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# The Green Liner File

*Promoting healthy dairy products and practices.*

## Does Liner Design Really Matter?

With all of the things there are to manage on a dairy, how can a small detail like a liner make such a big difference? There are so many choices out there; can there even be a real difference between them? Does liner design really matter?

We are continually amazed at how often we are asked questions like these. Everywhere we go it seems dairymen have lowered their expectations of how a liner should perform. Many times it is because they have tried several different liners and couldn't tell the difference between them or never got the promised results. Other times, their vet, consultant, supply guy or someone else they trust has told them that there is really nothing better out there than what they are doing right now. For most of the industry, this is just not true.

When we look at the design of the Lauren Liner, it comes down to three aspects; the material, the barrel and the system. Lauren Liners use silicone because it is gentle on teats, easy to clean and does not degrade in the cleaning cycle like organic rubber.

The Tri-Circle® barrel is designed to close on the entire teat, not just the last half inch. When it closes, the barrel absorbs energy differently than conventional liners which reduces the amount of pressure applied to the teat end. The material and barrel design of the Lauren Liner allows the vacuum and pulsation settings of the milking system to work more for the dairyman without doing the damage to the cow typically seen with conventional liners. The combination of these aspects is what makes the fast milking green liners the standard for combining milking performance and teat health.

Here at Lauren AgriSystems, we do our best to know more than just a little bit about our products and how they perform. Using Lauren Dairy as a research arm, we have gone to great lengths to test our products and perform high quality research. The National Teat Health Database (NTHDB) now holds teat scores representing almost 200,000 cows from all over the United States and Canada. The before and after cases documented on the NTHDB show that a seemingly small detail like liner design can

make a real difference on a dairy.

Our success has come because we constantly pursue one thing to help guide our efforts...the truth. Making a good evaluation of performance for any product is never easy on a dairy. What we have learned about success and failure over the past five years will be a building block for our future success. In this issue you will find our study on teat tissue change and the release of ParlorPro™, a handheld parlor software designed to take the mystery out of teat health evaluation and be a building block of success for the dairymen.

Sincerely,

President, Lauren AgriSystems

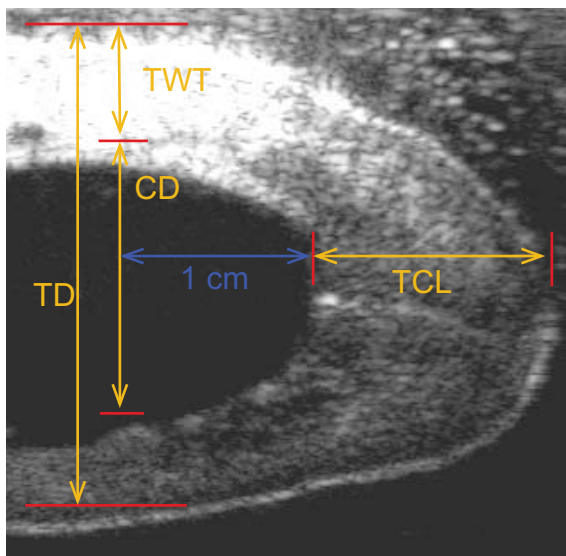


## Liners and Teat Tissue Changes

Over the past few years Lauren AgriSystems has spent a lot of time communicating its message: “Liner Design Matters.” We have spent countless hours involved in high level research and consulting with some of the finest people in the dairy industry. We have continually shown that the Lauren Liner is designed to milk at an increased peak flow vacuum when compared with conventional liners. One of our most recent projects involved ultrasounding teats as a method to detect changes in tissue thicknesses based on variables seen at milking. The project’s variables were a Lauren Tri-Circle® Silicone Liner milked in its recommended peak flow vacuum range (11.5-13.5) and a conventional round barreled liner milked in its recommended peak flow vacuum range (10.5-12.0).

