

Piimakarjakasvatustehnoloogia

Jere High

Tegevdirektor

Lancaster'i jõudluskontrolli organisatsioon
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Päevakord

Firma ülevaade

Teenuste tüübid ja uued uuringud

SRA haldusraportid

Mastiidi DNA uuringu kasutamine ja raportid

Lancaster DHIA

Põhieesmärk

Aidata meie liikmetel ja põllumajandussektoril olla edukas, toetades turvalise ja rikkaliku toidu kättesaadavust.

Tuumikväärtused

Meeskonnatöö, ausus, kuldreegel, uhkus ja innovatsioon

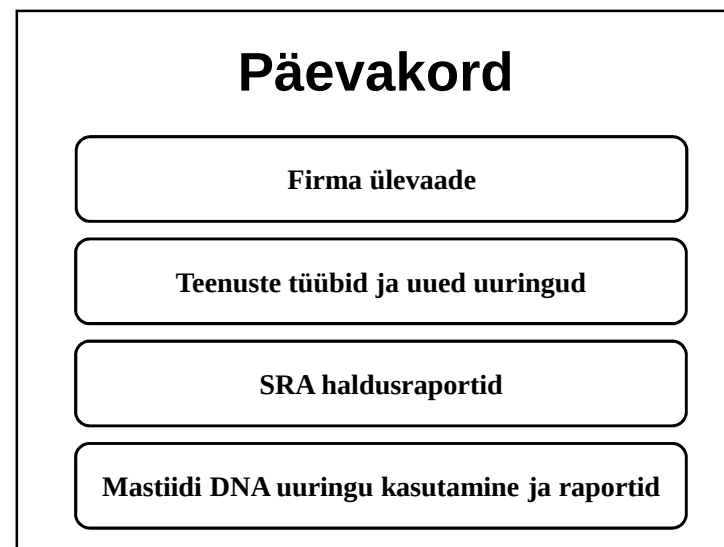
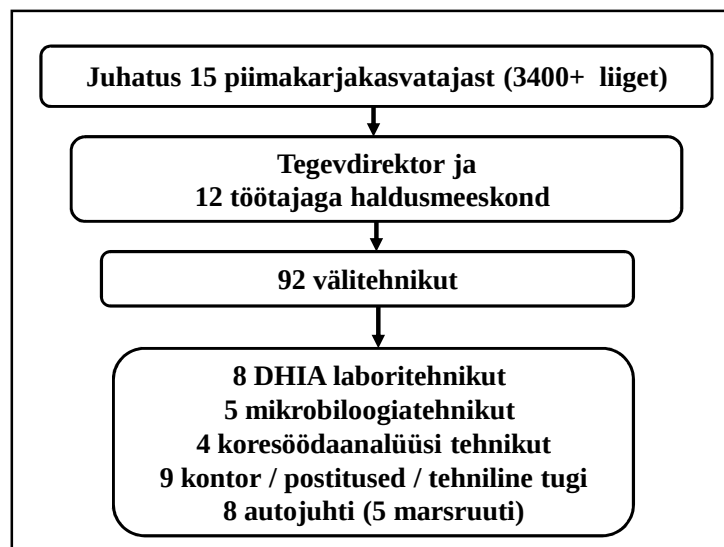
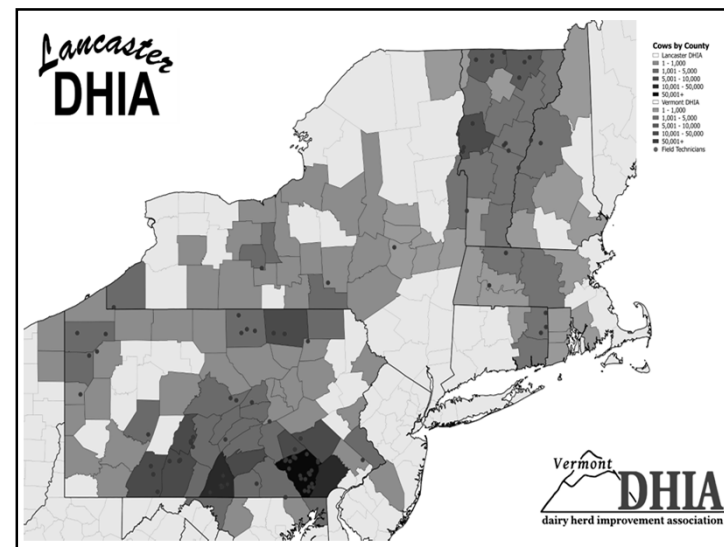
Strateegilised sihid

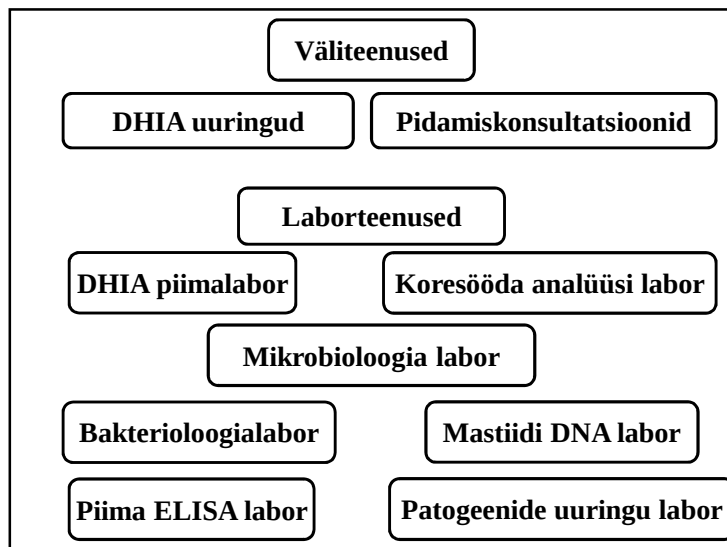
Pakkuda meie klientidele jätkuvalt paremat teenindust

Tugevadada meie reputatsiooni valdkonna tehnoloogia- ja innovatsioonialase liidrina

Püüelda säästliku arengu poole, mis põhineb piimakarja parendamisel ja toob kasumit läbi iga meie pakutava toote või teenuse

Lua andekas meeskond tõhusa kommunikatsiooni, vastastikuse austuse, usalduse ja vastutuse keskkonnas

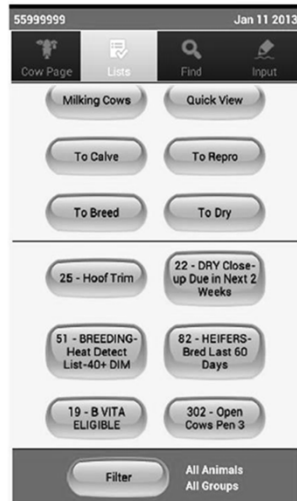




Lancaster DHIA Koresööda analüüsi labor







Lancaster DHIA kontor



Piimauuringute labor



Mida saame DHIA piimaproovist uurida?

