

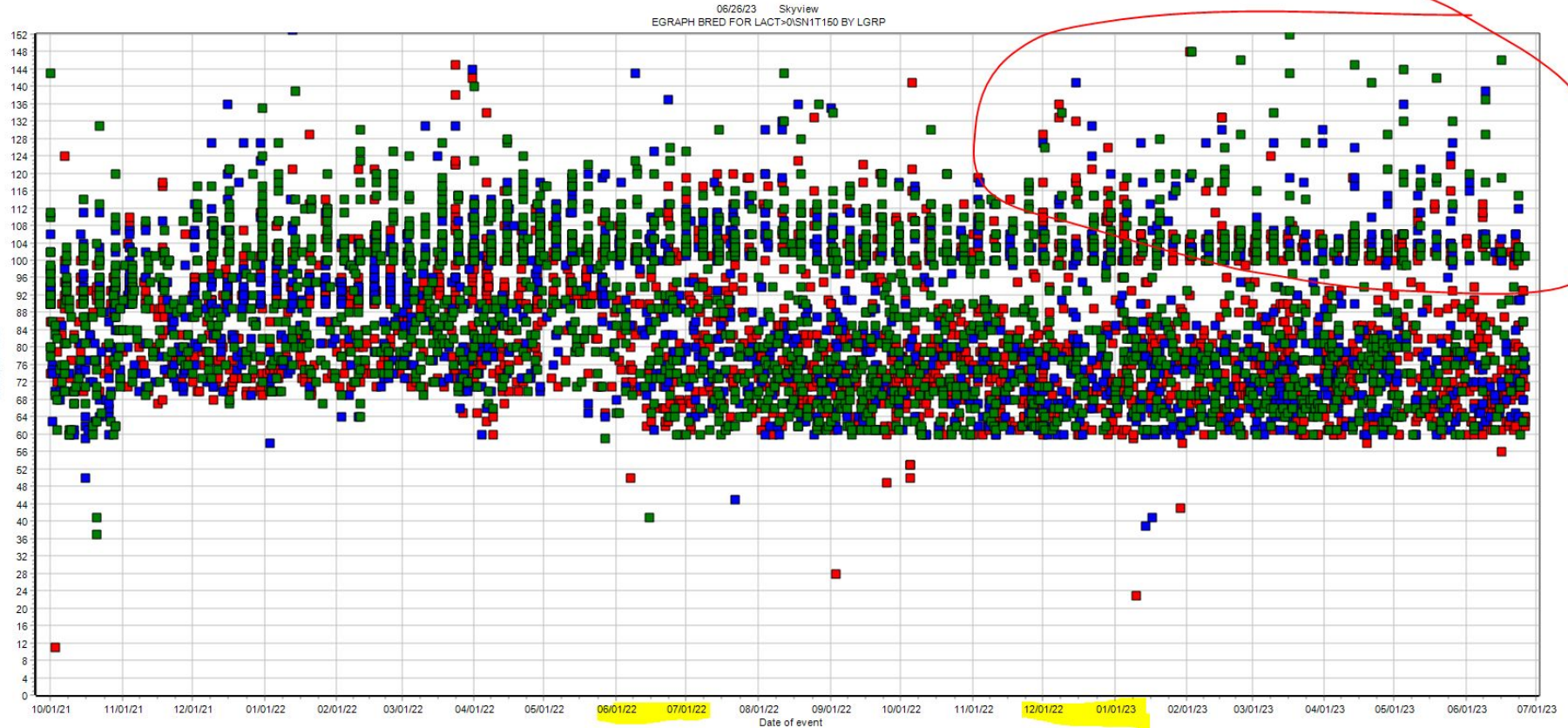
Skyview - UMN

Completed Projects since Jan 2022

1. Updated calf colostrum protocols and SOP of mixing milk replacer
2. Implemented SDCT program and monitoring
3. Updated treatment protocols in DC305
4. Implemented Mastitis screening program and logistics
5. Created treatment lists for hospital and fresh pen, and also alert lists for increased staff compliance
6. Written protocols for common treatments and entering in computer, down cow handling/procedures, and shipping guidelines for Skyview (in spanish)
7. Training of new/existing staff on milking prep, dry off procedure, and screening/treatment of mastitis
8. Updated breeding/repro protocols on farm and in computer, including transferring GEA alerts to breeding list on DC305 (more cows being bred off activity now compared to prior)
9. Weekly walkthroughs with email updates, etc

Repro Updates

DIM to 1st breeding (VWP)



Reproduction

Preg Rate highlighted on right

June '22 was change to 60 day VWP

December was implementation of updated resynch protocols

Preg Rate trending better, but have to see how summer affects it

Date	Br Elig	Bred	Pct	Pg Elig	Preg	Pct	Aborts
2/06/22	657	332	51	650	171	26	19
2/27/22	704	329	47	699	156	22	16
3/20/22	755	399	53	746	205	27	16
4/10/22	701	350	50	696	183	26	15
5/01/22	636	303	48	631	132	21	20
5/22/22	627	298	48	619	134	22	20
6/12/22	657	339	52	650	130	20	18
7/03/22	638	380	60	626	162	26	17
7/24/22	627	339	54	618	154	25	17
8/14/22	666	382	57	653	149	23	21
9/04/22	692	400	58	681	179	26	17
9/25/22	673	399	59	665	160	24	12
10/16/22	675	387	57	663	194	29	17
11/06/22	660	359	54	646	155	24	13
11/27/22	669	381	57	662	175	26	9
12/18/22	650	360	55	642	175	27	11
1/08/23	627	372	59	611	162	27	4
1/29/23	602	352	58	591	164	28	8
2/19/23	600	366	61	593	175	30	6
3/12/23	616	358	58	611	183	30	13
4/02/23	594	341	57	582	174	30	2
4/23/23	522	325	62	500	174	35	0
5/14/23	489	278	57	0	0	0	0
6/04/23	471	285	61	0	0	0	0
Total	14248	7851	55	14035	3646	26	291

Any problems with conception by breeding code?

