

## Increase Vitamin E to Older Cows during Heat Stress

Charlie Staples, Gabriel Gomes, and Jose Santos

Changes in life events and environment, such as parturition, milk production, and heat stress, substantially increase demands on the cow including her oxygen requirements. These increased requirements for oxygen usually result in increased production of troublesome reactive oxygen compounds. These must be neutralized with an anti-oxidant such as vitamin E.

At the University of Florida, we increased the daily intake of supplemental vitamin E from 1000 to 3000 international units (IU) during the close-up nonlactating period and from 500 to 2000 IU after calving. The 1000 and 500 IU amounts are what is recommended by the National Research Council. In addition, the cows were kept in shade only or with shade, fans, and sprinklers during the last 4 weeks of pregnancy. After calving, all cows were provided with shade, fans, and sprinklers. Milk yield and feed intake were measured for the first 15 weeks.

The older cows responded differently than the first-calf heifers. If older cows were offered shade before calving, 3.5% fat-corrected milk production increased from 79.4 lb per day to 87.9 lb per day. Yet feeding additional vitamin E to the older cows without fans and sprinklers had the same effect as cooling the cows before calving; that is, 3.5% fat-corrected milk increased from 79.4 lb per day up to 87.0 lb per day. No benefit of feeding extra vitamin E was detected if older cows were evaporatively cooled before calving. Therefore milk yield by older cows was the same if 1) they were evaporatively cooled without increased supplementation of vitamin E or 2) they only had shade before calving but were fed extra vitamin E. These increased amounts of milk yield were supported by increased amounts of feed intake.

The story was much different for first-calf heifers. Production of 3.5% fat-corrected milk was reduced if they were fed vitamin E above NRC recommendations regardless of prepartum cooling method. Milk yield dropped from 61.1 to 49.7 lb per day by feeding extra vitamin E to heifers only given shade. But milk also

dropped from 59.5 to 54.4 pounds per day if extra vitamin E was fed to heifers cooled with fans and sprinklers before calving.

Why such a difference in response between heifers and cows? Based upon lower plasma concentrations of nonesterified fatty acids (NEFA), less loss of body weight, and less negative energy balance, first calf heifers were under less stress postpartum than were older cows. Feeding 3 to 4 times the recommended amount of the antioxidant vitamin E to these lower-stressed heifers may have caused vitamin E to form many tocopherol radicals that damaged cell membranes and hurt performance rather than act as an antioxidant and help performance as it did with the older cows. The combination of increased heat stress before calving and greater metabolic stress due to greater milk production postpartum may have created a situation in which the requirement for an antioxidant, vitamin E, was increased for older cows.

For more information, contact Charles Staples at [chasstap@ufl.edu](mailto:chasstap@ufl.edu).

## UF/IFAS looking for a Regional Specialized Extension Agent II or III - Agriculture (Dairy)

University of Florida/IFAS Extension and Okeechobee County seek to fill a 12-month, permanent status-accruing Agriculture (Dairy) Regional Specialized Agent (RSA) position. The regional focus of the position will encompass the south Florida dairy-producing counties of Okeechobee, Hardee, Highlands, and DeSoto. The position will be based at the UF/IFAS Extension Office in the city of Okeechobee. IFAS has repurposed the position previously held by Courtney Davis in Okeechobee. The job position is found at: <http://explore.jobs.ufl.edu/cw/en-us/job/496811/regional-specialized-extension-agent-ii-or-iii-agriculture-dairy>

Applications close on April 28, 2016.

## 2016 North American Intercollegiate Dairy Challenge

Mary Sowerby

Over 400 people congregated in Syracuse, New York, April 7-9 for the largest annual undergraduate dairy event in the U.S. and Canada: The North American Intercollegiate Dairy Challenge (NAIDC). Thanks to the support of Dairy Check-off participants, countless industry and farm sponsors nationwide, and Florida dairy producers who opened their dairies for practices and tours, the University of Florida sent a Dairy Challenge team of four students (who did very well), plus two who attended the Dairy Challenge Academy.

The Dairy Challenge contest has been in existence about 15 years. Conceived by dairy industry members and university faculty to produce an event where students could pull all their classroom learning into practical consultant-like suggestions for real dairy farms, while industry members had the chance to meet these potential future employees, the NAIDC has been so successful, that a practice event, the Dairy Challenge Academy, was started along with it four years ago. The 120 Academy students were put on teams of eight students (all from different universities) with two industry “mentors,” then sent out to evaluate dairies just like the Dairy Challenge teams. But they are all about learning, not competing. Ultimately, each Academy member does give part of a team presentation, like the contest team members, with recommendations for the dairy they evaluated.

