

# Minnesota DHIA News

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## DHIA Scholarship Application Now Available

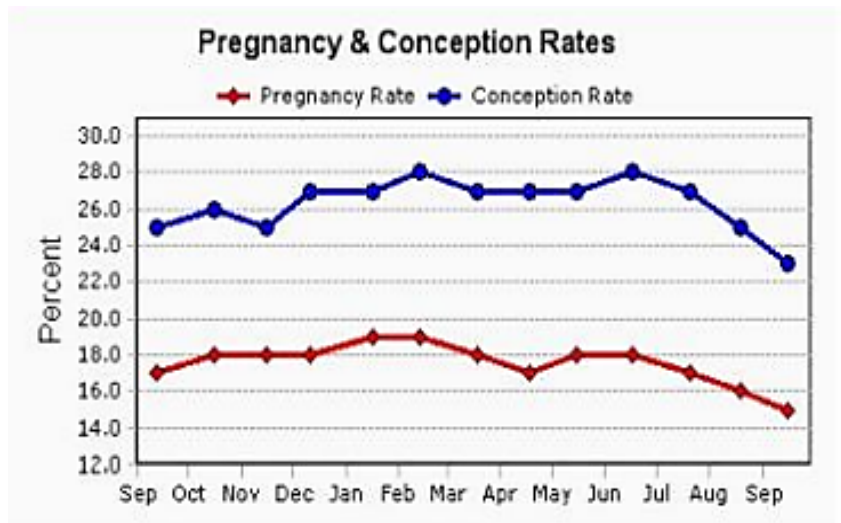
Applications are due by **October 31, 2022**

The application and guidelines are available by visiting [mndhia.org](http://mndhia.org)

## Check Out Herd Evaluator

What's your herd's status? This month's free report, Herd Evaluator, provides a summary of your herd's performance. This report shows your current test day, previous test day and your test day a year ago so you can compare 5 key areas, including milk yield, milk quality, turnover, reproduction, and herd inventory. Each of these categories includes a colorful graph of your progress over the last twelve tests on the left side of the page. This is especially useful for pointing out the seasonality in some numbers (such as pregnancy rates and somatic cell counts, both of which tend to get worse in warmer months).

The Herd Evaluator not only compares your current test to previous tests, but also allows you to evaluate how your herd measures to the top 25% of herds and other herds in Minnesota.



**This graph of the last twelve months shows us that over the last year this herd's pregnancy and conception rate were staying level or gradually increasing, but in recent months declining.**



## Happy National Ice Cream Month

Don't forget to celebrate National Ice cream Day on July 17th

## University of Minnesota Unselected Holsteins Used to Fight Mastitis

The contemporary Holstein (CH) produces more milk than her ancestors but selection for greater milk yield is associated with increased mastitis. The University of Minnesota has maintained unselected Holsteins (UH) since 1964 when Dr. Charles Young initiated a study to assess the impact selection for increased milk on cow performance. These unique UH cows provide the opportunity to compare UH and CH cows to evaluate the impacts of more than 50 years of selective breeding in the U.S. As expected, these comparisons agree with historical trends for greater milk yield and a greater incidence of health disorders, including mastitis, in the CH cow.

University of Minnesota faculty and their USDA colleagues at the Animal Genomics and Improvement Laboratory in Beltsville, MD and the National Animal Disease Center in Ames, IA are using the UH vs. CH experimental model to improve resistance of the CH cow to mastitis. The premise for this work is that the previous 50 years of selective breeding has inadvertently decreased the prevalence of specific genetic polymorphisms (nucleotide sequences) that support strong immune function and resistance to mastitis. Indeed, genome sequencing has identified substantial differences between the nucleotide sequences of these UH and CH genotypes. This includes a greatly reduced genomic diversity among the CH cows and multiple differences in regions of the genome that contain genes associated with immune function.

