia; and Agritech Investments Ltd (a subsidiary of Meat New Zealand), Dairy Insight Inc. and AgResearch Ltd, all of New Zealand.

“This project is an excellent example of what can happen through public/private partnerships,” said Veneman. “Sequencing the bovine genome is a vital first step that will lay the groundwork for breakthroughs that will benefit both human health and agriculture. Eliminating hunger, improving nutrition and reducing agriculture’s impact on the environment are all potential outcomes of this research.”

Contributors to the Bovine Genome Sequencing Project include: NHGRI, \$25 million; USDA, \$11 million; the state of Texas, \$10 million; Genome Canada, \$5 million; The Commonwealth Scientific and Industrial Research Organization of Australia, \$1 million and Agritech Investments Ltd., Dairy Insight Inc. and AgResearch Ltd., all of New Zealand, \$1 million.

Attending the event were Dr. Joseph J. Jen, agriculture undersecretary for Research, Education and Economics; Dr. Francis Collins, director of NHGRI; Kathie L. Olsen, associate director, White House Office of Science and Technology Policy; Dr. Martin Godbout, president and CEO of Genome Canada and representatives from the state of Texas, Australia, and New Zealand.

“The National Human Genome Research Institute is gratified that the U.S. federal government, state

government and international agencies have joined together to support this important project. This unique collaboration will have benefits for both the world’s health and the world’s food supply,” said Dr. Collins.

The bovine genome is similar in size to the genomes of humans and other mammals, with an estimated size of 3 billion base pairs. Besides its potential for improving dairy and meat products and enhancing food safety, adding the genomic sequence of the cow (*Bos taurus*) to the growing list of sequenced animal genomes will help researchers learn more about the human genome. The genomic DNA sequencing activities will be carried out by Baylor College of Medicine’s Human Genome Sequencing Center in Houston, while the full-length cDNA sequencing (the sequencing of genes) will be carried out at the sequencing platform of Genome British Columbia, located at the British Columbia Cancer Agency in Vancouver and at the University of Alberta.

“The recent occurrence of “Mad Cow Disease,” involving a single cow in Canada, demonstrated quite clearly how deeply an economy can be affected by a problem in the cattle industry and how crucial it is to avoid another situation like this one,” said Dr. Martin Godbout, president & CEO of Genome Canada. “It is important for the international community to invest in fundamental science that will help us all overcome the challenges of this industry. Research in this field is imperative and Genome Canada is extremely proud to be a partner in this important project and very enthusiastic it has now been launched.”



Type of cow that is being sequenced.

Genome Canada is the primary funding and information resource relating to genomics and proteomics in Canada. To date, Genome Canada has invested more than \$310 million across Canada. With funding from other partners, this amounts to an investment of \$710 million in 57 innovative genomics and proteomics research projects and science and technology platforms.

NHGRI is one of the 27 institutes and centers at NIH, an agency of the Department of Health and Human Services. Additional information about NHGRI can be found at www.genome.gov.

SOURCE: USDA, Alisa Harrison
(202) 720-4623
<http://www.usda.gov>
Genome Canada, Anie Perrault
(613) 296-7292
NHGRI, Rebecca Kolberg
(301) 594-2134
Release - December 12, 2003

-TTM-



Any Labeling Program Must Result in Financial Benefit to Producers

Profits must end up in the pockets of cattle producers in order for the National Cattlemen's Beef Association (NCBA) to get behind a specific country of origin labeling program, an NCBA representative told participants of the R-Calf Summit on Thursday, Dec. 11.

Jay Truitt, NCBA executive director for legislative affairs, told the group that NCBA first raised arguments for country of origin labeling in 1996, and continues to support the effort of U.S. cattle producers to establish a means for promoting their own born, raised and processed in the U.S. product. Truitt presented to the group the NCBA Country of Origin Labeling Task Force's recommendation for a voluntary program that would consist of a U.S. label providing value to the consumer and meeting the expectations of producers. These producers want value from the program through differentiating their product with the USA label.