Rasv, valk ja somaatiliste rakkude arv
227 000 proovi kuus

Tiinus piimast
3000 proovi kuus

Paratuberkuloos
750 proovi kuus

Mastiidi DNA
500 proovi kuus

Teadusuuringud
Kaseiin
Vabad rasvhapped
Ketoos

Mikrobioloogia labor



Mida saame uurida mikrobioloogia laboris?

Sertifitseeritud tootja makse
Piima komponendid (rasv, valk, SRA, piima uurea)
Bakterid, antibiootikumijäägid

Sertifitseeritud lõpptooted
Pudelipiim, jogurt, jäätis ja juust

Bakterioloogia laboranalüüs standardbakteritele
Piima ELISA paratuberkuloosile ja tiinus piimast

Mida saame uurida patogeenide laboris?

Sertifitseeritud patogeenid
Kontroll toorpiima müügiloa jaoks

Listeria

Campylobacter

E Coli O157

Salmonella

2014. a. maiks
sertifitseeritud
toorpiima jaoks

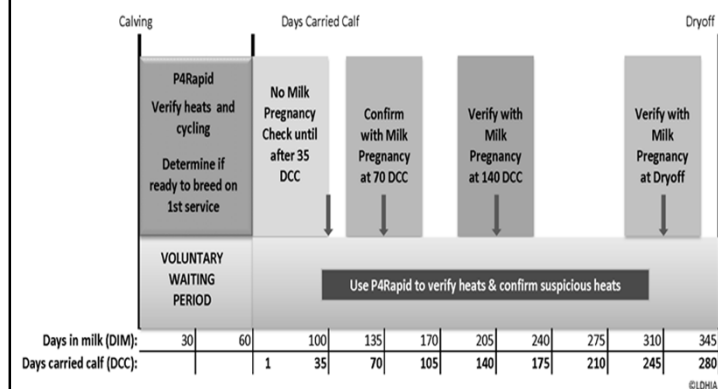
Samuti juust
jt. toidutooted

LDHIA esimene laudas kohapeal tehtav test

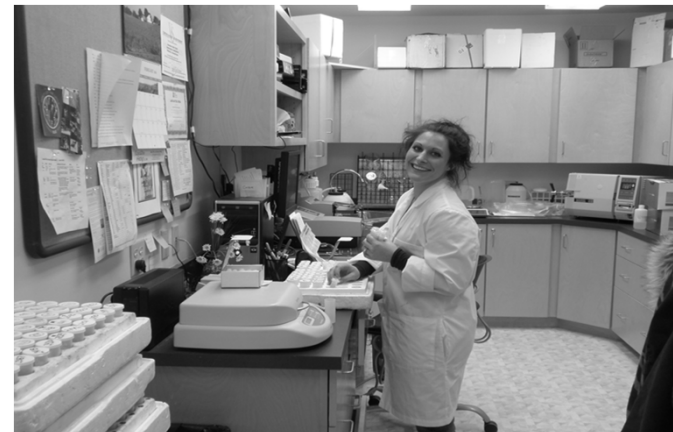
P4
Rapid
PROGESTERONE HEAT DETECTION TEST

P4 Rapid on kohapeal
tehtav piima progesterooni-
sisalduse test

Millal kasutada P4 Rapidi ja tiinuse määramist piimast



Tiinuse ELISAuuring piimast



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Mastiidi DNA uuringu kasutamine ja raportid

**DHIA raportid aitavad
farmeritel võidelda
kõrge SRA
probleemiga ja valida
välja lehma mastiidi
DNA PCR uuringuks**

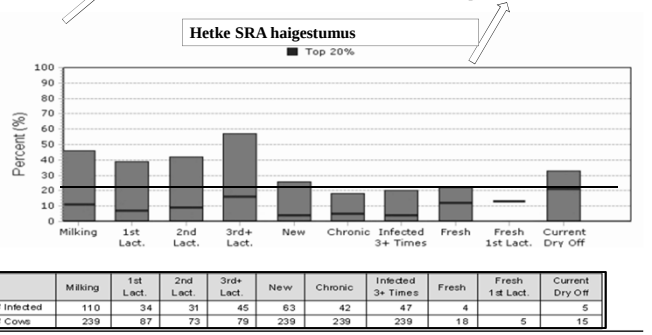
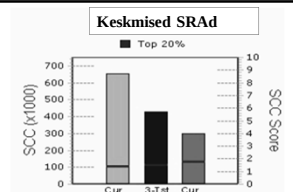
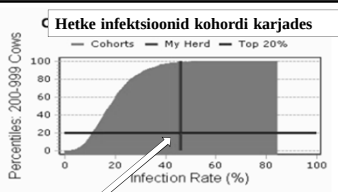
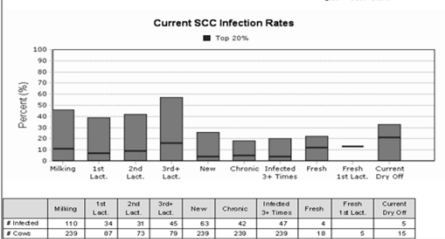
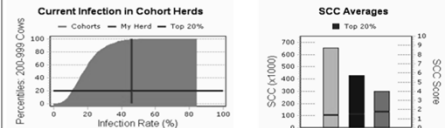
Udata- tervise jälgimine

Mastitis can be caused by many factors typically related to environmental or contagious bacteria that are introduced by less than optimal milking procedures or hygiene at facilities or milks. Mastitis can cause huge economic losses from reduced milk production, discarded milk, lowered reproductive performance and a ccessive herd turnover.

Somatic Cell Count (SCC) from a day's milk is a standard indicator of the impact of udder infection. Cows with levels less than 100,000/ml are considered healthy, and levels of 200,000/ml typically indicate an udder infection. This Monitor Alerts SCC's between 150,000 and 199,999 as SUSPECT and reveals cows that are not optimally healthy.