Conception for last year

CIDR conception poor, but I still question how its entered

Breeding Code	95% CI	%Conc	#Preg	#Open	Other	Abort	Tot ▼	%Tot	SPC
TOTALS	49-53	51	1308	1254	127	48	2689	100	2.0
Standing Alert	51-56	53	964	847	94	35	1905	71	1.9
Ovsynch	42-53	47	145	162	17	6	324	12	2.1
PreSync	42-55	48	124	132	12	7	268	10	2.1
CIDR	33-47	40	72	108	4	0	184	7	2.5

Conception by Breeding Code

Oct '21 to June '22 (mostly prior to updates to lists)

~50% being bred off alerts

25% being bred by TAI for first breeding

Breeding Code	95% CI	%Conc	#Preg	#Open	Other	Abort	Tot ▼	%Tot	SPC
TOTALS	49-52	51	2120	2063	126	209	4309	100	2.0
Standing Alert	49-53	51	1006	974	72	85	2052	48	2.0
PreSync	49-56	53	528	476	20	51	1024	24	1.9
Ovsynch	44-50	47	407	461	24	51	892	21	2.1
CIDR	44-59	52	79	74	5	16	158	4	1.9
Off cycle	44-65	55	46	38	4	2	88	2	1.8
Rub-Off	49-70	60	50	33	1	3	84	2	1.7

Conception by Breeding Codes

June '22 to now

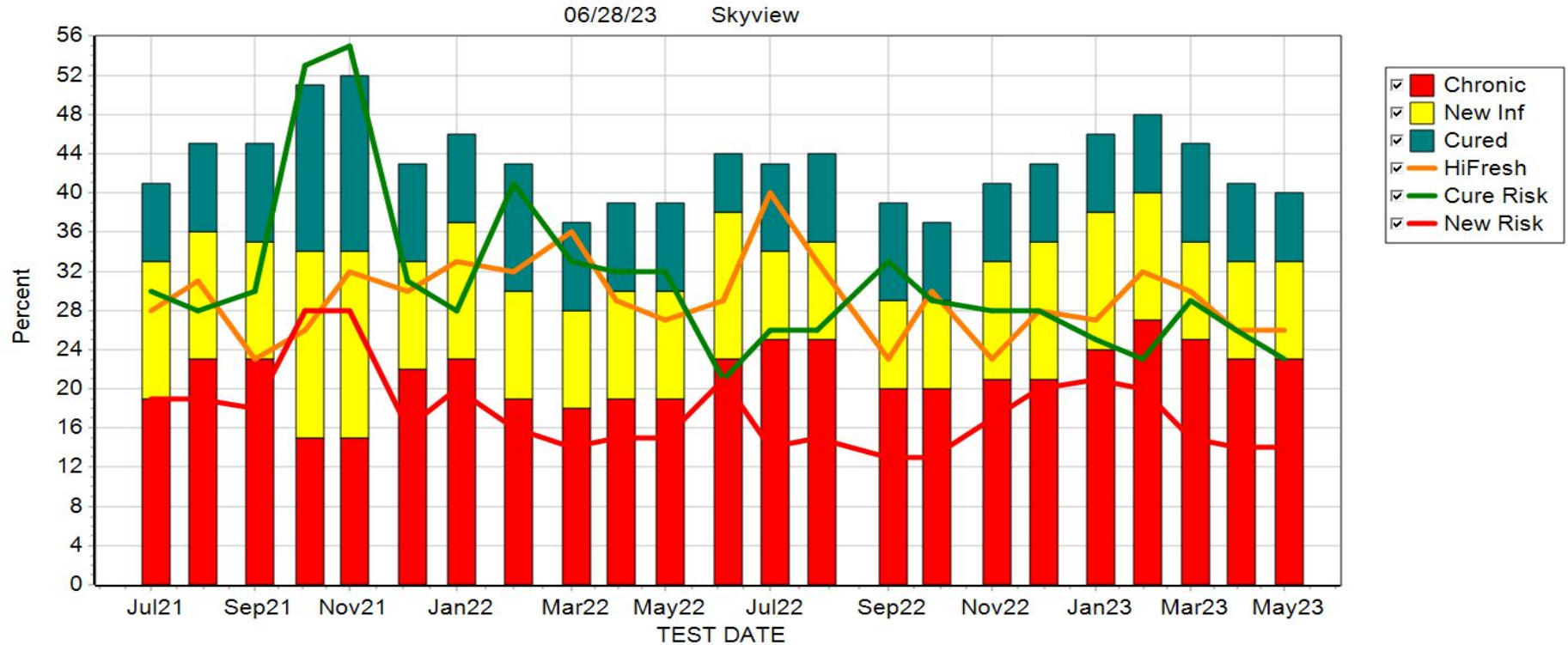
70% being bred off heats!

Only 11% making it to a TAI for first breeding (10% less)

Breeding Code	95% CI	%Conc	#Preg	#Open	Other	Abort	Tot ▼	%Tot	SPC
TOTALS	46-49	48	2864	3145	* 636	187	6645	100	2.1
Standing Alert	48-51	49	2083	2133	* 455	123	4671	70	2.0
Ovsynch	41-48	44	367	461	78	34	906	14	2.3
PreSync	40-48	44	298	382	68	23	748	11	2.3
CIDR	35-47	41	104	148	* 34	6	286	4	2.4
Off cycle	39-78	60	12	8	0	1	20	0	1.7

Mastitis

What are the infection dynamics?



What are the infection dynamics? ALL

T E S T D A T E S

7/19 8/16 9/28 10/24 11/29 12/27 1/30 2/27 3/28 4/24 5/23

SCC

Chronic %	25	25	20	20	21	21	24	27	25	23	23
#	702	672	464	523	511	540	633	686	620	577	566
New Inf %	9	10	9	9	12	14	14	13	10	10	10
#	251	263	215	244	292	348	357	317	254	245	261
Cured %	9	9	10	8	8	8	8	8	10	8	7
#	266	250	224	217	191	208	200	195	255	204	182
Clean %	56	57	61	62	60	57	54	53	55	59	59
#	1582	1549	1391	1608	1497	1456	1421	1329	1372	1449	1480
HiFresh %	40	33	23	30	23	28	27	32	30	26	26
#	111	82	89	62	69	73	86	77	64	67	71
LoFresh %	60	67	77	70	77	72	73	68	70	74	74
#	170	168	302	146	226	189	236	167	146	190	197
Cure Risk	26	26	33	29	28	28	25	23	29	26	23
New Risk	14	15	13	13	17	20	21	20	15	14	14

<8% chronics

>80% clean

<20% ? Hi Fresh

<8% new risk

What are the infection dynamics? L1

T E S T D A T E S

7/19 8/16 9/28 10/24 11/29 12/27 1/30 2/27 3/28 4/24 5/23

SCC

Chronic %	12	10	9	9	9	9	10	13	14	13	14
#	126	92	88	92	87	96	110	125	150	141	161
New Inf %	7	7	6	5	9	9	8	12	8	8	8
#	73	67	61	56	89	95	88	122	88	88	89
Cured %	11	11	7	7	7	8	8	6	9	8	6
#	107	101	70	68	69	84	82	59	99	83	68
Clean %	70	73	77	79	75	73	74	69	68	71	72
#	703	692	722	812	743	744	782	687	725	762	802
HiFresh %	37	27	16	29	17	23	17	30	20	25	25
#	29	25	25	16	17	23	12	25	15	32	26
LoFresh %	63	73	84	71	83	77	83	70	80	75	75
#	50	66	131	39	82	78	57	59	59	94	80
Cure Risk	48	52	44	44	44	47	44	32	39	38	30
New Risk	9	9	7	6	11	11	10	15	11	10	10

