UF IFAS
UNIVERSITY of FLORIDA
Department of Animal Sciences

Dairy Update

Quarterly Newsletter **Vol. 15 No. 1** **Winter 2015**

Four UF Undergrads Were "Dairy Challenged" At the Southern Regional

Mary Sowerby

Does being placed on a team of 4 or 5 students (each from a different southern university), then given feed rations, financial and DHI information, farm goals, etc., 2.5 hours to visit the farm and ask the owner questions, an afternoon to assemble a PowerPoint presentation on the farm's strengths and weaknesses (complete with recommendations for improvement), and 20 minutes for the team to make an oral presentation to a panel of five judges, sound like a challenge to you?

University of Florida Animal Sciences majors Jacquelyn Mariano from Orlando, Alexandra Lemus from Miami, Diana Roldan from Miami, and Caitlin Conway from Indiantown, all took that challenge November 16-18, 2014 in Salisbury, NC, at the 9th annual Southern Regional Intercollegiate Dairy Challenge hosted by North Carolina State University.

Sixty-three students from 15 universities across the Southeast participated in the 2014 Southern Regional Dairy Challenge. The universities included: Alabama A&M, Clemson, Florida, Georgia, Kentucky, Louisiana State, Mississippi State, Murray State, North Carolina A&M, North Carolina State, Tennessee, Tuskegee, Virginia Tech, Western Kentucky and West Virginia.

"Develop tomorrow's dairy leaders and enhance progress of the dairy industry, by providing education, communication, and networking among students, producers and agribusiness and university personnel," is the official mission statement for the North American Intercollegiate Dairy Challenge.

The students who competed at the Southern Regional Dairy Challenge learned to work with total strangers as teammates, fully analyze a dairy farm with those teammates, make an oral presentation before judges and exhibit sportsmanship as the judges discussed their presentations and awards were made.

Alexandra Lemus left the contest with a first place team award certificate and all four students from UF gained experience, new friends and industry networking with sponsors of the Dairy Challenge. Was it truly a challenge? Yes! But those four students (including two who had participated in 2013 also) felt the experience was beneficial to their future careers as veterinarians or wherever they land in the agricultural industry.

Learn more about Dairy Challenge at http://www.dairychallenge.org or contact Mary Sowerby at meso@ufl.edu

Caption: Representing UF at the 9th Southern Regional Dairy Challenge in Salisbury, NC, were (left to right): Dr. Mary Sowerby (coach), Jackie Mariano, Alexandra Lemus, Caitlin Conway, and Diana Roldan.

Larger Florida Dairy Farms Tend to Have Lower Bulk Tank Somatic Cell Counts

Fernanda C. Ferreira and Albert De Vries

Summers in the Southeast can be tough on cows. Heat stress reduces milk production and makes cows more susceptible to mastitis. The higher incidence of mastitis is seen in higher somatic cell counts (SCC). **Figure 1** shows how average SCC rises and milk production declines in the later summer in Florida. These seasonal trends cannot all be attributed to the direct effects of heat stress. We know that calving is somewhat seasonal on most farms with most of the calving happening in the fall and early winter. By the time the summer arrives, more cows are in the later stages of lactation and more cows are dry. Cows later in lactation generally produce less milk and milk with a higher SCC. Calving patterns therefore explains part of the drop in milk production and rise in SCC in the summer.

The opposite effects of a lower milk volume and higher SCC made us wonder what the average SCC of all pooled milk in Florida is (more about that in a later article). We also wondered if there was an association between herd size and SCC. We asked Southeast Milk, Inc., and Premier Milk, Inc., both milk marketing cooperatives, for the monthly volumes of milk shipped and average monthly bulk tank SCC of their Florida members in 2013. Both cooperatives sent us the data with the herd identifications removed. After removing some incomplete records, we had data from 100 farms in 2013, or about 77% of all licensed dairy herds in Florida.