There were 32 contest teams this year from Washington state to Alberta, Canada, to Florida, to Maine, to California and many places in between. Florida was represented by four outstanding students: Monika Trejos (Microbiology major from Orlando who is a past UF Dairy Science Club President and has future plans in the area of animal health after graduating this May); Nekia Walker (Animal Sciences major from Daytona Beach, who plans to work in the field of animal reproduction after August graduation); Chelsea Allen (Animal Sciences/Extension Education major from Hudson with plans to help producers/4-H students by becoming an Extension agent after she graduates at the end of this summer) and Wayne Garcia, II, (current UF Dairy Science Club president, Animal Sciences major from St. Petersburg, graduating in May and headed to UF Vet School this fall).



This team, most of whom had never set foot on a dairy farm before entering UF, took third place in the group of eight universities who all evaluated the same

farm. Cal Poly won first place and the University of Alberta, Canada took second.

UF junior Animal Sciences major Catalina Mejia from Miami and sophomore, Animal Sciences major, Gloria Rodriguez from Homestead both attended the Dairy Challenge Academy and both gave superb presentations for their multi-university teams.

Following are comments from each of the student participants about their Dairy Challenge experience:

Nekia Walker – “I found Dairy Challenge to be a great experience during my second visit. It was amazing to see how much I learned about the dairy industry since attending Academy last year. I also really enjoyed interacting with the sponsors on a personal level and seeing how they got to where they are today in their careers, as well as learning about the opportunities their companies have to offer.”

Monika Trejos – “Dairy Challenge is a wonderful opportunity to apply what I’ve learned in a real world context. It also is a great chance to learn from industry professionals about all the possibilities in the dairy industry. I’ve grown so much personally and professionally from this competition.”

Chelsea Allen – “I have been extremely fortunate that I’ve been able to be involved with the Dairy Challenge for the past two years. Being a part of this program has allowed me to network with my peers and leaders in the dairy industry. I’m grateful for all of the knowledge I’ve gained and all the places I’ve been able to visit. I would recommend this experience to anyone interested in learning more about the dairy industry.”

Wayne Garcia – “The Dairy Challenge provides students a unique opportunity to expand our knowledge of the dairy industry. Not only is this an invaluable experience to learn more about dairy consulting, but also to connect with producers, innovative companies, and our peers from other colleges.”

Catalina Mejia – “Dairy Challenge has been an incredible opportunity for me in all kinds of ways. It helped me understand the dairy industry better and analyze the differences from state to state. It has also helped me to meet not only people working in the industry but also to network with fellow students from different schools. Definitely a great experience for anybody with an interest in dairy.”

Gloria Rodriguez – “Dairy Challenge was an incredible experience for students to really learn the importance and function of the industry. It was great to meet others from all over North America who have similar interests in dairy production. Had a fantastic time; can’t wait for next year’s opportunities.”

Once again, thank you to all the dairy farm and industry sponsors who have helped finance this opportunity for the students and all the dairy farms who

have let class, team and Dairy Science Club members visit their dairies in the past academic year - especially Ed Silva who orchestrated a “mock” Dairy Challenge held at American Dairyco, Branford, shortly before the real contest.

Other dairies equally appreciated include: Lonesome Meadow Dairy, Full Circle Dairy, Lyle Stanley Trace, North Florida Holsteins, Alliance Dairy, Grassy Bell Dairy, White Oak Dairy, Suwannee Dairy, M.G. Dairy, Jerry Dakin Dairy, Cameron Dakin Dairy, Shenandoah Dairy, UF/IFAS Dairy Unit, and many others who have willingly opened their doors to students in the past.

Thank you for being part of the Dairy Challenge mission of “Developing tomorrow’s dairy leaders and enhancing programs of the dairy industry by providing education, communication and networking among students, producers, agribusiness, and university personnel.”



Top: University of Florida 2016 Dairy Challenge team members included (from left) Monika Trejos, Nekia Walker, Wayne Garcia, and Chelsea Allen. Coach was Mary Sowerby. Below: Attending the Dairy Challenge Academy were Catalina Mejia and Gloria Rodriguez (fifth and sixth from left).

Learn more about the North American Intercollegiate Dairy Challenge at <http://www.dairychallenge.org> or contact Mary Sowerby at [meso@ufl.edu](mailto:meso@ufl.edu)

## Proceedings 2016 Florida Ruminant Nutrition Symposium Now Online



The proceedings of the 27<sup>th</sup> Florida Nutrition Symposium are now online at <http://dairy.ifas.ufl.edu/rns/>. The proceedings contain the written materials from 13 experts on various aspects of ruminant nutrition. The Symposium was held in Gainesville, FL, on February 15 - 17, 2016, and attracted over 200 attendees, mostly from the allied dairy and beef feed industries.

