UF IFAS UNIVERSITY of FLORIDA
Department of Animal Sciences

Dairy Update

Quarterly Newsletter **Summer 2025**

In this Issue

Dairy Extension Agenda

- 59th Annual Florida Dairy Conference, a Road Show in 2025. Locations: Okeechobee (FL) on November 12 and Tifton (GA) on November 13. Agenda to follow. https://animal.ifas.ufl.edu/dairy/conferences--meetings/florida-dairy-production-conference/

Save The Date

59th Annual Florida Dairy Production Conference

Road Show

FLORIDA DAIRY PRODUCTION CONFERENCE

Wednesday, November 12th, 2025-Okeechobee, FL

Thursday, November 13th, 2025- Tifton, GA

University of Florida Slick Holsteins Head to Pakistan

Peter J Hansen

For the first time, the University of Florida Dairy Unit exported live cattle overseas. In May of this year, three pregnant slick Holstein females were delivered by air and truck to DayZee Farms in Bahawalpur, Punjab, Pakistan. A major focus of the company is to use cutting-edge embryo technologies and genomic sequencing to improve cattle for milk and beef production.

Slick-Gator Elizabeth at her new home in Pakistan

The slick mutation is a naturally occurring mutation that causes short hair in cattle and increased resistance to heat stress. The phenotype was first discovered by Tim Olson of the University of Florida and dairy cattle with the mutation have been selected for genetic improvement at the university since the 1980s. Semen from bulls produced at UF has been distributed globally since 2006.

Summer temperatures in Pakistan can reach 120°F or more and incorporation of the slick gene into dairy cattle should reduce the negative effects of heat stress on milk yield and reproduction. According to Dr. Masroor Sagheer, Director of Animal Reproduction at DayZee, who oversees the IVF program, “As Pakistan’s summer temperatures rise and heat waves intensify, keeping dairy cows cool is crucial. By choosing slick Holsteins, farmers can boost milk yields, cut down veterinary bills and make our dairy industry stronger against rising temperatures”.

The three registered Holstein females from UF all arrived safely in Pakistan. Exportation was handled by Strickland Exports of Myakka City, Florida. Reneé Strickland, who organized the movement of the cattle, stated that “I don't think these heifers could have gone to a better farm in Pakistan. They really seem to be putting their best foot forward and it's truly a country that is crazy about their milk! “

Strickland has long been interested in slick-haired cattle: “I've been waiting for years to be able to ship some of the genetics from UF because as we all know at this point with climate change.....the only way we will be able to keep people fed is through research and development of ag technology. The slick haired gene cow (whether it be dairy or beef) combined with embryo flushing and insemination and transfer will hasten the production of more animals that can tolerate & survive and thrive in hotter climates and already needed in most parts of the Middle East and Africa, tropical Asia, Central & South America”.

For more information about slick Holsteins, contact Pete Hansen, pjhansen@ufl.edu

The popular *Family Day at the Dairy Farm*, an open house of the UF Dairy Unit for the public, is likely to resume in early 2026. No date has been set yet.

The UF Dairy Unit Hosted International Dairy Producers from Mexico and South America

Izabella Toledo

On July 24th, in collaboration with Dr. John Bernard from the University of Georgia, the UF Dairy Unit hosted international producers during an afternoon filled with shared knowledge, focused especially on research projects associated with heat stress abatement.

During the visit, guided by Dr. Izabella Toledo, the international producers toured the Dairy Unit facilities, including the barns and the milking parlor, and learned about the farm management, the research projects performed at the UF Dairy Unit and how research findings have helped dairy producers all over the world. The producers also had the opportunity to visit with Dr. Albert De Vries and watch a presentation given by Dr. Izabella Toledo on the use of “smart technologies” to cool dairy cows.

The UF Dairy Unit has a long tradition of welcoming visitors and is proud to share their dairy research program, which is one of the largest in the country.

For more information about visiting the UF Dairy Unit, contact Izabella Toledo, izatol@ufl.edu

Dairy producers from Mexico and South America visiting the UF Dairy Unit in July

UF Dairy Tours

Izabella Toledo

During the summer of 2025, students from first grade to high school from various organizations chose to visit the University of Florida Dairy Unit (Hague, FL) as one of their summer camp activities!