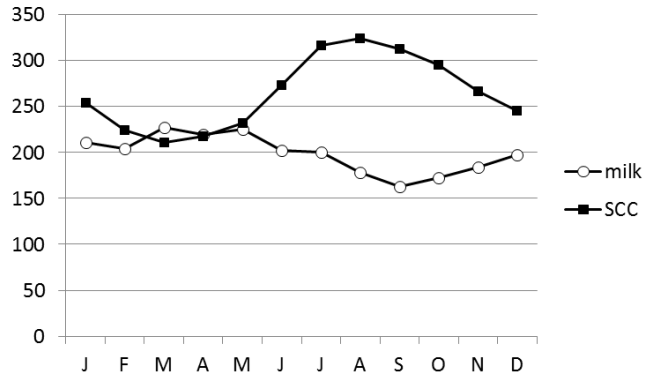


***Figure 1**. Total milk production and somatic cell counts of Florida farms in the 12 calendar months of 2013. The milk data is from USDA (in million pounds). The SCC data is from the Florida Marketing Area - Federal Order 6 (in thousand cells/ml).*

In **Figure 2** we show the relationship between annual amount of milk shipped and the annual average SCC for the 100 Florida farms. Not all farms are shown in figure 2 to prevent identification through milk volume. For each farm, the average SCC in figure 2 is the arithmetic average of the 12 monthly bulk tank SCC values that we received from the cooperatives. Figure 2 shows that farms that shipped lower volumes of milk tended to have a higher annual bulk tank SCC. The average SCC for all farms in figure 2 was 327,000 cells/ml. For the 79 farms that shipped less than 25 million pounds annually, the average SCC was 345,000 cells/ml. The average SCC for the 21 larger farms was 261,000 cells/ml. It is also clear from figure 2 that there are many smaller farms with lower SCC. Fourteen farms had an annual average SCC < 200,000 cells/ml and 79 farms had an annual average SCC < 400,000 cells/ml.

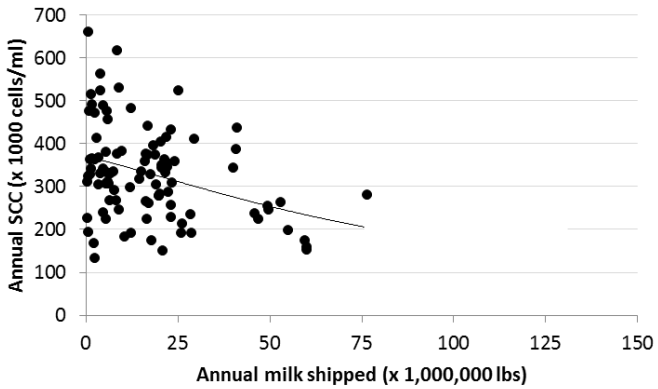


***Figure 2**. Average annual bulk tank SCC of 100 Florida dairy farms in 2013 (some large farms are not shown to prevent identification). The average annual bulk tank SCC is the average of 12 monthly values, not weighted by milk volume.*

We were also interested in the seasonality of the monthly bulk tank SCC data from the 100 Florida farms. The data showed that February, March, and April were generally the months with the lowest bulk tank SCC. We called this the cool period. August, September and October were generally the three months with the highest bulk tank SCC. We called these months the warm period. A measure of seasonality is the warm to cool ratio. We calculated the warm to cool ratio as the average SCC in the warm period divided by the average SCC in the cool period for each farm. For example, if the ratio = 2, then the average SCC in the warm period is twice as high as the average SCC in the cool period.

Figure 3 shows the seasonality of the bulk tank SCC for the 100 farms. We see that all but two farms had a warm to cool ratio > 1. That means that on 98 farms, the SCC in the warm period was greater than in the cool period. On 53 farms was the warm to cool ratio < 1.5. These farms had an average SCC of 312,000 cells/ml. The other 47 farms had an average SCC of 344,000 cells/ml.

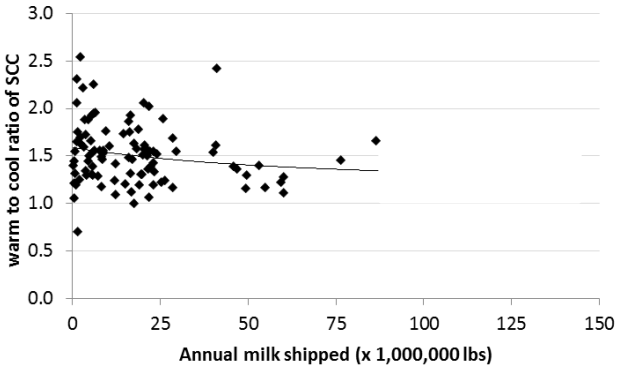


***Figure 3**. Seasonality of bulk tank SCC for 100 Florida dairy farms in 2013 (some large farms are not shown to prevent identification). Seasonality is expressed as the warm to cool ratio. This is calculated as the average SCC in the warm period (August, September, October) divided by the average SCC in the cool period (February, March, April) for each farm. A ratio of 2 means that the SCC in the warm period is twice as high as the SCC in the cool period.*