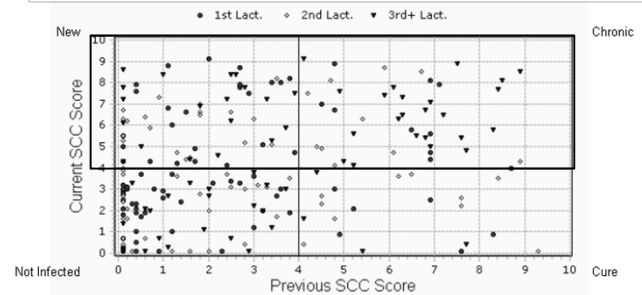
Since 2010, some processors have reported 3-month rolling geometric SCC averages to herds because of international pressure for cleaner milk to be less than that of 100,000/ml. A 3-month geometric average is a cube root of current test day SCC average x prior test day SCC average x 2nd prior test day SCC average. This method reduces the impact of any single SCC on the average for the 3-month period.

How well are top herds doing? Usually herd managers should set their own goals - but 'performance of top herds' can illustrate what can practically be achieved. This Monitor Alerts Top 20% herds using each herd's validated average SCC. Although average performance is similar across all herd sizes, more small herds have high infection rates than larger herds. The herd size categories for the Top 20% are 1 to 199 cows, 200 to 999 cows, and 1,000+ cows.



Not Infected SCC = 0-199K (0-3.9 SCS) Infected SCC = 200K+ (4.0-9.9 SCS)
Both 'Normal' and 'Suspect' are considered Not Infected and are sometimes called 'Negative'

SRA staatuse muutused – eelmisest praeguse uuringuni laktatsiooni kaupa

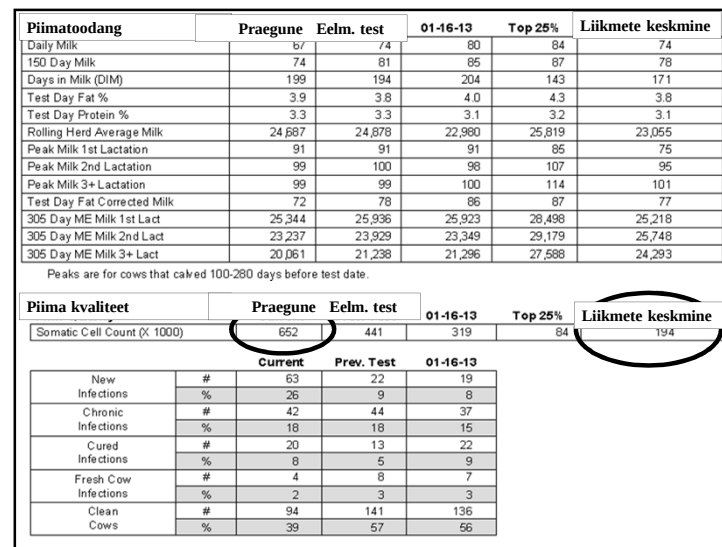
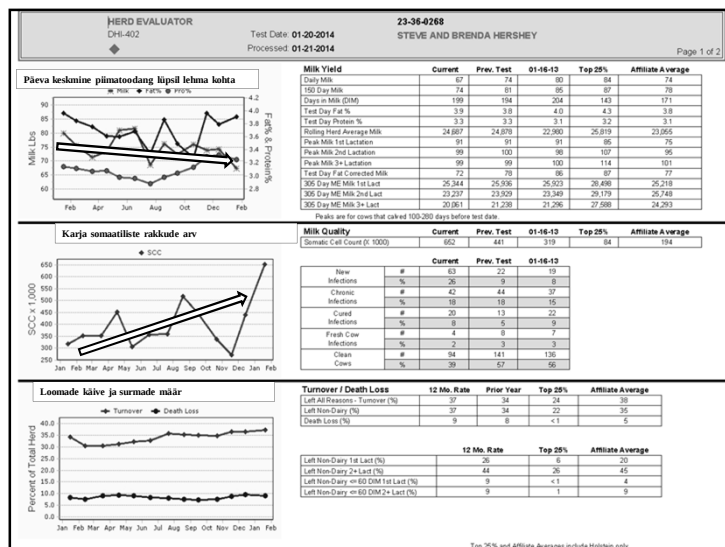
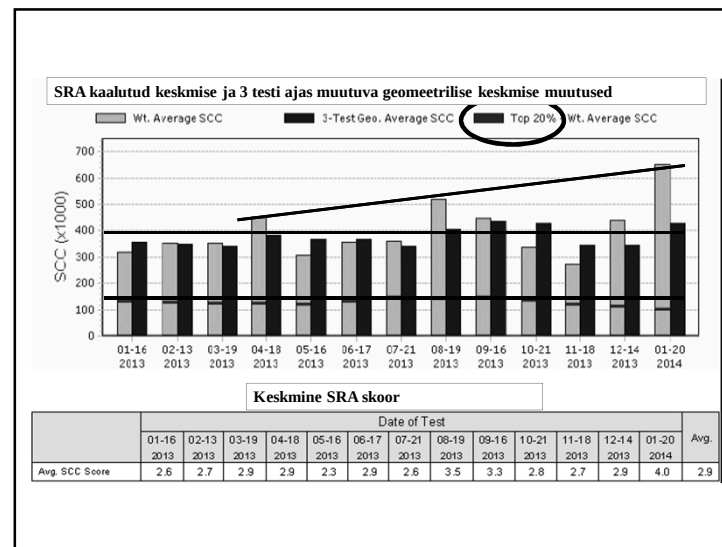
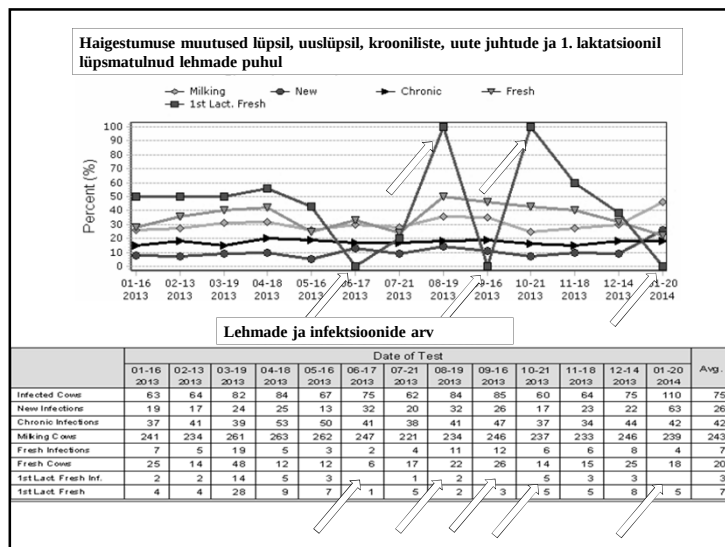