The general approach used by these scientists is to 1) stimulate the immune system of UH and CH cows, 2) determine differences in how the UH and CH cows respond to the stimulation, and 3) identify genomic differences between the UH and CH cows that are associated with these differential responses. They have demonstrated that stimulation of the immune system results in greater release of immune signaling molecules (cytokines) in UH than in CH cows. They have also demonstrated that this greater cytokine signaling occurs when the cow is stimulated (*in-vivo* studies) and when blood from the cow is stimulated in a test tube (*ex-vivo* studies). Their recent intramammary challenge study demonstrated that UH cows mounted a much more effective intramammary defense than CH cows against intramammary *Escherichia coli*, a bacterial species that frequently causes mastitis in dairy cows. Their continued work includes further examination of mastitis caused by *E. coli* and by other bacteria (including *Staphylococcus aureus* and *Streptococcus uberis*) frequently found to be the cause of mastitis in dairy cows.

Identification of genetic factors associated with enhanced immune functions will contribute to efforts to increase resistance of the CH cow to mastitis. In addition to gaining a better understanding of the biology involved with mastitis resistance, these efforts are expected to identify genomic markers and specific genes associated with resistance to mastitis. These components could be used in marker assisted selection efforts to produce CH cows with greater resistance to mastitis by increasing the prevalence of genetic polymorphisms that support strong immune function.

This work is supported in part by grants from the Rapid Agricultural Response Fund program of the Minnesota State Legislature and Minnesota Agricultural Experiment Station and the Office of the Vice President for Research, University of Minnesota.

### References

Lippolis, J. D., E. J. Putz, T. A. Reinhardt, E. Casas, W. J. Weber and B. A. Crooker. 2022. Effect of Holstein genotype on immune response to an intramammary *Escherichia. coli* challenge. J. Dairy Sci. <https://doi.org/10.3168/jds.2021-21166>

Ma, L., T. S. Sonstegard, J. B. Cole, C. P. VanTassell, G. R. Wiggans, B. A. Crooker, C. Tan,

D. Prakapenka, G. E. Liu and Y. Da. 2019. Genome changes due to artificial selection in U.S. Holstein cattle. BMC Genomics 20:128. <https://doi.org/10.1186/s12864-019-5459-x>

Young, C. W. 1977. Review of Regional Project NC-2. J. Dairy Sci. 60:493-498. [https://doi.org/10.3168/jds.S0022-0302\(77\)83892-7](https://doi.org/10.3168/jds.S0022-0302(77)83892-7)

**\*\*Article submitted by Brian Crooker, University Of Minnesota**

# What is this new test?

## New Tool in Milk Production and Herd Health!

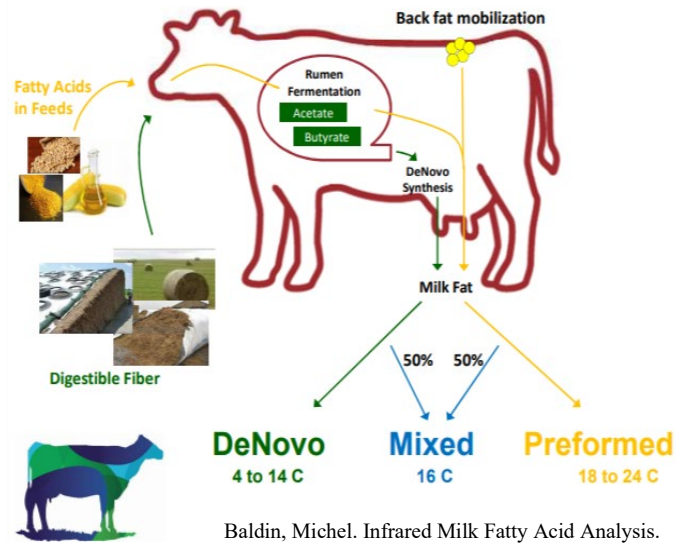
**Fatty acid analysis**, which looks at DeNovo, Mixed, and Preformed Fatty Acids in bulk tank milk, is now available at Minnesota DHIA labs. Gain components without losing production, sounds like a win-win situation.