The data in figure 2 and 3 show that many Florida farms produced milk with a bulk tank SCC that would look good anywhere in the US. Their milk quality management practices might be studied and could be implemented on other farms. For some farms, producing milk with a low SCC seemed less of a priority. We also see an increase in the SCC in the summer months for almost all farms. To calculate the average SCC in all pooled milk on individual farms we need to know how seasonal their milk production is. We'll leave that topic for a future article. For more information, contact Albert De Vries at devries@ufl.edu

2015 Florida Dairy Production Conference

The 2015 Florida Dairy Production Conference is being planned for **Wednesday April 29.** Location will be Gainesville, Florida. More information is forthcoming. Contact Mary Sowerby at meso@ufl.edu or Jose Santos at jepsantos@ufl.edu

FLORIDA DAIRY PRODUCTION CONFERENCE

Dutch Dairy Farms Getting Ready for End of Milk Quota in April 2015

Albert De Vries

I am currently on Professional Development Leave (also known as a sabbatical) with the Business Economics Group at Wageningen University in the Netherlands. This offers a good opportunity to look at dairy farming in this country. The text below is inspired by the Dutch agricultural popular press.

The Netherlands is prosperous country in Western Europe home to 17 million people. The Dutch live on just over 16,000 square miles. With 1,054 people per square mile it is one of the most densely populated countries on earth. In comparison, Florida has about 353 people per square mile. Holland is the name of the historically most influential western part of the country where cities like Amsterdam, Rotterdam, and The Hague are located. Today, North Holland and South Holland are just two of the 12 provinces. Friesland, the ancestral home of the Holstein-Friesian dairy cow, is another province.

The Netherlands has a moderate maritime climate, with cool summers and mild winters, and typically high humidity. Average low is 33 degrees in January and the average high is 73 degrees in July. Rainfall is about 33 inches per year and is distributed relatively equally across the months. The clay and sandy soils are fertile which make grass growth during the spring, summer and fall abundant. No wonder dairy farming has always been part of agriculture here.

Today dairy farming is big business in the Netherlands. The country is home to 17,800 dairy farms, 1.55 million dairy cows and 0.28 million dairy goats. They are housed on farms that occupy 4,633 square miles of grassland and maize (28% of the surface area of the Netherlands). The cows produce 2.7 billion pounds of milk in a year, which is processed by 22 milk processing companies in 51 dairy factories. Dairying provides 60,000 jobs in production, processing, wholesale and retail. In 2013, 66% of Dutch milk was made into cheese and 65% of Dutch milk production was sold abroad, where the EU was the most important market.

The most common breed is the Holstein, which today has a large dose of US genetics. Average production in 2014 was about 18,500 lbs/cow with 4.4% fat and 3.5% protein. The reason for the lower volume but higher components is the milk payment system that for decades penalized milk volume and rewarded components. The Dutch breeding program adapted to this pricing scheme.

Typically, cows are milked 2X where cows are milked within a few hours in the morning and a few hours in the evening. About 2,000 Dutch farms have adopted automatic milking systems (robots). Cows are housed indoors in free stalls from about November through April when grass growth has slowed down and it gets colder outside. From April to October, most cows are spending at least part of the day grazing and will consume a large part of their dry matter from grass. They may be housed indoors at night.

Currently about 30% of the cows are always housed indoors without access to grazing, mostly on the larger farms that strive for a higher milk production and more management control. The number of cows that stay indoors only is increasing and was 10% in 2001. The general public, however, is of the opinion that cows should be outside grazing, at least when it is not winter. Part of this desire is cultural because most people are familiar with seeing cows outside in the summer. Another part is a strong public opinion about animal welfare and the belief that cows that graze live more in their natural habitat than cows that have to stay indoors all the time. Several larger milk processing cooperatives therefore give premiums of about $0.50/cwt milk to farmers that graze their cows. Their goal is to secure a license to produce and market milk “from cows that graze”.