## Proceedings 2016 Florida Dairy Production Conference Now Online



The 52<sup>nd</sup> Florida dairy Production Conference was held in Gainesville, FL, on April 6, 2016. The Conference attracted over 150 attendees from all aspects of the Florida dairy industry. The proceedings are now available at <http://dairy.ifas.ufl.edu/dpc/>.

## 2016 Family Day at the Dairy Farm a Success

Albert De Vries

The UF/IFAS Dairy Unit held its 3<sup>rd</sup> Open House (named Family Day at the Dairy Farm) for the general public on Saturday March 19, 2016. Despite the forecast rain and actual drizzle, over 800 visitors came out and overwhelmingly enjoyed the visit. Visitors watched



cows being milked, toured barn facilities, pet calves, made butter and learned how UF/IFAS dairy research and Extension help the state’s dairy farmers produce better milk at lower cost, while keeping their herds comfortable and healthy, and protecting the environment. Seventeen stations were set up by the Dairy Unit staff, Florida Dairy Farmers, Southeast Milk, and students, staff and faculty from the Department of Animal Sciences and the College of Veterinary Medicine. Over 40 volunteers helped with jobs such as registrations, parking, garbage collection,

and transportation of visitors. Because the recent rains made visitor parking at the Dairy Unit not feasible, free parking was generously made available at the Farm Credit of North Florida property on US 441 in Alachua. Vans and a tour bus shuttled visitors back and forth to the Dairy Unit. Donations from sponsors paid for the expenses.



*Young and old alike enjoyed Family Day at the Dairy Farm, the UF/IFAS Dairy Unit Open House held on March 19, 2016. The event attracted over 800 visitors.*

More pictures available at <https://www.facebook.com/FamilyDayattheDairyFarm/photos>

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 Receive *Dairy Update* and other announcements of UF Dairy Extension events by email. Subscribe and unsubscribe by visiting <http://dairy.ifas.ufl.edu/dairyupdate-L.shtml>



### Prediction of the Future Florida Mailbox Price and Future All Milk and Feed Prices: April 2016 - March 2017

Month	Predicted FL mailbox price (\$/cwt milk)	2014 Farm bill formulas	
		Predicted All-Milk price (\$/cwt milk)	Predicted feed cost (\$/cwt milk)
Apr-16	16.88	14.64	7.86
May-16	17.15	14.86	8.02
Jun-16	17.56	15.25	8.05
Jul-16	19.31	15.72	8.08
Aug-16	19.67	16.07	8.08
Sep-16	20.00	16.39	8.08
Oct-16	20.37	17.10	8.12
Nov-16	20.42	17.15	8.14
Dec-16	20.30	17.04	8.17
Jan-17	19.22	16.60	8.21
Feb-17	19.39	16.75	8.24
Mar-17	19.50	16.86	8.28

Based on futures prices of April 18, 2016.

The Predicted All-Milk price and the predicted feed cost have been added to the table since the Fall 2014 issue of Dairy Update (see <http://dairy.ifas.ufl.edu/dairyupdate>). These predictions are based on the formulas in the 2014 Farm Bill. Daily updated Florida mailbox price predictions are found at [http://future.aae.wisc.edu/predicted\\_mailbox/?state=Florida](http://future.aae.wisc.edu/predicted_mailbox/?state=Florida) Feed costs are found at <http://future.aae.wisc.edu/tab/costs.html#94>. Contact Albert De Vries at [devries@ufl.edu](mailto:devries@ufl.edu) for more information.

#### Dairy Extension Agenda

- **May 4 - 6, 2016.** 65th Annual Florida **Beef Cattle Short Course**. Location: 2142 Shealy Drive, Gainesville, Florida. Info: [http://animal.ifas.ufl.edu/beef\\_extension/bcsc/2016/short.shtml](http://animal.ifas.ufl.edu/beef_extension/bcsc/2016/short.shtml)
- Thursday **May 26, 2016.** UF/UGA **Corn Silage & Forage Field Day**, Citra, Florida. This event takes place at the UF Plant Science Unit located at 2556 West Highway 318 in Citra, Florida. For more information, contact Jerry Wasdin, 352-538-1311 or [jwas@ufl.edu](mailto:jwas@ufl.edu). Sponsorships, free registrations, and program: [http://animal.ifas.ufl.edu/com\\_silage\\_forage\\_field\\_day\\_extension/](http://animal.ifas.ufl.edu/com_silage_forage_field_day_extension/)