The NCBA Task Force, which represents all industry segments, met December 9-10 in Denver, and a plan will be presented to cattlemen at the Cattle Industry Annual Convention in Phoenix, January 28-31.

Truitt told Summit participants that finding ways around the current law does not meet requirements of producers who want a workable country of origin labeling plan. "You don't make mistakes in a law then try to fix them later," he said.

According to Truitt, it's also disconcerting that R-Calf is aligning itself on this issue with environmental and special interest groups that do not have the best interests of the cattle industry at heart. These include Public Citizen, the Consumer Federation of America, the Defenders of Wildlife and the Sierra Club National Agriculture Committee.

Truitt also warned the group of extensive record keeping that the mandatory country of origin law would create. "The Sierra Club Ag Committee should be against the law, because it would require the killing of a lot of trees to implement it," Truitt says.

Instead, Truitt outlined a proposal recommended by the NCBA Country of Origin Labeling Task Force. That plan would include pilot programs to be conducted under existing approved USDA programs. The next steps, to take place in January, would be to identify existing programs that could be used as models, and then hold a meeting with other industry segments to review the task force recommendations and seek input and participation.

NCBA will ultimately use its pilot programs to determine how the industry will implement country of origin labeling for all segments of the beef marketing chain. The efforts of the task force are being taken to meet expectations of producers and fulfill the directives approved by the NCBA Board of Directors.

SOURCE: National Cattlemen's Beef Association
Centennial, CO
<http://www.beef.org>
cattle@beef.org
Release - December 12, 2003

-RSS-



Nutrient Boost for Alfalfa Silage

It's a familiar scene in the country—a tractor chugging its way across a field, mowing down swath after swath of green alfalfa. Many farmers store and ferment these alfalfa clippings in silos. By doing so, they turn the forage into silage, the cow's equivalent of sauerkraut.

As a forage crop, alfalfa has many benefits. It fixes nitrogen in the soil—meaning there's no need to add nitrogen fertilizer—and it's a good scavenger of excess soil nitrate left by overfertilized row crops. And because it's high in protein, it's great for livestock, such as dairy cattle. Unfortunately, when alfalfa is processed into silage, up to 85 percent of its protein breaks down into nonprotein nitrogen (NPN) through a process known as proteolysis. Cows use NPN much less efficiently than

protein.

Now, researchers at ARS's U.S. Dairy Forage Research Center in Madison, Wisconsin, and ARS's Plant Science Research Unit in St. Paul, Minnesota, have found an environmentally friendly way to reduce protein degradation in ensiled crops such as alfalfa. ARS has filed a patent application on the discovery, which could save farmers more than \$100 million per year.

"Right now, no practical techniques are available to farmers who want to reduce protein breakdown in alfalfa silage," says plant physiologist Ronald D. Hatfield, of the Madison center. Research has shown that applying formic acid or using heat treatments can reduce protein degradation by 12 to 28 percent, but these methods are either too caustic or too expensive for farmers to use profitably. Formic acid, for example, must be handled with care and can be hard on some equipment.

But Hatfield and two other scientists at the center—agricultural engineer Richard E. Muck and molecular biologist Michael L. Sullivan—along with Deborah A. Samac, a plant pathologist in the St. Paul unit, have discovered a way to reduce protein loss by using ingredients extracted from potato skins and red clover. Research leading up to their invention began more than 10 years ago.

Clues in the Clover

In the early 1990s, Muck and Hatfield were helping Beth Jones, a graduate student at the University of Wisconsin, research red clover and alfalfa silage. They found that although red clover and alfalfa have similar protein levels, the protein in red clover does not degrade during ensiling nearly as dramatically as the protein in alfalfa. In fact, red clover silage preserves 65 to 80 percent of its protein as true protein.