Dutch dairy farms are preparing for the abolishment of the milk quotas in the European Union on April 1, 2015. Milk quotas have been in place since 1984. Because the EU policies stimulated milk production until that time, more milk was produced than could be consumed. Export subsidies became too expensive. The implementation of milk quota limited the growth of milk production and the cost of the EU dairy program. Based on their historical milk production, dairy farms were assigned a penalty free milk quota in 1984. EU legislation has increased the milk quotas several times to keep up with demand. Milk quotas also have been freely tradable and could be leased between farms. Virtually all dairy farms fill their milk quota annually. Surplus milk is penalized such that it is not profitable.

The abolishment of the milk quotas is expected to results in a slow and modest growth of Dutch milk production. The low milk price forecasts for 2015 will not immediately encourage an increase in milk production anyway, even if farms could. The main limiting factor, however, is the strict environmental legislation that is primarily based on phosphorus and increasingly also on nitrogen. Most farms are already limited by their farm's environmental constraints.

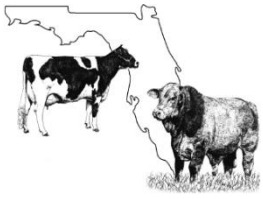
Recently a new law was passed that allows dairy farms to expand only when they have room to produce more manure within their farm's environmental plans, or when they process the extra manure. Processing entails that the extra phosphorus is eventually exported outside of the Netherlands. One example of how to do this is through the use of bio-digesters and the production of phosphorus rich pellets that can be easily and affordably shipped long distance. This process is still expensive and margins are currently not large enough to make it profitable for many farmers to have their excess manure treated.

Future legislation this year will likely also make a dairy farm's herd expansion conditional on the availability of enough land on the farm. This request for further legislation comes directly from farmer organizations which are keen to preserve the social license to produce milk and want to limit the intensification of the dairy sector.

My reading of all this is that dairying will remain strong in the Netherlands in the foreseeable future. The climate is favorable and the dairy sector is innovative, forced through high labor cost and strict environmental legislation. Dutch dairy farmers are optimistic about the end of the milk quota in April 2015. Contact Albert De Vries at devries@ufl.edu

Proceedings 2015 Florida Ruminant Nutrition Symposium

The proceedings of the successful 2015 Florida Ruminant Nutrition Symposium are now available at http://dairy.ifas.ufl.edu/rns



Prediction of the Future Florida Mailbox Price and Future All Milk and Feed Prices: February 2015 - January 2016

Month	Predicted FL mailbox price ($/cwt milk)	2014 Farm bill formulas	
		Predicted All-Milk price ($/cwt milk)	Predicted feed cost ($/cwt milk)
Feb-15	19.72	17.16	8.56
Mar-15	20.09	17.48	8.44
Apr-15	19.64	17.21	8.45
May-15	19.71	17.27	8.46
Jun-15	20.09	17.64	8.48
Jul-15	21.79	18.08	8.51
Aug-15	22.00	18.31	8.54
Sep-15	22.05	18.36	8.56
Oct-15	22.27	19.02	8.58
Nov-15	22.16	18.89	8.61
Dec-15	22.01	18.72	8.64
Jan-16	21.15	18.45	8.68

Based on futures prices as of February 6, 2015.

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 Feed cost are found at http://future.aae.wisc.edu/tab/costs.html#94. Contact Albert De Vries at devries@ufl.edu

Dairy Extension Agenda

- Wednesday **April 29**, 2015. 51st Florida Dairy Production Conference. More information is forthcoming.

Sign up for **UFL-DAIRYUPDATE-L**: 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

Dairy Update is published quarterly by the Department of Animal Sciences, Institute of Food and Agricultural Sciences, University of Florida. Please address any comments to Albert De Vries, Editor, Dairy Update, PO Box 110910, Gainesville, FL 32611-0910. Phone: (352) 392-5594 ext. 227. E-mail: devries@ufl.edu. Past issues are posted on the UF/IFAS Florida Dairy Extension website at http://dairy.ifas.ufl.edu. This issue was published on **February 10, 2015.**