**Consult your Nutritionist!**

### Background:

For bulk tank milks, the interpretation of the data helps understand how well the herd (or subgroups within the herd) are digesting forage and producing DeNovo fatty acids. The preformed fatty acids give insight into how the cows are doing with respect to body fat reserve and mobilization of body fat. The chain length and fatty acid unsaturation values provide some insight into how the cows are using dietary fat and flags herds that have a high probability of being in classical trans fatty induced milk fat depression. This, combined with the milk weight per cow per day and the calculated lactose production per cow per day provides some insight into the status of glucose metabolism in the herd.

“New Milk Analysis Tools to Improve Animal Performance -  
Dr. Dave Barbano.” Progressive Dairyman.



### To get started:

1. Contact your nutritionist
2. Contact Centre Lab for Supplies (763) 231-6768
3. Results are emailed to your nutritionist for interpretation.

### How to collect samples for FA Profile

- Bulk tank samples should be collected at minimum for 5 days. (i.e. 5 samples if everyday pickup, 3 samples if every other day pickup.)
- If the dairy has multiple tanks a sample must be taken from every tank for the 5 day span.
- Samples must be refrigerated during the collection period and shipped in correct packaging to maintain temperature. DO NOT FREEZE.

### Fatty acid profiles overall provide insight to:

- Diet and dietary changes
- Management and environment changes
- Physiological state of the cow
- Energy Balance