<12% Hi Fresh Heifers

What are the infection dynamics? L2

T E S T D A T E S

7/19 8/16 9/28 10/24 11/29 12/27 1/30 2/27 3/28 4/24 5/23

SCC

Chronic %	22	23	20	18	19	18	22	23	22	20	19
#	169	165	113	120	116	117	140	148	140	125	120
New Inf %	10	10	10	11	12	16	14	12	11	9	12
#	75	73	60	70	73	101	88	75	70	57	76
Cured %	8	8	11	8	8	9	10	8	10	10	8
#	59	60	64	55	47	55	62	48	63	61	51
Clean %	61	59	59	63	62	57	55	58	58	62	61
#	471	434	340	410	377	364	357	369	377	391	392
HiFresh %	31	16	13	19	15	28	21	26	28	24	16
#	18	6	12	11	12	18	23	16	15	13	12
LoFresh %	69	84	87	81	85	72	79	74	72	76	84
#	40	31	79	48	67	46	86	46	38	42	65
Cure Risk	27	26	35	31	30	33	31	26	31	33	30
New Risk	14	14	14	15	16	22	20	17	16	13	16

What are the infection dynamics? L3

T E S T D A T E S

7/19 8/16 9/28 10/24 11/29 12/27 1/30 2/27 3/28 4/24 5/23

SCC

Chronic %	40	40	34	34	35	36	42	46	42	41	39
#	407	415	263	311	308	327	383	413	330	311	285
New Inf %	10	12	12	13	15	17	20	13	12	13	13
#	103	123	94	118	130	152	181	120	96	100	96
Cured %	10	8	12	10	8	8	6	10	12	8	9
#	100	89	90	94	75	69	56	88	93	60	63
Clean %	40	40	42	42	42	39	31	31	34	39	39
#	408	423	329	386	377	348	282	273	270	296	286
HiFresh %	44	42	36	37	34	33	35	37	41	29	39
#	64	51	52	35	40	32	51	36	34	22	33
LoFresh %	56	58	64	63	66	67	65	63	59	71	61
#	80	71	92	59	77	65	93	62	49	54	52
Cure Risk	20	17	26	23	19	18	12	18	22	16	19
New Risk	20	23	22	24	26	30	39	30	26	25	25

Staph aureus cultures

	Total	21-Jun	15-Jun	7-Jun	24-May	17-May	10-May	3-May	19-Apr	12-Apr	29-Mar	22-Mar	15-Mar	1-Mar	15-Feb	8-Feb
Total	2358	95	124	246	105	123	142	261	182	80	108	192	200	66	115	319
Positives	225	8	14	13	7	14	18	17	11	12	11	14	11	17	27	31
% Positive	10%	8%	11%	5%	7%	11%	13%	7%	6%	15%	10%	7%	6%	26%	23%	10%

- 35% Fresh cows / 65% Mastitis (QQ on sample ID)
- ~5% of samples bad IDs

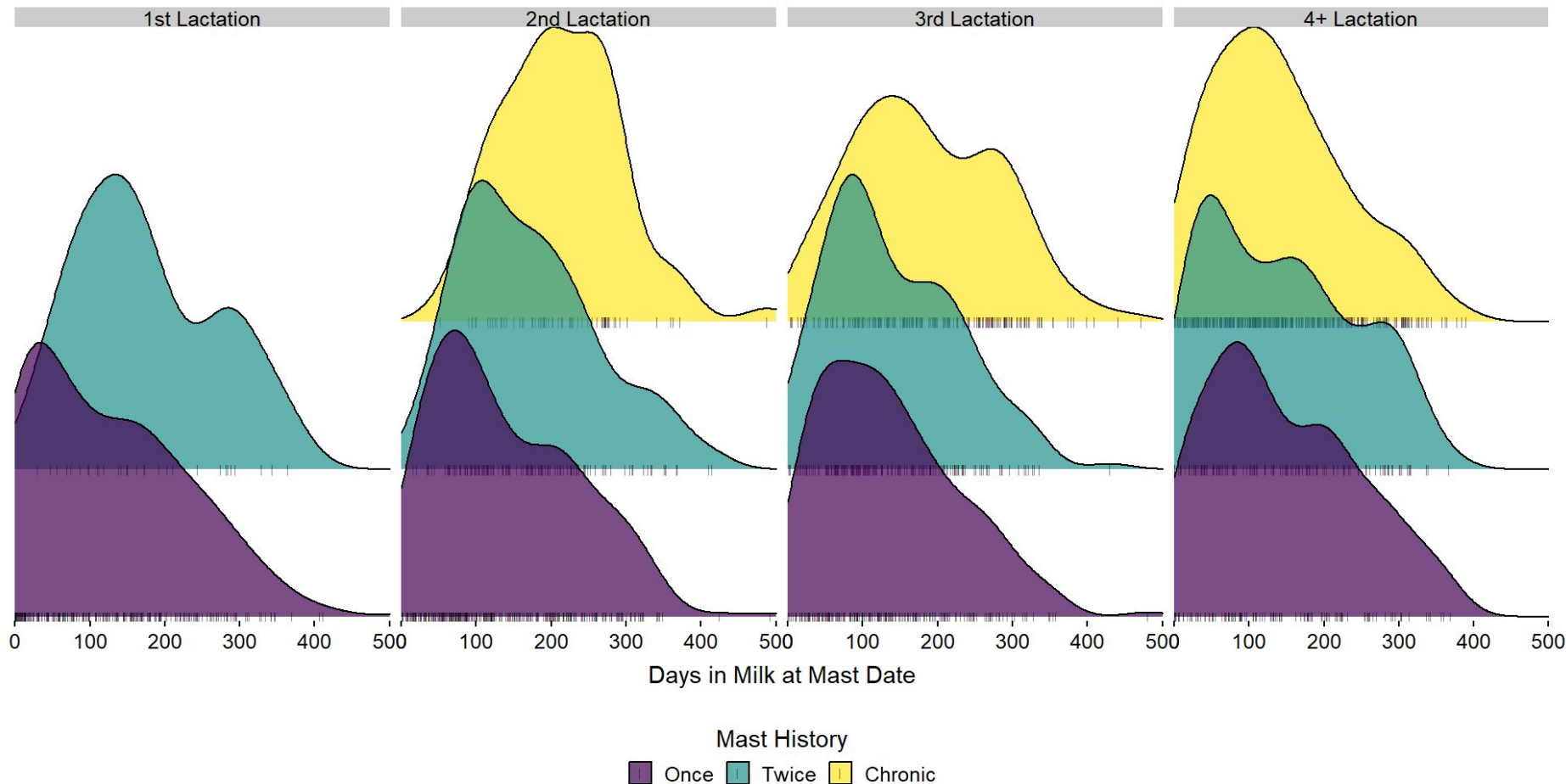
Staph aureus cows

- 255 cows culled
- 70 cows currently on the dairy
 - 22 cultured at Freshening / 48 with a mastitis event
 - Fresh culture: 10 heifers (3 21000s, 7 8000s)
 - 28 are chronically high SCC
 - Meaning the rest are relatively new infections – we are still making Staph aureus cows
 - Actions:
 - 39 should be culled asap (1 that could be dried off)
 - 9 on previous cull list (still should be culled)
 - 5 should be culled at freshening (currently dry)
 - 22 to watch (at least some are possible contaminations?)
 - 4 possibly wrong IDs on sample tubes / not Staph aureus cows