Measurements were taken before milking ( $T_{-1}$ ), immediately after milking ( $T_0$ ), two hours after milking ( $T_2$ ), and four hours after milking ( $T_4$ ). The characteristics measured (see Figure 1) were Teat Canal Length (TCL), Teat Diameter (TD), Teat Wall Thickness (TWT), and Cistern Diameter (CD). A hand carried ultrasound system was used to gather the measurements. The left front and right rear teat were measured on the same six cows throughout the experiment. Measurements for each variable (Tri-Circle® and conventional) were repeated twice, which resulted in twelve observations of each measurement parameter to be used for comparison at each time of measurement for the front and rear teat. The measurements were taken after three consecutive milkings at each milking variable. The transducer was placed in the same general position in relation to the teat and the same person made each measurement. To achieve the targeted peak flow vacuum, the system vacuum was set to 14.4 “Hg for the Tri-Circle® and 12.5 “Hg for the conventional liner.

Figure 1:



A reliability test of the measurements was conducted prior to the study. Each position (TCL, TD, TWT, and CD) was measured and duplicated 30 times on six cows. The mean difference of the measurements was 0.87% for TCL, 0.83% for TD, 2.67% for CD, and 0.34% for TWT. These low percentages suggest the method equipment is consistent and has little variance between the means.

Analysis of the measurements indicates there is no difference in tissue changes between the two liners and their milking conditions. A t-Test was used to determine significance for each measurement taken (TCL, TD, TWT, and CD) all resulting in p-values > .1. The data suggests an equal change was seen between variables immediately after milking. It also shows the rate of recovery ( $T_2$  and  $T_4$ ) is equal between the two liners. Figure 2 shows the change in millimeters (mm) for each of the measurements collected. The data listed here was calculated by taking the measurement before milking ( $T_{-1}$ ) and subtracting it from the current measurement.

Figure 2: Tissue Changes (mm) for Left Front and Right Rear Teats Milked with Tri-Circle® and Conventional Liners.

	Left Front Teats					
	Tri-Circle®			Conventional		
	Post ( $t_0$ )	2hr ( $t_2$ )	4hr ( $t_4$ )	Post ( $t_0$ )	2hr ( $t_2$ )	4hr ( $t_4$ )
<b>TCL</b>	1.31	1.17	0.60	1.36	1.01	0.68
<b>TD</b>	-2.50	-0.66	-0.07	-2.20	-0.92	-0.13
<b>CD</b>	-6.58	-2.43	-1.16	-6.02	-2.64	-1.68
<b>TWT</b>	1.92	1.00	0.49	1.96	0.67	0.86

	Right Rear Teats					
	Tri-Circle®			Conventional		
	Post ( $t_0$ )	2hr ( $t_2$ )	4hr ( $t_4$ )	Post ( $t_0$ )	2hr ( $t_2$ )	4hr ( $t_4$ )
<b>TCL</b>	1.65	1.27	1.43	0.90	0.91	0.93
<b>TD</b>	-1.73	-0.79	-0.47	-1.85	-1.27	-0.86
<b>CD</b>	-4.43	-2.28	-1.64	-4.73	-2.87	-2.66
<b>TWT</b>	1.48	0.60	0.67	1.52	1.08	1.05

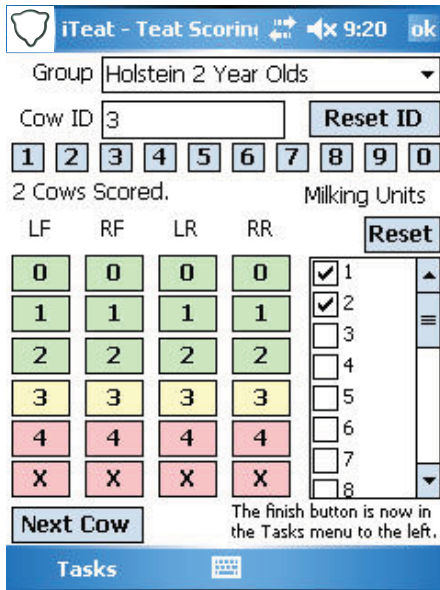
The data presented in Figure 2 shows an obvious change in measurements from pre-milking ( $T_{-1}$ ) to post-milking ( $T_0$ ). This is easily predicted based on visual inspection of teats over the same time. The interesting point here is that the Tri-Circle® liner and the conventional liner have the same effect on the teat parameters measured even when milked at different vacuum levels. While we know the stories about vacuum and congestion will continue, we also know that the facts presented in this study support our position that “Liner Design Matters.”