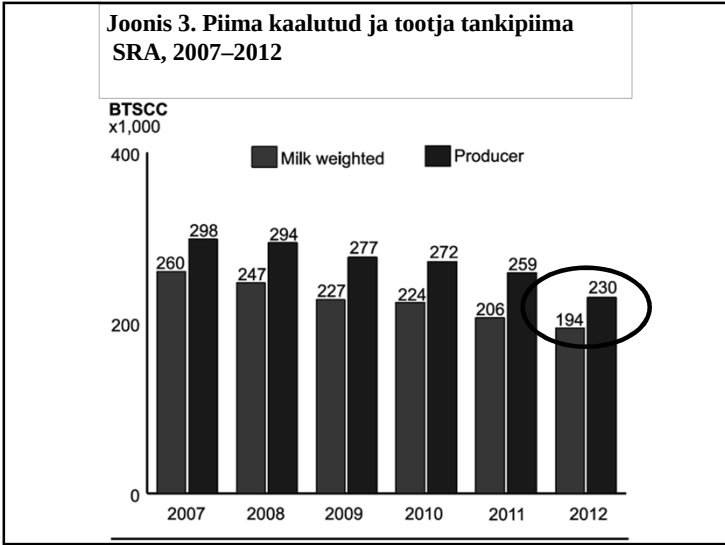
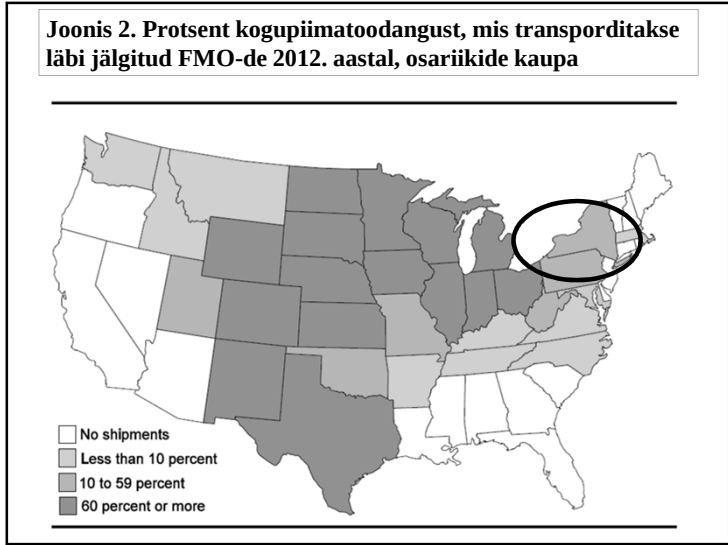
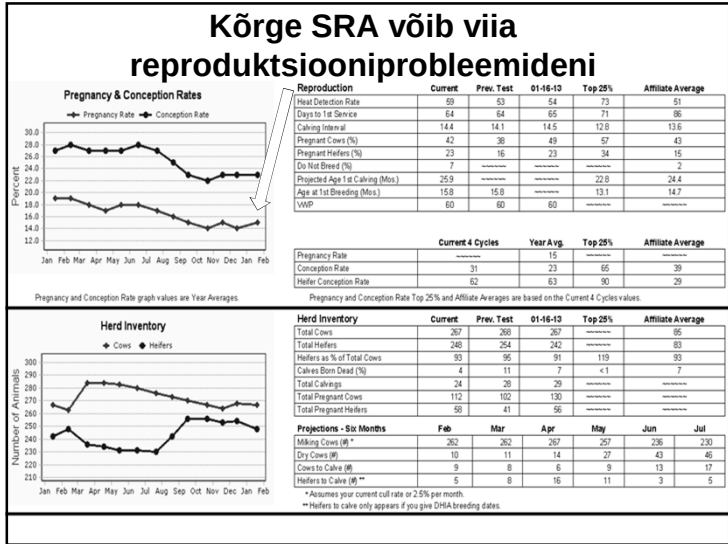
	Previous to Current Test			Last Dry Off to Fresh		
	My Herd		Top 20%	My Herd		Top 20%
	#	%	%	#	%	%
Not Infected	114	52	89	113	72	87
New Infections	63	29	5	22	14	9
Cures	20	32	47	32	58	79
Chronics	42	19	6	23	15	4
Net Trans. Rate	315		88	69		70