Chronic Cows

- Total: 449 really chronic cows
 - 390 cows have at least 4 of the last 6 tests >250,000
 - 85 had all 6/6
 - 138 5/6
 - 167 4/6
 - 59 more are L2+ with 3 of the last 6 tests >250,000 and a DRYLG>4
- 16 are Staph aureus cows
- 21 are NOTREATS (all Staph aureus cows, plus 4 cows XMAST>3)
- 36 are DNBs

Clinical cases peak in early lactation



By 6 months 50% of 3rd lactation cows have another case

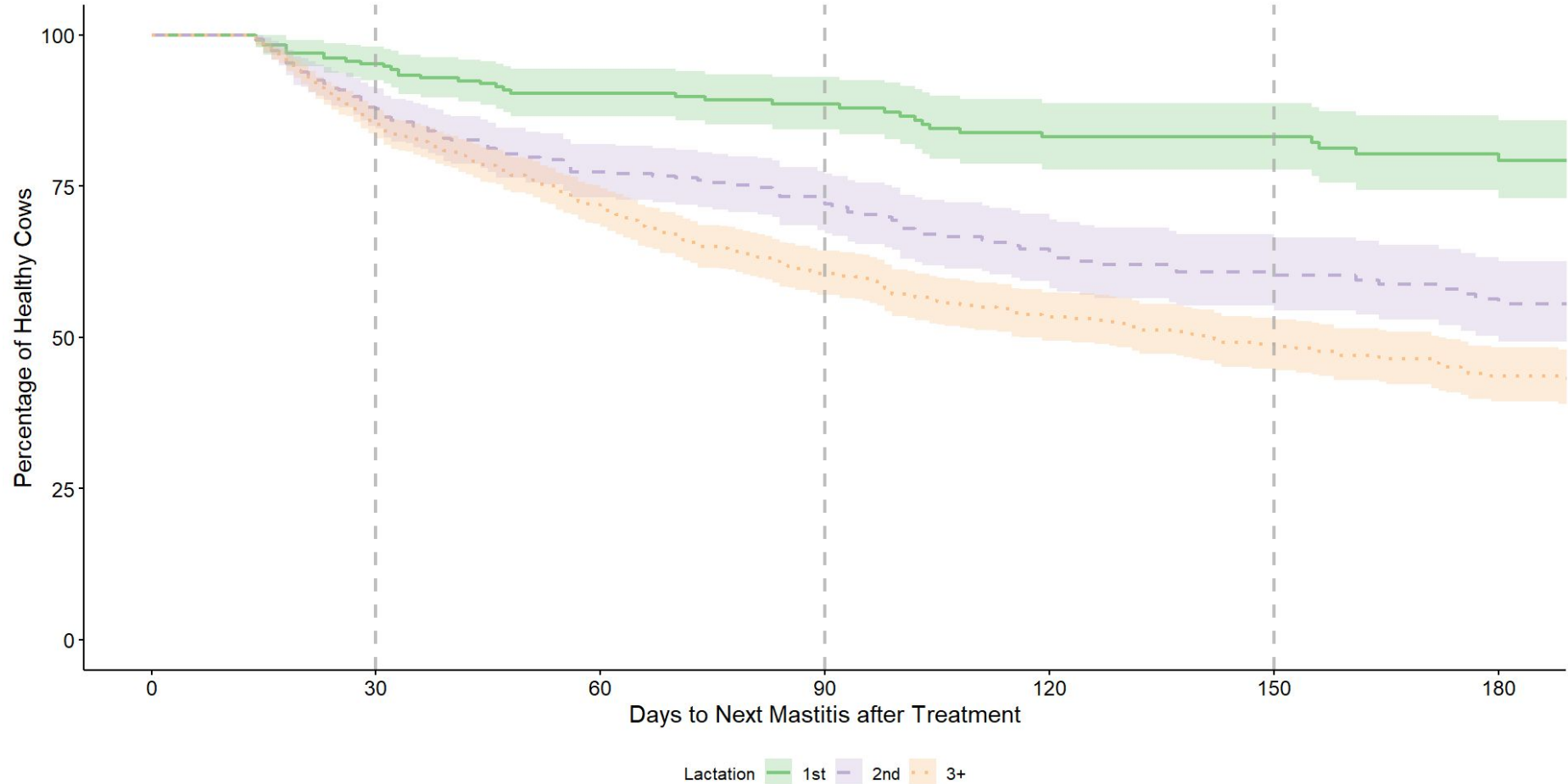


Table from above graph

Lactation	% Mastitis (Confidence Interval) at			
	90 Days	120 Days	150 Days	180 Days
1	11% (6.9%, 16%)	17% (11%, 22%)	17% (11%, 22%)	21% (14%, 27%)
2	28% (23%, 33%)	36% (30%, 42%)	40% (33%, 45%)	44% (37%, 51%)
3+	39% (36%, 43%)	47% (43%, 51%)	51% (47%, 55%)	56% (52%, 61%)