While at the dairy, students and their chaperones had the chance to assimilate what it takes to get milk from farm to table. During the tours, hosted by the UF Department of Animal Sciences faculty members, visitors walked through the barns, learned where and how cows are housed, what they eat, and watched cows being milked in the milking parlor.

These farm visits are complementary to the UF Dairy Family Day at the Dairy Farm event, which is held in early Spring (weather permitting) and brings a large crowd of people interested in learning more about dairy farming and UF dairy research projects.

For more information about visiting the UF Dairy Unit, contact Izabella Toledo, izatol@ufl.edu

Students with a tour guide observing dairy cows in a barn at the UF Dairy Unit

Should I Wait and Buy the Same Sire a Year Later at a Lower Semen Price?

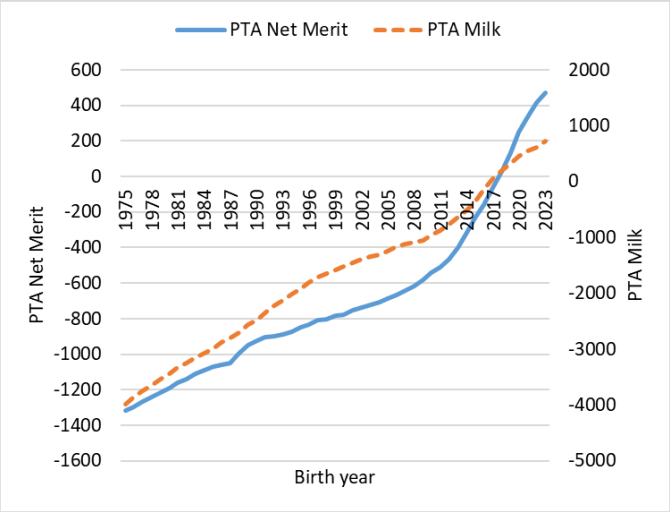
Albert De Vries

Semen from top sires is often more expensive than semen from sires of lower genetic merit. Official sire evaluations are conducted by the Council on Dairy Cattle Breeding (CDCB) three times per year, in April, August, and December. Every evaluation leads to some reshuffling of sires and younger sires replacing older sires on the top. Sires that were in the top a year ago are likely ranking lower a year later. After several evaluations, a sire's semen price will likely drop, but the genetic merit he transmits has not changed. It may be tempting to wait to buy that good sire for a lower price than you pay today. Is that a sound economic decision?

The principles that help answer this question are relatively simple. The most important principle is opportunity cost. The top-ranking bulls get better every year. Let's take the USDA/CDCB Net Merit dollars economic selection index (NM$). The NM$ index is defined as the expected lifetime profit as compared with the breed base cows born in 2020. The NM$ index is a combination of 17 economically important traits, including milk, fat, protein, productive life, daughter pregnancy rate, and residual feed intake, and their marginal economic values. The latest revision was in April 2025. The NM$ index expects that the average cow remains in the herd for 2.7 lactations, or approximately 3 years after first calving. For example, a daughter out of a sire with a predicted transmitting ability (PTA) of NM$ of $1200 is expected to be $100 more profitable in her lifetime than when her sire has a PTA of NM$ of $1100. This is about $33 per cow per year, if we assume most of the genetic differences are expressed when animals are cows and not when they are still heifers.

Genetics companies make better sires all the time, which leads to an increase of the average PTA of NM$ of sires (and cows) every year, see the

figure. Especially after around 2012 has the annual PTA of NM$ increased much faster than before, due to genomic testing and selection. The average increase in PTA of NM$ for sires born between 2017 and 2023 was approximately $80 per year. That means that if we keep buying semen from the top available sires, a heifer born out of a sire that is $80 better is expected to be $80/3 = $27 more profitable per year after first calving.



The PTA of Net Merit and PTA of Milk of Holstein sires with birth years from 1975 to 2023, as calculated by the April 2025 genetic evaluation. Source: https://webconnect.uscdcb.com/#/summary-stats/genetic-trend

What does this mean for semen purchases? It means that waiting a year to purchase a good sire at a lower price has an $80 genetic merit opportunity cost. This is money not made because foregoing a good opportunity. Let's complete the math to a break-even semen price drop that is required to make up for the opportunity cost. The assumption is that the genetic merit differences only have value if a dairy heifer calf is born and becomes a cow. Other assumptions, in yellow, are in the table:

Given 1 sexed semen insemination, we multiply the following risk factors: a 45% conception rate at first preg check, 94% probability that the pregnancy results in a calving, 97% probability the calf survives the first day, 92% the calf is a dairy heifer calf, and 85% heifer survival to first calving. This means that the probability the sexed semen insemination results in a dairy heifer calving about 2 years and 9 months later is 0.32. It takes 1/0.32 = 3.12 such inseminations to get the genetic merit to express itself in one daughter that comes a dairy cow. Although the opportunity cost is $80, it takes on average 4.25 years from the moment of insemination to when the genetic merit expresses itself (9 months of gestation + 24 months age at first calving + 18 months after first calving).