Net Transmission Rate
New Inf. / Cures * 100

Lehma, keda ravida või jälgida - 1. laktatsioon

Infected this test or last test (SCC >= 200K (SCS >= 4.0) and DIM >= 5														
Index	Grp	Lact #	DIM	Mik	SCC	Prev SCC	Inf. Level	Last Aug SCC	Prev SCC	Tests Infected	Days Infected	Days Infected	Days Infected	Days Infected
1940	1	331	24.0	8660	50	NEW	66	66	2	18	6-15-13	205	159	20,783
1907	1	218	60.0	6972	348	CHR	100	100	2	20	12-14-13	181	155	23,725
1976	1	364	15.0	6672	27	NEW	62	62	2	17	2-13-13	13	153	21,203
1917	1	340	18.0	5199	81	NEW	606	606	8	73	3-9-13	33	151	16,029
2009	1	155	63.0	3678	174	NEW	230	230	1	30	1-20-14	155	148	20,117
1905	1	178	60.0	3430	1403	CHR	2111	606	6	100	8-9-13	24	137	21,300
1929	1	395	54.0	3200	152	NEW	66	66	2	18	8-9-13	181	135	26,987
1903	1	282	15.0	3200	132	NEW	174	174	3	30	4-9-13	5	135	17,807
1907	1	287	72.0	2689	1716	CHR	1482	606	9	100	5-9-13	19	123	22,044
1901	1	199	60.0	2689	81	NEW	141	141	1	14	1-20-14	199	133	19,993
1909	1	257	62.0	2689	17	NEW	66	66	2	22	5-9-13	8	133	22,894
1955	1	329	71.0	2786	81	NEW	76	76	2	18	3-9-13	22	131	23,305
2020	1	77	69.0	2425	17	NEW	200	200	2	67	11-9-13	14	126	19,962
1903	1	332	35.0	2263	93	NEW	76	76	3	27	6-17-13	115	124	22,757
1907	1	326	67.0	1600	283	CHR	650	650	9	62	3-9-13	19	113	24,346
1909	1	279	42.0	1393	27	NEW	71	71	1	11	1-20-14	279	108	21,927
2027	1	46	75.0	1300	348	CHR	606	606	2	100	12-14-13	11	106	18,764
2006	1	206	40.0	1213	35	NEW	47	47	1	14	1-20-14	206	104	18,409
1912	1	339	21.0	800	29	NEW	29	29	1	9	1-20-14	339	90	27,835
1903	1	317	72.0	696	1131	CHR	800	800	10	91	3-9-13	10	86	24,952
1909	1	483	48.0	609	1493	CHR	539	539	12	88	12-11-12	29	81	20,668
1929	1	320	65.0	666	13	NEW	132	132	4	36	3-9-13	13	79	23,803
2002	1	214	60.0	429	115	NEW	57	57	1	14	1-20-14	214	70	21,888
1909	1	306	60.0	400	13	NEW	27	27	1	10	1-20-14	306	68	23,343
1903	1	277	62.0	373	41	NEW	71	71	3	33	6-17-13	60	65	21,614
2023	1	91	75.0	325	1493	CHR	1393	1393	3	100	11-9-13	28	61	18,688
2003	1	212	71.0	325	187	NEW	348	348	5	71	7-21-13	29	61	21,582
2011	1	58	60.0	264	1493	CHR	650	650	2	100	12-14-13	21	54	22,602
1919	1	337	47.0	246	41	NEW	29	29	1	9	1-20-14	337	52	21,842
1903	1	329	62.0	246	20	NEW	50	50	2	18	11-9-13	266	52	26,630
1977	1	311	70.0	246	13	NEW	47	47	2	20	8-9-13	157	52	23,759
1974	1	324	65.0	230	31	NEW	35	35	1	9	1-20-14	324	60	20,765
2006	1	52	94.0	214	69	NEW	123	123	1	100	1-20-14	52	47	20,817
1914	1	330	40.0	200	5199	CHR	132	132	6	65	3-9-13	23	46	30,658
2042	1	67	89.0	100	348	PRV	137	137	1	10	12-14-13	30	23	22,600
2018	1	944	53.0	711	1493	PRV	548	548	3	75	10-21-13	13	11	40,048
1979	1	270	65.0	54	460	PRV	62	62	1	11	12-14-13	233	2	22,993
2018	1	99	62.0	23	3040	PRV	538	538	3	75	10-21-13	9	30,737	37
2023	1	51	54.0	23	373	PRV	60	60	1	10	12-14-13	14	14,952	37
1964	1	303	60.0	13	2420	PRV	35	35	1	10	12-14-13	288	20,727	37





Lancaster DHIA uuringuajalugu

Year	Average # Cows	Lbs. Milk	Lbs. Butterfat	Lbs. Protein	SCC
1963-64	14,440	12,083	482		
1964-65	14,732	12,211	486		
1965-66	15,793	12,355	485		
1966-67	16,461	12,465	490		
1967-68	16,976	12,264	479		
1968-69	18,077	12,478	487		
1969-70	18,727	12,596	489		
1970-71	19,368	12,574	488		
1971-72	19,543	12,644	485		
1972-73	20,162	12,675	488		
1973-74	21,400	12,896	502		
1974-75	22,317	13,501	521		
1975-76	23,600	13,762	539		
1976-77	24,270	14,424	555		
1977-78	24,476	14,737	558		
1978-79	27,353	14,963	557		
1979-80	29,203	14,941	556		
1980-81	31,736	15,484	580		
1981-82	34,241	15,940	590		
1982-83	35,648	16,244	594		
1983-84	35,403	16,152	608		
1984-85	36,952	16,376	600		
1985-86	37,675	17,049	617		
1986-87	37,604	17,476	635		
1987-88	38,389	17,496	644		
1988-89	36,612	17,623	656		
1989-90	37,848	17,739	652		
1990-91	37,792	18,634	681		
1991-92	38,316	19,153	714	606	
1992-93	37,320	19,140	689	607	
1993-94	38,033	19,155	693	614	
1994-95	40,739	19,504	707	620	
1995-96	45,143	19,625	723	630	
1996-97	81,804	20,053	711	636	
1997-98	90,110	21,132	754	663	
1998-99	94,000	20,659	754	653	
1999-00	117,118	21,062	781	652	
2000-01	131,736	20,741	759	621	355,000
2001-02	146,483	21,099	780	632	342,000
2002-03	162,711	20,571	774	620	322,000
2003-04	191,332	20,328	742	613	326,000
2004-05	197,323	20,911	764	631	309,000
2005-06	196,627	21,027	781	638	280,000
2006-07	199,670	20,827	780	634	256,000
2007-08	207,322	21,324	797	648	240,000
2008-09	206,792	21,093	789	642	223,000
2009-10	209,827	21,015	774	635	
2010-11	217,170	21,077	792	643	
2011-12	259,148	20,862	782	638	
2012-13	270,566	21,410	809	653	

Viimased 11 muutuste aastat

Year	Average # Cows	Lbs. Milk	Lbs. Butterfat	Lbs. Protein	SCC
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2005-06	196,627	21,027	781	638	326,000
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Mastiidi DNA uuringu kasutamine ja raportid



Mis on PCR-põhine mastiidiuuring

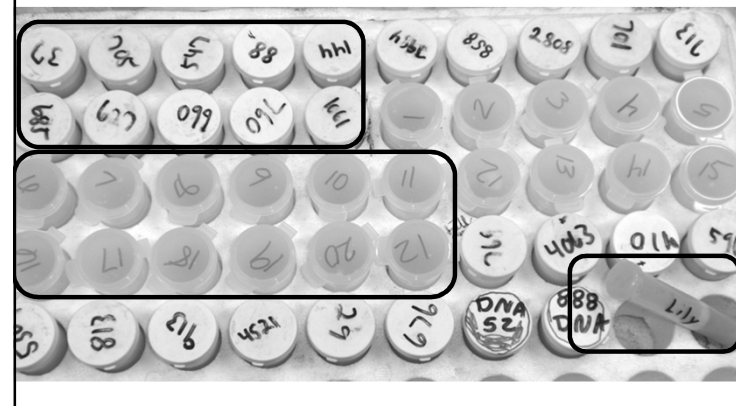
PCR on tehnoloogia, mille abil on võimalik ühte või mõnda üksikut DNA fragmenti mitmekordselt amplifitseerida, tekitades nii miljoneid konkreetse DNA järjestuse koopiaid.

Millised on eelised?