31-54% of cows are culled after 180 days

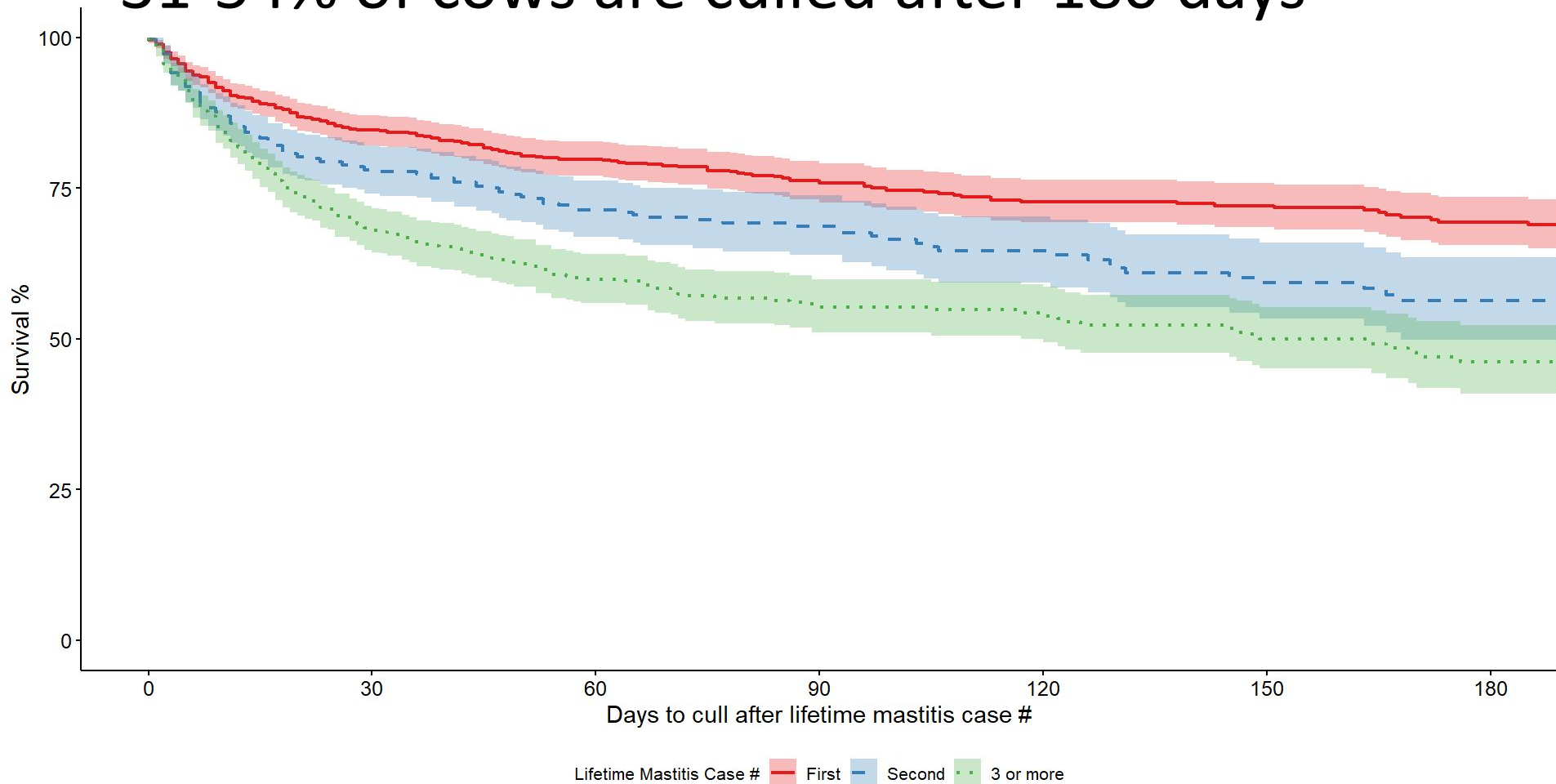


Table for above

Lifetime Mastitis History	% Culled (Confidence Interval) at		
	30 Days	120 Days	180 Days
1	15% (13%, 18%)	27% (24%, 31%)	31% (26%, 34%)
2	22% (18%, 26%)	35% (30%, 41%)	44% (36%, 50%)
3	32% (28%, 36%)	46% (41%, 51%)	54% (48%, 59%)