## ParlorPro™ scores its debut!

When Lauren AgriSystems decided to launch the National Teat Health Database (NTHDB) 15 months ago, the intent was to provide the dairy industry with a resource to track and compare teat end health. Since then the acceptance of the NTHDB has been tremendous. As the number of cows represented in the NTHDB continues to grow, it is clear that the industry professionals interested in teat health have found a useful resource.

Building on the success of the NTHDB, Lauren AgriSystems began developing a series of handheld applications to be used for data collection and management geared towards parlor improvement. The system, ParlorPro™, has been released along with its first of several innovative programs.



*iTeat*, the first program, will allow the user to collect teat scores in the parlor and then upload the scores directly to NTHDB as soon as an internet connection is established. This program will eliminate hours previously spent transferring scores from paper to the computer. Another major benefit is the ability to access real time results while scoring. Dairymen can now have their results in minutes instead of days. This really is where current technology and traditional dairying have met for the betterment of the industry.

In addition, new programs to track squawks, prep procedures and other programs are being developed and can be updated to the ParlorPro™ automatically; accessories for the handheld are also available.

For more information on ParlorPro™ or ParlorPro™ accessories, please contact Lauren AgriSystems at 330-339-3373.



- Easy To Use
- Paperless
- Instantaneous Results
- Quick Reporting
- Adherence to Industry Standards



## Dairy Spotlight: Dykshorn Dairy Ireton, Iowa - 430 Milk cows - Double 20 Herringbone

“One of the best changes I ever made,” said Paul Dykshorn in referring to his experience with the Lauren Liner and what he would tell another dairymen. Located in the very northwest part of Iowa, Dykshorn Dairy is excited about the changes they have seen. They switched to the Lauren Liner from a round barreled organic rubber liner, because they were looking to improve teat end health and reduce squawks. “Squawks are almost a thing of the past and teats no longer turn red, even on manual.” Working with their Lauren AgriSystems’ dealer; Sioux Dairy Equipment, they installed the Lauren Liners, changed the vacuum level from 13.4 to 14.2 and adjusted pulsation from 62/38 to 66/34. “Cows are calmer in the parlor with less dancing, clinical mastitis cases are down, SCC has been consistently



lower and milking time decreased by 1/2 hour per shift.” After two months on the Lauren Liner they had their level 4 teat scores decreased 83%, from 15.8% to 2.8 %, when compared to a teat score done with their previous liner. Overall their scores went from 37% 1’s & 2’s to 81% 1’s & 2’s, and their 3’s & 4’s dropped from 63% to 19%, no wonder there is excitement about the change!



## Upcoming Show Schedule and New Dealers:

### 2008 Hoof Health Conference

July 17-19, Red Deer, Alberta, Canada

[www.hooftrimmers.org](http://www.hooftrimmers.org)

### Empire Farm Days

August 5-7, Seneca Falls, NY

Booth 476B

[www.empirefarmdays.com](http://www.empirefarmdays.com)

### American Assoc. of Bovine Practitioners

September 25-27, Charlotte, NC

Booth #1626, & Poster Presentation

[www.aabp.org](http://www.aabp.org)

### World Dairy Expo

September 30 - October 4, Madison, WI

Exhibition Hall - Booth 1501, 1502, 1503

[www.worlddairyexpo.com](http://www.worlddairyexpo.com)

### New Additions:

*We would like to welcome eight new dealers to the ever growing Lauren AgriSystems family:*

#### Excel Dairy Service

Mount Vernon, Washington

360-848-9494

#### Dairyland Agro Supply

Saskatoon, SK, Canada

306-242-5850

#### Professional Dairy Services

Wadena, Minnesota

320-468-2494

#### Wormuth Dairy & Refrigeration

Morrisville, New York

315-684-9152

#### Lethbridge Dairy Mart

Lethbridge, AB, Canada

403-329-6234

#### Midwest Farm & Dairy Supply

Hutchinson, Kansas

620-663-7221

#### Dairy Specialists

Evans, Colorado

970-330-1870

#### Gardinier Dairy Supply

Little Falls, New York

315-823-0150

*We look forward to continued success with the help of our new dealers!*