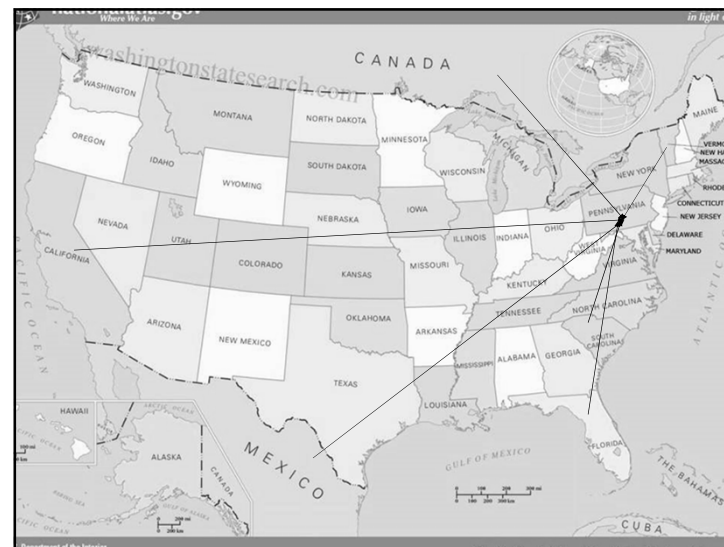
- Proovid ei pea olema steriilsed, kuid tuleb võtta aseptiliselt ja laborisse saata.
- Kasutada võib DHIA uuringutest jäänud proove.
- Pole vaja eraldi proovi võtta.
- Kulude säästmiseks võib rühma lehmade proovid üheks prooviks segada.

- Eeliste hulka kuulub ka võimalus valida uuringuks vaid teie kõrge SRAGA lehmad pärast SRA uuringut DHIA laboris.
- Võite samuti valida testitavaks kõigi üle teatud SRA väärtusega lehmade proovid.
- Lisaks võite lasta testida kõik viimase kuu jooksul lüpsmatulnud lehmad uute mastiidi juhtude ärahoidmiseks.

Proovid tulevad erineval kujul (DHIA & steriilsed)



**Proove saadetakse
Kaliforniast, idarannikult, Kanadast ja
Mehhikost**



**Rühmaproovid ja
karjauuringud**

- Soovitame kasutada 5-10pealiste rühmade testimist mittenakatud lehmade välja-arvamiseks. Seejärel uurige kõiki lehma nakatud rühmades.
- Karjataseme uuringuks suuremad kuni 250 pealised rühmad
- Tankipiima uuring väiksemate, alla 250 pealiste karjade kontrollimiseks nakkuslike patogeenide osas.

Mastitis PCR Assay Report

Lanoster DHIA
1885 OHLING ROAD
Manheim, PA 17546 Phone: (877) 672-4116 Fax: (717) 684-2911 Email: DNA@LanosterDHIA.com

Customer: Contagious Analysis Sample Report, dooled group Herd code: 12345678
Address: Phone: Fax: Email:
Veterinarian: Email:
Fax:

QUANTITY + Low
(specific to each bacterial target): ++ Medium
+++ High

Contagious Analysis (includes Staph aureus, Strept. ag., and Streptococcus agalae)
Please review these results with your veterinarian.

Date: 1/22/2010 3:00:04 PM
Calibration: 1/22/2010 3:04:02 PM
Instrument: PCR2Mq900 (Stratagene Mx2005PMx2005P Q-PCR System)

Sample	Bacterial finding	Quantity	Proportion
1	negative	-	-
2	negative	-	-
3	negative	-	-
4	negative	-	-
5	Staph. aureus	+	-
6	negative	-	-
7	negative	-	-
8	negative	-	-
9	Staph. aureus	+	-
10	negative	-	-

1, 3, 6, 7, 10
11, 12, 14, 15, 16
18, 20, 21, 22, 23
26, 27, 28, 29, 30
31, 32, 40, 41, 42
44, 45, 46, 47, 48
53, 54, 55, 56, 57
59, 60, 62, 63, 64
71, 76, 77, 78, 80
82, 87, 88, 90, 93

Rühmaproovi raport

Instrument: PCR2Major3 (Stratagene Mx3000P/Mx3005P QPCR System)				Tee 20 testi 50 asemel, säästa \$\$
Proov	Bakterleid	Kogus		
1	Negatiivne	-	-	1, 3, 5, 7, 10
2	Negatiivne	-	-	11, 13, 14, 15, 16
3	Negatiivne	-	-	18, 20, 21, 22, 23
4	Negatiivne	-	-	26, 27, 28, 29, 30
5	Staph. aureus	+		37, 38, 40, 41, 42
6	Negatiivne	-	-	44, 45, 46, 47, 49
7	Negatiivne	-	-	53, 54, 55, 56, 57
8	Negatiivne	-	-	59, 60, 62, 63, 64
9	Staph. aureus	+		71, 76, 77, 78, 80
10	Negatiivne	-	-	85, 87, 86, 90, 93

Tankipiima ja suurte rühmade proovid

Sample	Bacterial finding	Quantity	Proportion
tank	Staph. aureus	+	Enamik DNAST leitud, kui üle 90%
	Beta-lactamase gene	+	
	Str.dysgalactiae	+	
	Staph.sp.	+	
	Str.uberis	++	
	A.pyogenes and P.indolicus	+	
1	Str.uberis	++	↓
	Klebsiella sp. (including oxytoca and pneumonia)	+	
2	Staph.sp.	+	
3	Staph.sp.	+	
	Str.uberis	++	
4	Staph.sp.	+	>99%
	Str.uberis	+	
5	Beta-lactamase gene	+	
	Staph.sp.	+	
	S.marcescens	++	
6	Beta-lactamase gene	+	>99%
	Staph.sp.	++	
	S.marcescens	+	

Esmalt rühmauuring, siis individuaalne uuring Peamise 3 Test

Proov	Bakterleid	Kogus	Suhtarv
30	Negatiivne	-	-
27	Staph. aureus	+	
65	Staph. aureus	++	
64	Staph. aureus	+	
93	Negatiivne	-	-
56	Staph. aureus	+	
62	Staph. aureus	++	
31	Negatiivne	-	-
46	Staph. aureus	+	
36	Staph. aureus	++	
310	Staph. aureus	+	
564	Staph. aureus	+	
66	Staph. aureus	++	
99	M. bovis	++	
19	Staph. aureus	++	
42	M. bovis	++	
8	M. bovis	+	
	Staph. aureus	+	
10	Staph. aureus	++	
17	Staph. aureus	++	
16	M. bovis	+++	