We should discount this time of waiting for the genetic merit to generate additional net revenue back to the moment of insemination. At an 8% annual interest rate, that means that one dollar 4.25 years later is worth $0.721 in today's dollars. Therefore, the $80 is worth only $57.68 in today's dollars because the PTA of NM$ is not discounted. Given 3.12 inseminations are required, the $57.68/3.12 = $18.51 is the break-even semen price discount per unit to make it worth to wait one year to purchase the same sire. For example, if the semen price is $40 today, the semen price would need to drop to $40 - $18.51 = $21.49 or lower a year from now, for waiting on this sire to be worth it. If you don't expect the price to drop this much, you would be better off buying and using this sire now and pay the $40 semen price.

For more information, contact Albert De Vries at devries@ufl.edu

1		sexed semen insemination
0.450	45%	conception rate
0.423	94%	survival from conception to calving
0.410	97%	calf survival at birth
0.377	92%	sexed semen purity
0.321	85%	heifer survival
3.117		inseminations needed per dairy heifer calving
$80		genetic merit opportunity cost per year
	8%	annual interest rate
	4.25	years to average expression of genetic merit
$57.68	0.721	discount factor
$18.51	minimium semen price drop required to wait 1 year	
$40	semen price today	
$21.49	break-even semen price 1 year from today	

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Controlling Mastitis and Improving Milk Quality in Organic Dairy Farms

Carlos NinoDeGuzman and Albert De Vries

As part of a multi-state USDA Organic Research and Extension Initiative grant, Carlos NinoDeGuzman, a PhD student in the Animal Sciences department working with Dr. Albert De Vries, is conducting visits to organic dairy farms across the US to identify risk factors associated with mastitis incidence and milk quality. These visits are conducted by teams of experienced students from several universities.

During these farm visits, a full milking parlor evaluation is performed. This includes a pulsator, claw vacuum, and milking time test using vacuum diagnostics devices (VaDia, Biocontrol, Norway). Also, scoring forms are used to characterize teat end cleanliness, teat end damage, pre- and post-dipping usage, unit alignment, udder cleanliness, and parlor efficiency. After the visits, an evaluation report is prepared and discussed with the dairy producer.

The goal of this research project is to identify management practices employed by organic dairy farms with low mastitis incidence and high milk quality, and to share these best practices with farms that are experiencing challenges in these areas. In addition to the farm visit and parlor evaluation, a questionnaire is used to acquire data related to clinical and subclinical mastitis management, the dairy producer's attitudes and perceptions related to mastitis, and housing and bedding management.

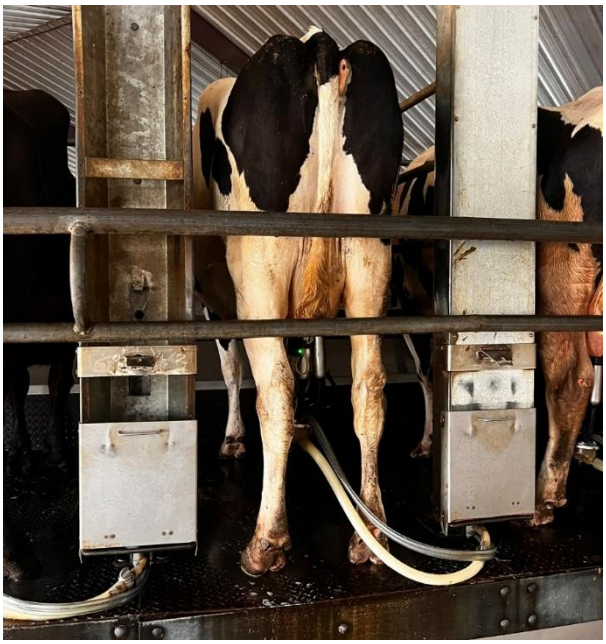
The questionnaire includes an economic information collection part. These costs and prices related to mastitis management will help us develop a mastitis index, which will include the costs associated with clinical and subclinical mastitis (the so-called failure cost), but also the expenditures to prevent mastitis and lower milk quality to occur in the first place (the so-called preventive costs). Together, these costs give us an estimate of the total mastitis burden on the farm, which is useful to design the economically best mastitis management program for that farm.