Treatment Outcomes

- AHV v. Antibiotics

Total cases 1953

AHV: 731 treated

Today: 344 treated

Spectramast: 638 treated

When considering all cases AHV is a bit worse

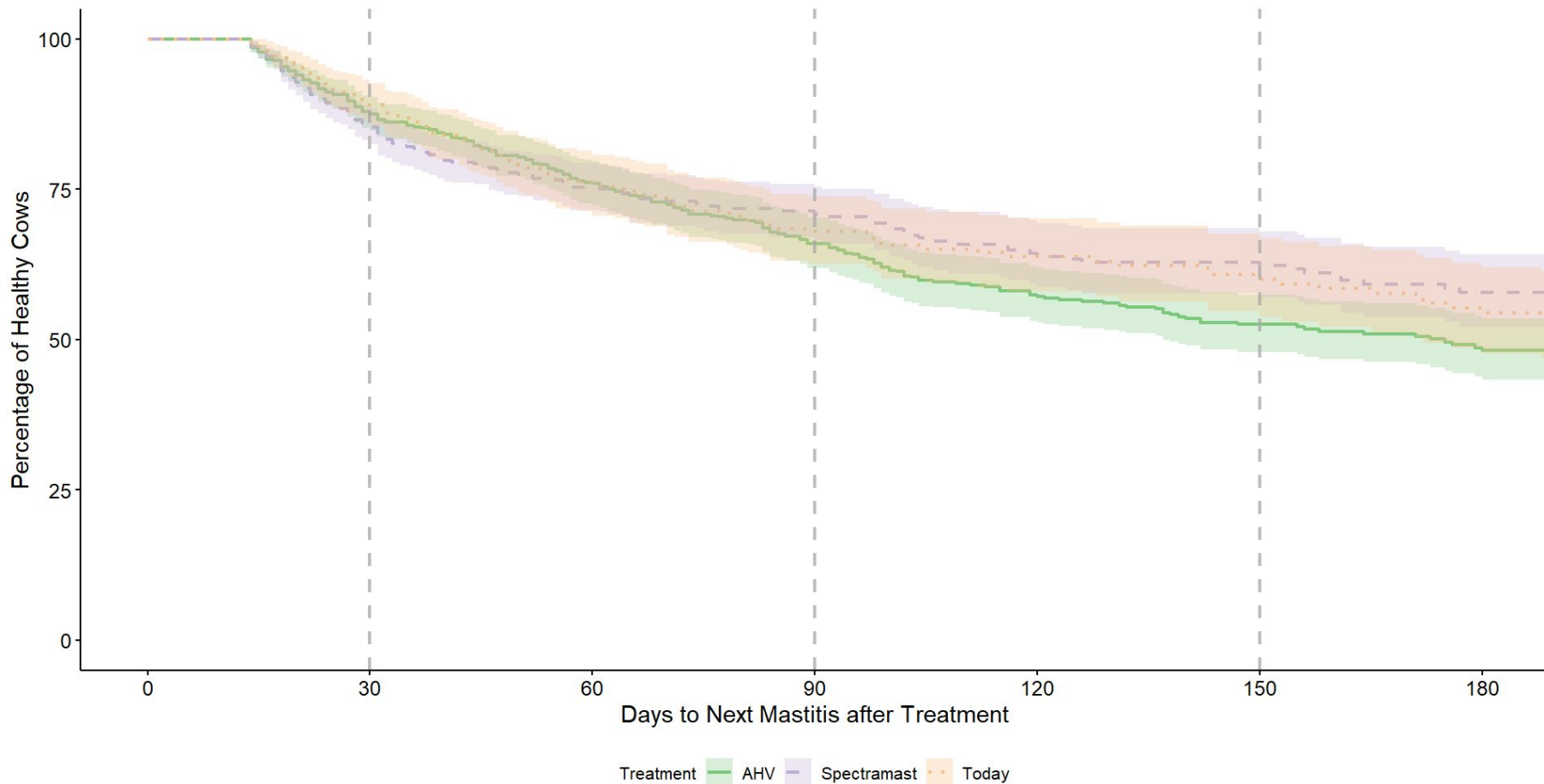
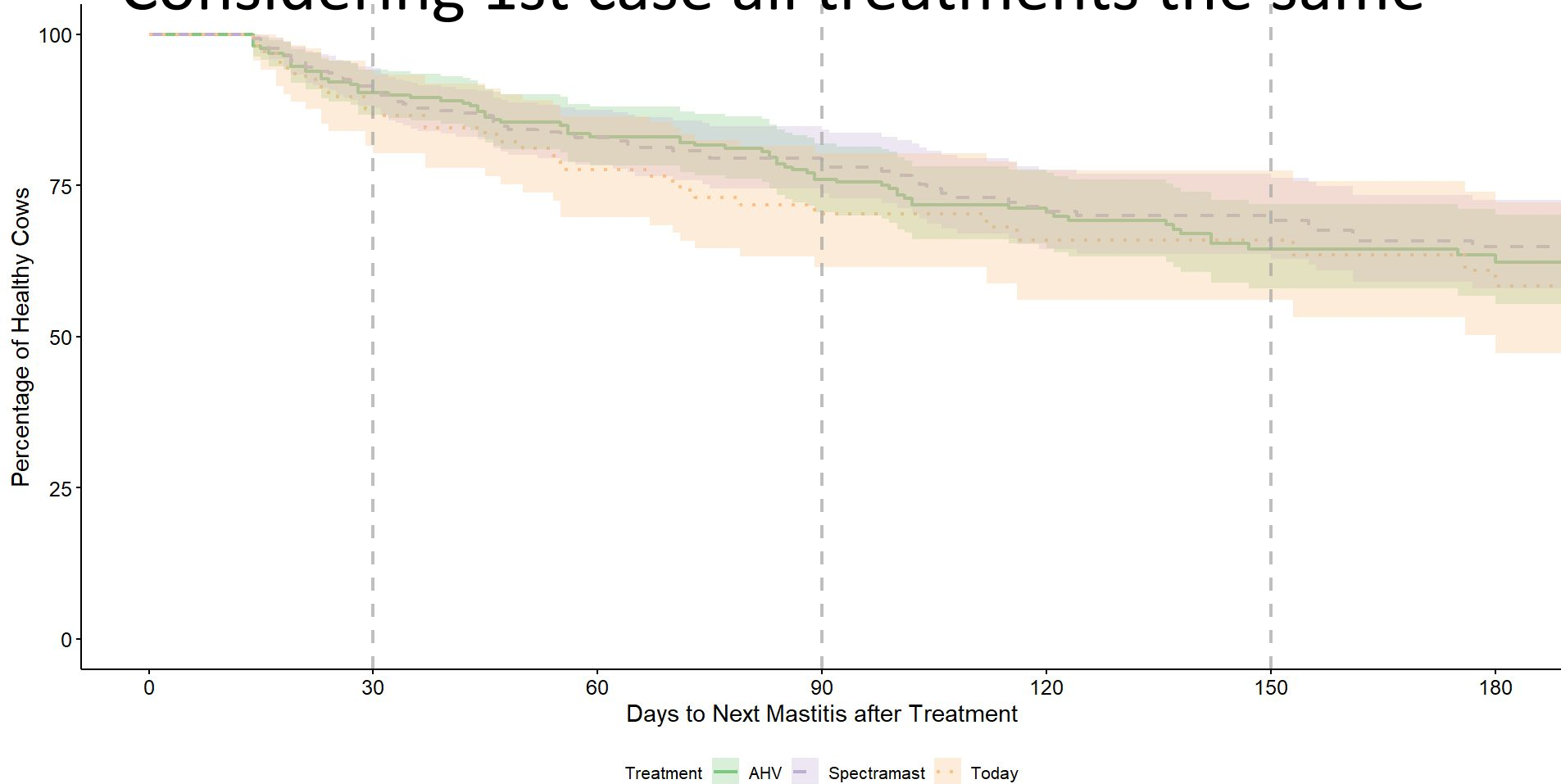