Kasutatakse DHIA labori "kuuma nimekirja"

Lancaster DHIA Lab		***** HOT SHEET *****										
23001234	45 samples	collected 12-31-09		tested 1-05-10								
Cows in SCC order												
Weighted Average SCC: 438												
Index	Barn	Milk	Fat	Pro	OS	SCC	Count	DIM	Lac	CAR	W/O	%
4	4	42.0	4.3	3.5	5.4	9.0	6400	232	2	338		24.2
159	159--J	51.0	5.5	4.1	5.9	7.9	2986	272	1	283		13.7
48	48	38.0	4.6	3.7	5.3	7.9	2986	361	4	240		10.2
158	158	67.0	4.3	3.3	5.9	6.1	857	198	1	222		5.2
14280	14--280	67.5	4.3	3.3	5.8	6.0	800	295	1	205		4.9
125	125	79.0	5.2	3.2	5.9	5.7	650	8	2	189		4.6
333	333	47.0	3.3	3.1	4.7	6.4	1056	425	4	170		4.5
165	165	33.0	4.1	3.3	5.5	6.7	1300	609	1	152		3.9
8	8	94.0	3.9	2.8	6.0	4.9	373	109	3	142		3.2
18	18	63.5	4.4	3.4	5.5	5.3	492	332	2	131		2.8
13	13	18.0	4.2	3.4	5.6	7.0	1600	35	2	117		2.6
33	33	97.0	3.8	2.6	5.3	4.1	214	51	5	112		1.9
365	365	32.5	4.0	2.8	5.3	5.6	606	325	1	103		1.8
50	50	61.5	3.0	3.1	6.0	4.6	303	129	3	96		1.7
11	11	45.5	4.5	3.5	5.5	4.9	373	332	2	88		1.5
48261	48--261	79.0	3.7	3.3	5.9	4.1	214	327	2	82		1.5
166	166	75.0	4.5	3.7	5.8	3.9	187	173	2	77		1.3
2234	2234	55.0	3.6	3.0	5.4	4.3	246	224	5	71		1.2
99	99	36.0	5.1	4.0	5.1	4.6	303	336	2	65		1.0
137	137	63.0	3.6	3.3	5.7	3.7	162	429	2	60		0.9
4236	4236	18.0	5.9	3.1	5.2	5.3	492	21	3	55		0.8

Tehnik täidab DNA laborsaatekirja

Lancaster DHIA PCR DNA Mastitis Diagnostics
 ~ 1192 Old Line Road, Madison, PA 17145 ~ Office Phone 1-888-202-3442 ~ Fax 717-664-2911
 ~ DNA Lab 1-877-572-4115 ~ Email DNA@LancasterDHIA.com

DNA Lab Form LDHIA Tech # & Name: _____
 LDHIA Herd Code ____-____-____ Date: _____ Not a LDHIA Customer: _____
 Name: _____ Send to Veterinarian/Consultant: _____
 Address: _____ Name: _____
 Email: _____ Email: _____
 Fax: _____ Fax: _____
 Phone: _____ Phone: _____
 Bill To: _____

Select testing options below.
 See back for descriptions of Complete-16, Complete-12 and Contagious tests.

Lancaster DHIA Member Price	Non-Member Price
Complete-16 \$30 _____	Complete-16 \$32 _____
Complete-12 \$24 _____	Complete-12 \$26 _____
Contagious \$19 _____	Contagious \$21 _____

Please check the box below that applies:

Whole Herd Test	Cows over _____ SCC	Top _____ Cows for SCC	Cows listed on back
☐	☐	☐	☐

Additional testing instructions: _____

Lancaster DHIA Technicians ~ Please circle specific cows requested with RED magic marker on Lab List
 For DNA Sample Pooling Please contact the DNA Lab 1-877-572-4115

		Nakkuslikud		
		täielik-12	täielik-16	
1	<i>Staphylococcus aureus</i>	X	X	X
2	<i>Streptococcus agalactiae</i>	X	X	X
3	<i>Corynebacterium bovis</i>	X	X	
4	<i>Streptococcus dysgalactiae</i>	X	X	
5	<i>Streptococcus uberis</i>	X	X	
6	<i>Staphylococcus sp.</i>	X	X	
7	<i>Escherichia coli</i>	X	X	
8	<i>Enterococcus sp.</i>	X	X	
9	<i>Klebsiella sp.</i>	X	X	
10	<i>Serratia marcescens</i>	X	X	
11	<i>A. pyogenes & P. indolicus</i>	X	X	
12	<i>Stafülokoki β-laktamaasi geen</i>	X	X	
13	Pärmid	X		
14	<i>Mycoplasma bovis</i>	X		X
15	<i>Mycoplasma spp</i>	X		
16	<i>Prototheca</i>	X		

Miks valida tavabakterioloogia asemel PCR-põhine mastiidiuuring?

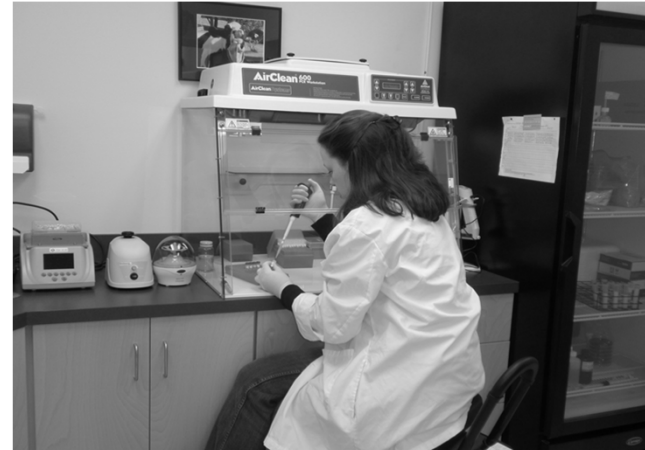
- Keskmiselt 25–40% kliinilise mastiidiga lehmadel võetud piimaproovidest on tavalise bakterikülvi puhul kasvuta.
- PCR-põhine mastiidiuuring viib tõhusama ravini tänu järgnevale:

- Koliformide täpsem kindlakstegemine.
- Mastiidiallikate kindlakstegemine individuaalsest või tankipiimaproovist.
- Mastiidiallikate kindlakstegemine juba ravitud lehmade hulgas.
- Uuringuks kuluva aja lühenemine 2-10 päevalt (traditsiooniline bakterioloogia) 1-2 päevani alates proovi laborisse saabumisest.
- Subkliiniliste juhtude leidmine enne nende kliiniliseks või krooniliseks muutumist.