The researchers wanted to know why red clover, which outwardly seems so similar to alfalfa, made such excellent silage. "We looked to see whether there were different types of proteins in the two plants or differences in their protease activity," says Muck. (Proteases are the enzymes responsible for breaking down proteins.) They didn't find anything at first.

But later, a clue emerged. Alfalfa clippings would



A row of wilted, chopped, green alfalfa is collected into a wagon before being taken to the silo. Photo by Stephen Ausmus.

remain green for a while after being cut, but red clover clippings would turn brown right away. Further studies revealed that red clover contains large amounts of polyphenol oxidase (PPO), the same enzyme that turns cut surfaces brown in apples, bananas, potatoes, and many other fruits and vegetables. Alfalfa has insignificant amounts of PPO.

For PPO to cause the browning reaction, it needs something to act on—a substrate—as well as exposure to oxygen. The substrates of choice for PPO are *O*-diphenols. They include compounds such as caffeic acid and related compounds, or conjugates, such as chlorogenic acid. In addition to containing high levels of PPO, red clover contains high amounts of caffeic acid and its conjugates. Alfalfa doesn't.

Hatfield explains how red clover safeguards its protein. "When the clover is chopped up, its cells release PPO," he says. "Once the PPO is exposed to oxygen, it reacts with the plant's caffeic acid and forms a very reactive molecule known as an o-quinone. Quinones bind themselves to the proteases and keep them from degrading red clover's protein."

Since making these discoveries, Sullivan has been able to extract the PPO gene from red clover, and Samac has inserted it into an alfalfa plant. They recently conducted an experiment in which they chopped some transgenic alfalfa plants into 2-centimeter pieces, treated them with a bacterial inoculant, applied caffeic acid to about half of them, and let them sit for 2 weeks. Bacterial inoculants are the principal silage additives in the United States; they ensure fast and efficient fermentation in the silo.

The alfalfa plants treated with caffeic acid had 15 percent less protein degradation than untreated plants. The scientists believe they can preserve even more alfalfa protein if they improve their processing technique and grind the plant into smaller pieces.

A Potato Mash Alternative

Caffeic acid is present in high concentrations in a variety of fruits and vegetables, most notably potato skins—a common agricultural waste product. The scientists are currently working with different potato-processing plants to determine how easy it would be to

extract large amounts of caffeic acid from leftover skins.

They are also looking at ways to insert the PPO gene into a bacterial inoculant. Such inoculants would excrete the protective PPO enzyme and enhance fermentation of the silage. Farmers could apply the inoculant and the potato-derived caffeic acid to their alfalfa crop. In this way, they could achieve results similar to the ones reached with transgenic alfalfa without having to grow a transgenic plant.

This technology should work on other ensiled crops as well, including corn and rye grass.—By Amy Spillman, formerly with ARS.

This work is part of Food Animal Production (#101) and Rangeland, Pasture, and Forages (#205), two ARS National Programs described on the World Wide Web at www.nps.ars.usda.gov.

Ronald D. Hatfield, Richard E. Muck, and Michael L. Sullivan are with the USDA-ARS U.S. Dairy Forage Research Center, 1925 Linden Dr., West, Madison, WI 53706-1108; phone (608) 264-5358 [Hatfield], (608) 264-5245 [Muck], (608) 264-5397 [Sullivan], fax (608) 264-5147.

Deborah A. Samac is in the USDA-ARS Plant Science Research Unit, 317 Christensen Laboratory, 1515 Gortner Ave., St. Paul, MN 55108; (612) 625-1243, fax (651) 649-5058.



While a front-end loader works to fill this bunker silo, agricultural engineer Richard Muck takes forage samples that will be analyzed later for nutritive value and moisture content. Photo by Stephen Ausmus.

SOURCE: Amy Spillman, formerly with ARS Agricultural Research Service
<http://www.ars.usda.gov>
 Release - December 2003

-MJH-