## June Milk Quality Leaders, ranked by SCC then Log SCC

Name	Town	SCC	Cows	Name	Town	SCC	Cows
GEHL ACRES FARM	CAMERON, WI	30	143	*SCOTT AND DYLAN YOUNGREN	WAVERLY	101	153
*STEVE&DEB HEUER	LITCHFIELD	31	33	REUTER FARMS	HASTINGS	103	117
SELKE FARMS	DAKOTA	39	241	BORST FAMILY DAIRY LLC	ROCHESTER	103	276
*JERRY & BEV POHLMANN	GREY EAGLE	47	70	GLEN & BECKY CHRISTEN	SAUK CENTRE	103	41
*MATT BERKTOLD	LAKE CITY	48	205	JER-LEY HOLSTEINS	HUTCHINSON	103	48
*KYLE MOSER	LAKE BENTON	49	109	SUNNY SIDE DAIRY	MAYER	104	150
*JIM EVANS	PIPESTONE	49	115	*JOHN & KRIS MILLER	PLAINVEIW	104	352
*SCOTT GATHJE	RICHMOND	52	70	*ADAM & SARAH MELLGREN	ZUMBRO FALLS	104	73
PINE-VUE FARMS	ROLLINGSTONE	54	102	WIRTLAND HOLSTEINS	LEWISTON	104	543
LINDAHL FARMS	LINDSTROM	57	120	RIVER VALLEY DAIRY LLC	SHELL LAKE, WI	105	123
JOHNSON DAIRY	HERON LAKE	57	99	SCHEFERS BROTHERS	PAYNESVILLE	105	74
RKB DAIRY	FARIBAULT	62	141	*TRAVIS LEHNERTZ	PLAINVIEW	105	365
*MIKE MENZE	OTTERTAIL	64	87	CLOVER GLEN SWISS	CLAREMONT	105	30
DELBERT BECHTOLD	ST JOSEPH	65	37	*JOHN AND CONNIE DONNAY	GLENCOE	106	63
HARMONY HILLS DAIRY	VICTORIA	65	56	MARSHLAND FARMS	CUSHING, WI	106	125
DOWN N' DIRTY	OAK PARK	66	5	PAUL SCHILLING	FORT RIPLEY	106	53
*KEN & LINDA GLISCZINSKI	NEW PRAGUE	70	190	*REID STRANSKY	OWATONNA	107	11
MERDAN DAIRY INC	AVON	70	89	*KEN & JOHN SCHMIT	ROLLINGSTONE	107	344
NEW-VUE AYRSHIRES	MAPLE LAKE	70	42	*JOHN WOLF & SONS	KELLOGG	107	96
HOEFS' DAIRY	NEW PRAGUE	71	295	BIRCH POINT FARMS PESHON	MINNESKA	108	319
*BRIAN & JULIE LIBBESMEIER	WATKINS	71	63	PANEK DAIRY	GREY EAGLE	108	141
HOUDEK DAIRY LLC	CALEDONIA	72	507	HOESE DAIRY INC.	MAYER	109	142
IRISH RIDGE DAIRY LLC	MILLVILLE	72	80	RADERMACHER DAIRY LLC	BROOTEN	111	257
*JOE WUETHRICH	BROWNTON	72	29	*JON & LISA ZWEBER	ELKO	111	112
*DEVOINE KRUSE	CALEDONIA	78	249	TRAIL SIDE HOLSTEINS	FOUNTAIN	114	726
MARSHALL KORN	ATWATER	78	65	KUECHLE DAIRY	WATKINS	114	247
SUNSHINE ACRES	ST CHARLES	79	227	VALLEY VIEW FARM 1	WINONA	114	132
*PAUL SCHUMACHER	HOUSTON	81	68	PAUL AND CINDY SWENSON	NICOLLET	114	322
WOLF CREEK DAIRY	DUNDAS	82	468	MEADOW BROOK DAIRY	SARTELL	117	91
SUNSHINE DAIRY LLC	ARLINGTON	82	91	*CORY AND KRISTEN SALZL	LITCHFIELD	119	24
DOUG & SANDRA DEROUSSEAU	RICE LAKE, WI	83	79	*GARY SCHLAUDERAFF	FRAZEE	120	659
SHIR-MAN HOLSTEIN FARM	FOUNTAIN	83	38	*CALVIN AND TAMMY BEUMER	HILLMAN	120	84
*DUANE&KAREN TIMM	PLAINVIEW	85	122	AVON HEIGHTS	DODGE CENTER	120	93
LONE OAK FARM	COLOGNE	85	39	GORECKI DAIRY	FOLEY	121	47
*MARK KLEHR	BELLE PLAINE	86	58	VIRCHOW DAIRY	GLENVILLE	121	35
BEAVER OAK DAIRY	ALTURA	88	135	*JAMES C PFEIFER	OWATONNA	121	54
*BILL & ALAN MILLER	THEILMAN	89	287	*RONALD BEHOUNEK	HAYFIELD	122	283
*MAREN & JEREMY HOLST	LAKE CITY	89	104	PEDLEY DAIRY	OCHEYEDAN	122	336
*RYAN KNISLEY	EDEN VALLEY	91	64	KUBALL DAIRY FARM	WATERVILLE	122	256
*MICHAEL BANSE	EITZEN	91	85	HIGH POINT DAIRY	MELROSE	123	144
*SCOTT&MICHELLE HERBER	UTICA	92	746	*MICHAEL & KACIE KURTH	STEWART	123	102
BLUE VIEW DAIRY FARM	CALEDONIA	92	298	ORTON DAIRY	HOLDINGFORD	123	22
*JOHN + KARYL DIERSEN	CALEDONIA	93	197	*NICK + DENNIS TATGE	FARIBAULT	124	254
*RANDY AND LUANN WAGNER	WEBSTER	93	357	HIDDEN HILL DAIRY LLC	ST CHARLES	124	353
JOHNSON DARREN+LYNN	WINONA	94	232	FILK FARMS	HUTCHINSON	124	90
NOSBUSH DAIRY	FAIRFAX	94	945	*DEAN HORST	BROOTEN]	124	77
VOGT DAIRY LLC	SAUK CENTRE	95	318	DAHL FARMS	RUSHFORD	124	258
*ROGER ALDINGER	WINONA	96	105	SCHMITT DAIRY	RICE	125	92
KRAIG&RACHELLE KRIENKE	LESTER PRAIRIE	98	615	HEMMESCH DAIRY INC.	MELROSE	125	115
SASS FARMS	CHATFIELD	98	259	TURNER DAIRY LLC	CENTURIA, WI	125	174