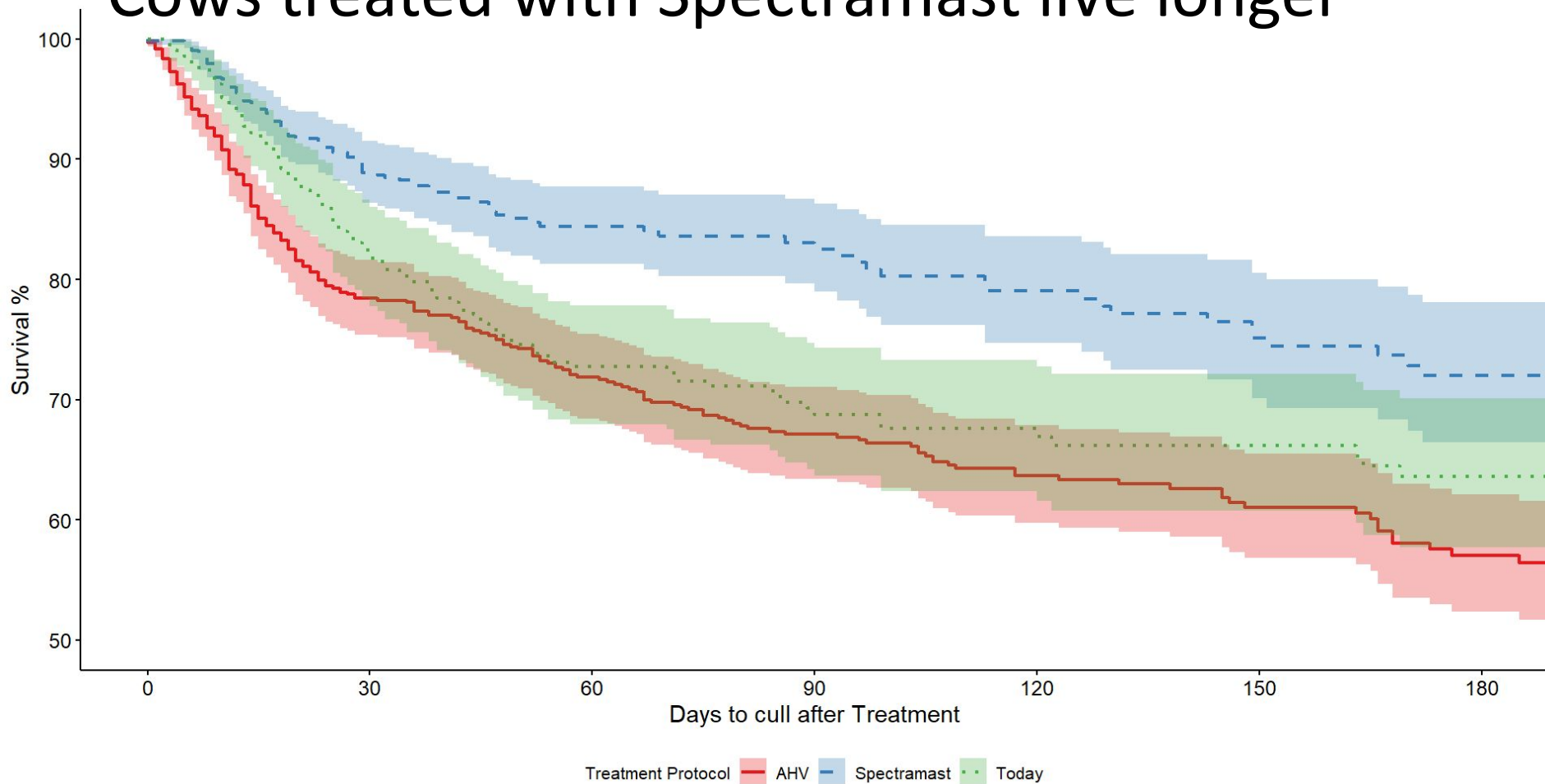
Table from above graph

Treatment	% Mastitis (Confidence Interval) at			
	90 Days	120 Days	150 Days	180 Days
AHV	34% (30%, 38%)	43% (38%, 47%)	48% (43%, 52%)	52% (46%, 57%)
Spectra	29% (25%, 33%)	36% (31%, 41%)	38% (32%, 43%)	42% (36%, 48%)
Today	32% (26%, 37%)	36% (30%, 42%)	40% (33%, 46%)	46% (38%, 52%)

Considering 1st case all treatments the same



Cows treated with Spectramast live longer



Tables for above

Treatment	% Culled (Confidence Interval) at		
	30 Days	120 Days	180 Days
AHV	22% (18%, 25%)	36% (32%, 40%)	43% (38%, 48%)
Spectra	11% (8.5%, 14%)	21% (16%, 25%)	28% (22%, 34%)
Today	18% (14%, 22%)	33% (27%, 38%)	36% (30%, 42%)

Bottom Line

AHV is worse even with crude analysis

Teat Health

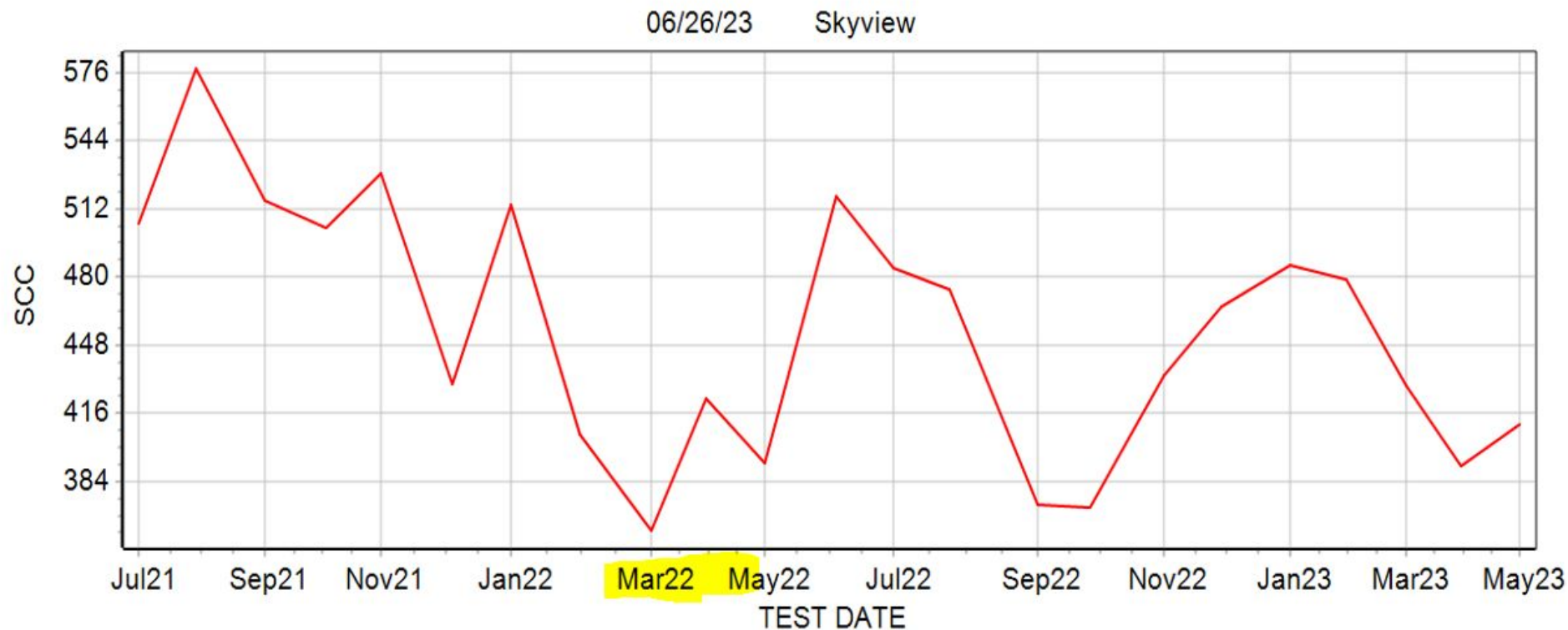
Selective Dry Cow Therapy

Spectramast Protocol (top) vs No Treats (bottom) - Log score and milk for 1st and 2nd test