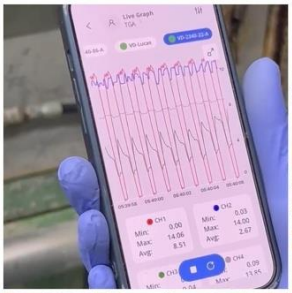
Carlos and team members have already evaluated over 50 organic dairy farms across the US. It is interesting to see the different management practices farmers have according to herd size and geographic location. Their ideology, attitudes, and perceptions related to mastitis are also very influential on their management practices. Additionally, it is exciting to find that there are many opportunities to focus on controlling mastitis and improving milk quality.

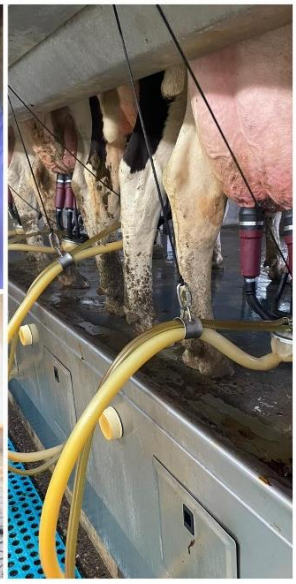
Farm visits and parlor evaluations are available at **no cost** to **organic dairy farmers** in the Southeast because of the grant funding received from USDA. We hope to make our experiences, tools and parlor evaluations available to **conventional dairy farms** in the Southeast as well, depending on securing additional funding.

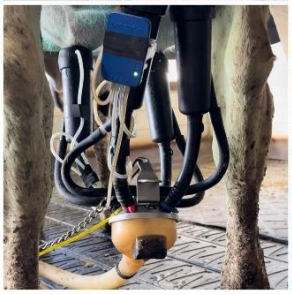
If you are interested in participating or to learn more, contact Carlos NinoDeGuzman at ninodeguz.carlos@ufl.edu

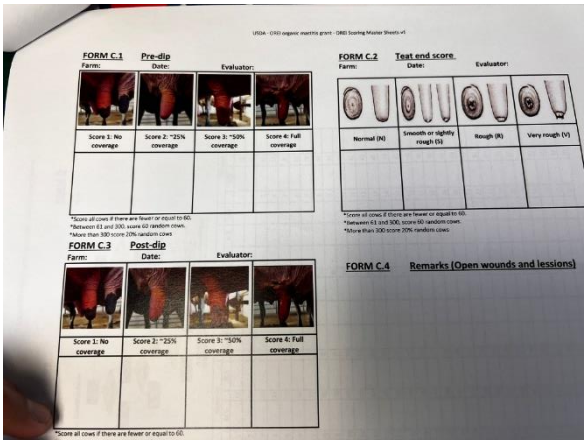
Carlos NinoDeGuzman conducting parlor evaluations.

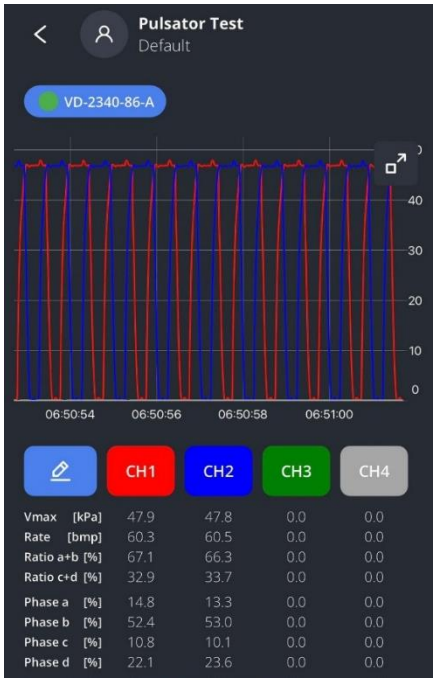












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