DNA labor uurib proove PCR-põhise analüüsiga



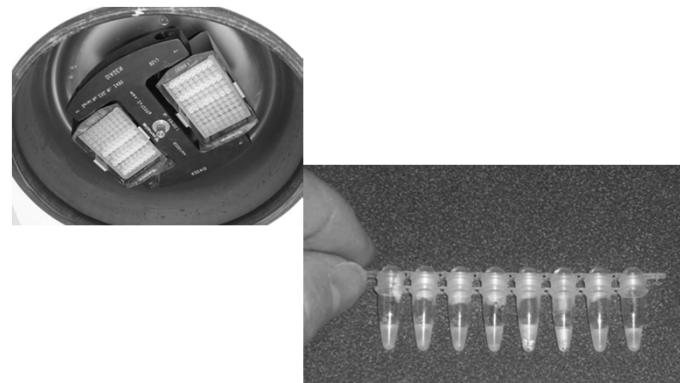
Plaatide ettevalmistus



Plaatide ettevalmistus



Mastiidi DNA ekstraheerimine



Agilent Technologies Mx3005P analüsaator



LANCASTER DHIA
1592 Old Line Road
Munheim, PA 17545 Phone: (877) 572-4115 Fax: (717) 664-2911 Email: DHIA@LancasterDHIA.com

Mastitis PCR Sample Pooling Report

Customer: John Henry Smith
Address: 123 Short Horn Lane
Phone: 777-525-1234
Veterinarian: Dr. Kool Hands
Email: koolhands@psu.com
Fax: 777-525-4321

Herdcode: 12345678
Fax: 777-528-4567
Email: hsymlib@psu.com

When multiple bacteria targets are detected in a sample the percentage of the most abundant bacteria is reported if its proportion is over 90%.

QUA NTITY
(specifc to each
bacteria target)
+ Low
++ Medium
+++ High

Full Panel Analysis (Includes Staph aureus, Staph ep, Strept ag, Str sp, dysgalactiae, Strept uberis, E. coli, Enterococcus sp., Klebsiella sp.,
Serratia marcescens, Corynebacterium bovis, A. pyogenes IM & P, moraxella, and Saphylococci Streptococcus spp.)

Date: 12/9/2009 8:58:40 AM

Calibration: 9/28/2009 1:41:09 PM

Instrument: PCR1 (Stratagene Mx3005P/Mx3005P QPCR System)

Sample	Bacterial finding	Quantity	Proportion
pool 1	Str.dysgalactiae Klebsiella sp. (including oxytoca and pneumonia)	++ +++	>99%
pool 2	Staph. aureus E.coli Klebsiella sp. (including oxytoca and pneumonia)	++ ++	
21RR	Negative	-	-
21LR	Staph. aureus Klebsiella sp. (including oxytoca and pneumonia)	++ ++	
83RR	Negative	-	-
585LR	Negative	-	-
46RR	E.coli	++	-

Classification	Bacteria	Contagious or Environmental	Source	Spread	Control	Treatment
Staphylococcus spp.	Staph. aureus	Contagious	Infected udders, hands of milkers	Milking time	Post-dip, DCT ¹ , sequestration and cull if necessary	Please consult your veterinarian
	Cocci () staph. & S. hyicus	Neither	Skin flies & occasionally environment	Infects teat canal from skin sources	Post-dip, DCT	
Streptococcus spp. and Enterococcus spp.	Strept. agalactiae	Contagious	Infected udders	Milking time	Milking time hygiene, post-dip, DCT	
	Strept. dysgalactiae	Contagious and environmental	Infected udders and environment	Milking time & environmental contact	Milking time hygiene, pre- & post-dip, DCT, test seal	
	Strept. uberis	Environmental	Environment - early dry period	New IMI ² during early dry period	Milking time hygiene, pre- & post-dip, DCT, test seal	
	Environmental strep & Enterococcus spp.	Environmental	Environment	Environmental contact	Milking time hygiene, pre- & post-dip, DCT, test seal	
Coliform	Escherichia coli	Environmental	Bedding, manure, soil	Environmental contact	Cows clean & dry, use of sand bedding, pre-dip, a JS vaccine	
	Klebsiella spp.	Environmental	Organic bedding	Environmental contact	Avoid sandlot & recycled manure, pre-dip, JS vaccine	
	Enterobacter spp.	Environmental	Bedding, manure, soil	Environmental contact	Cows clean & dry, use of sand bedding, pre-dip, a JS vaccine	
	Serratia spp.	Environmental	Soil and plants	Environmental contact	Cows clean & dry, pre-dip (no chlorhexidine products)	
	Pseudomonas spp.	Environmental	Water & wet bedding	Environmental contact	No water use in parlour, no cooling ponds, sand bedding, a JS vaccine	
	Proteus spp.	Environmental	Bedding, feed & water	Environmental contact	Not much known, use of sand bedding, a JS vaccine	
	Pasteurella spp.	Probably contagious	Upper respiratory tract of mammals and birds	Unknown - likely cow to cow	Prevent test injuries, remove affected cows from herd	
	Yeast & mold	Environmental	Soil, plants, water	Dirt infusions	Aseptic infusions	
Other	Corynebacterium bovis & other corynebacteria	Contagious	Infected udders	Cow to cow	Post-dip	
	Prototheca	Environmental	Soil, plants, water	Dirt infusions, infected udders	Aseptic infusions, eliminate infected cow	
	Bacillus spp.	Environmental	Soil, water, air	Dirt infusions	Aseptic infusions	
	Arachnibacterium propionis	Contagious/Environmental	Teat injuries	Flies	Fly control	

Information obtained from NMC Laboratory Handbook on Bovine Mastitis and veterinary consultation for treatment recommendations.
 *These are general treatment recommendations; actual recommendations may vary from herd to herd. Please consult your veterinarian.
 ***Extra label usage, please consult your veterinarian before starting this protocol.
 ***Nonsteroidal anti-inflammatory drugs.
 1 - DCT, dry cow therapy; 2 - IMI, intramammary infection; 3 - DIM, intramammary.

C. S. Peterson-Wolfe and J. Curran
 Virginia Tech Mastitis & Immunology Laboratory &
 Virginia Maryland Regional College of Veterinary

Järgige oma unistusi...

Te ei tea iial, kuhu nad teid
viia võivad.

See võiks olla Eesti

Põhja-Lancaster



Põhja-Lancaster



**TÄNAN TEID
& küsimused**