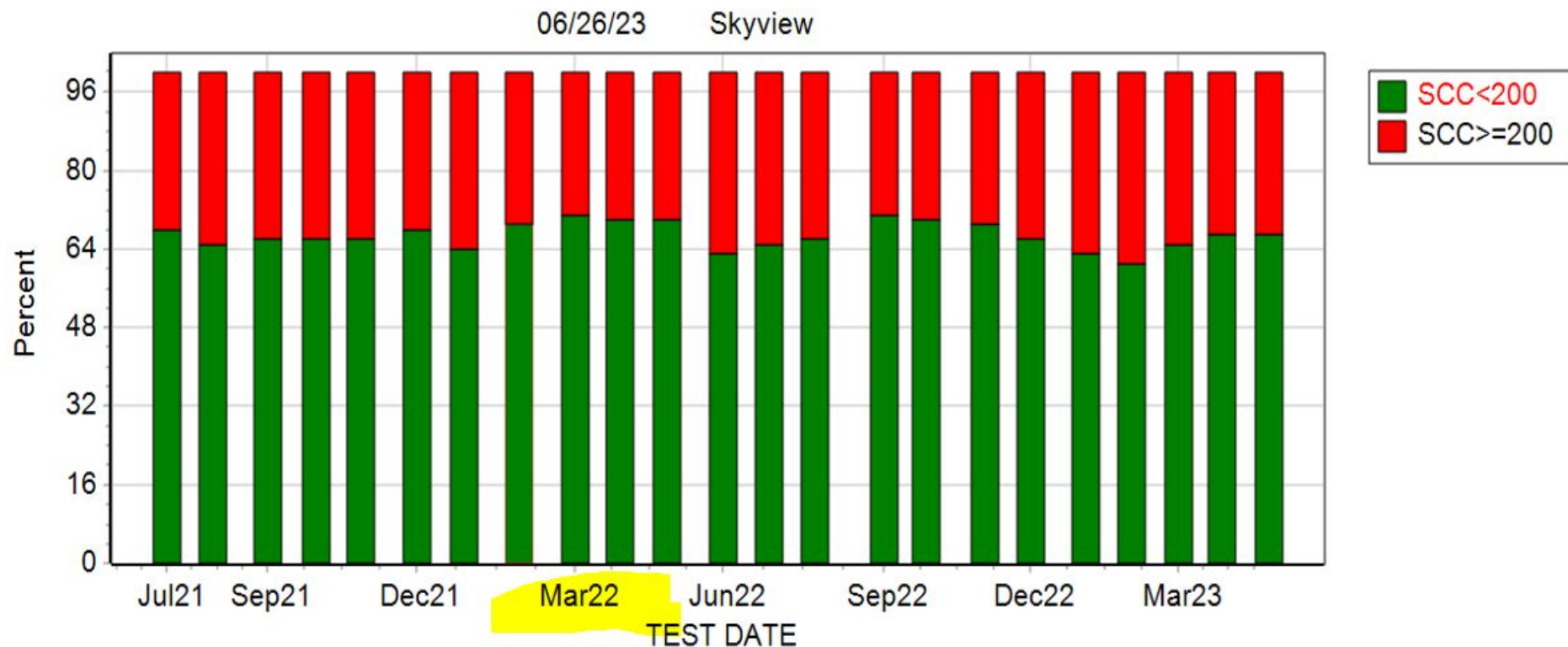
Count	v1ST \uparrow	v LOG1	v2NDMK	v LSC2
500	81	3.5	108	3.6

Count	v1STMK	v LOG1	v2NDMK	v LSC2
713	78	2.7	105	2.6

Has the average LGSCC increased over time for the entire herd while SDCT has been instituted?



Has the percent of infected cows increased over time for the entire herd while SDCT has been instituted?



Lameness

Need to get DD
under control

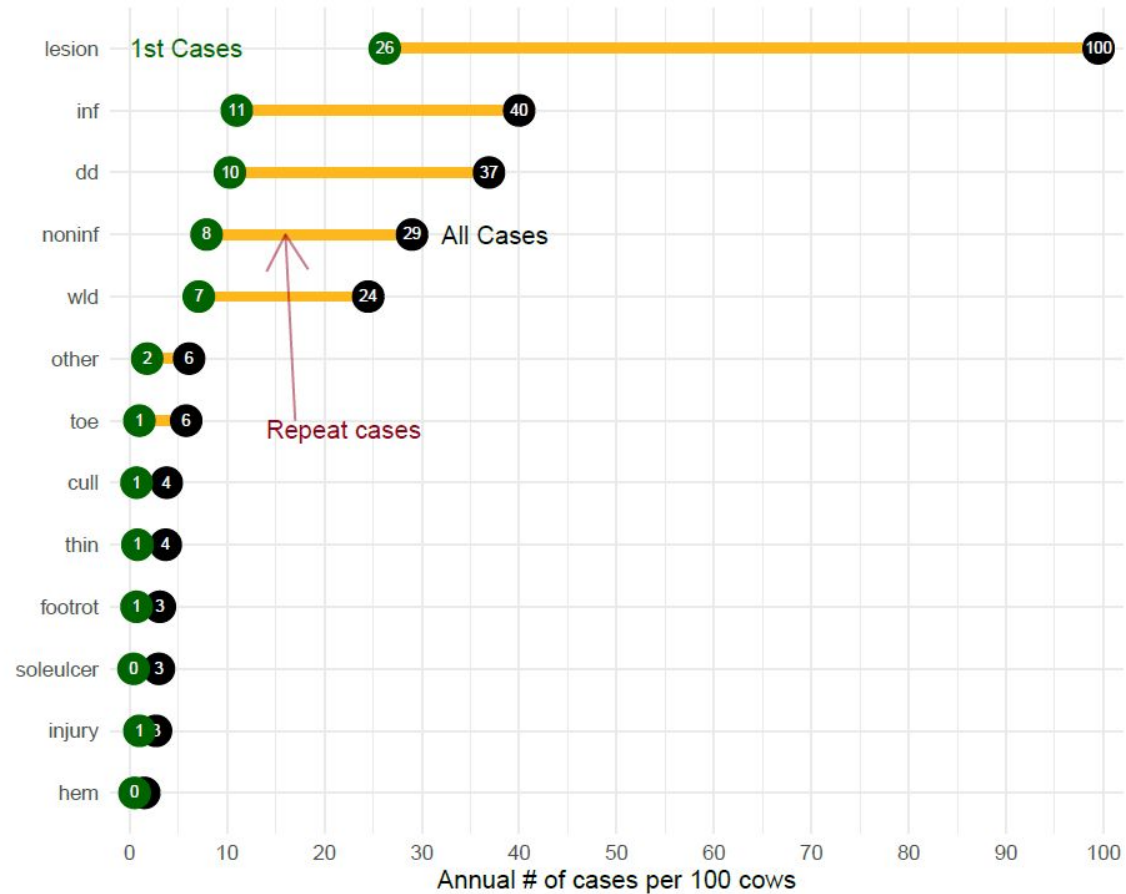


Figure 3: Majority of lesions are DD lesions and too many repeat. Note: Non-infectious = soleulcer and white line, Inf = footrot and DD, Toe = thin soles and toe ulcers, Other = uncommon lesions

66% of DD lesions repeat

Table 2: Much higher repeat % for DD compared to other lesions.

Farm	Footrot	DD	WLD	Sole Ulcer	Any Lesion
Skyview	28.6	66.2	38.1	18.1	50.2

WLD
> 20% leave by
180 days after
trimming
(8.3% if no
lesion)

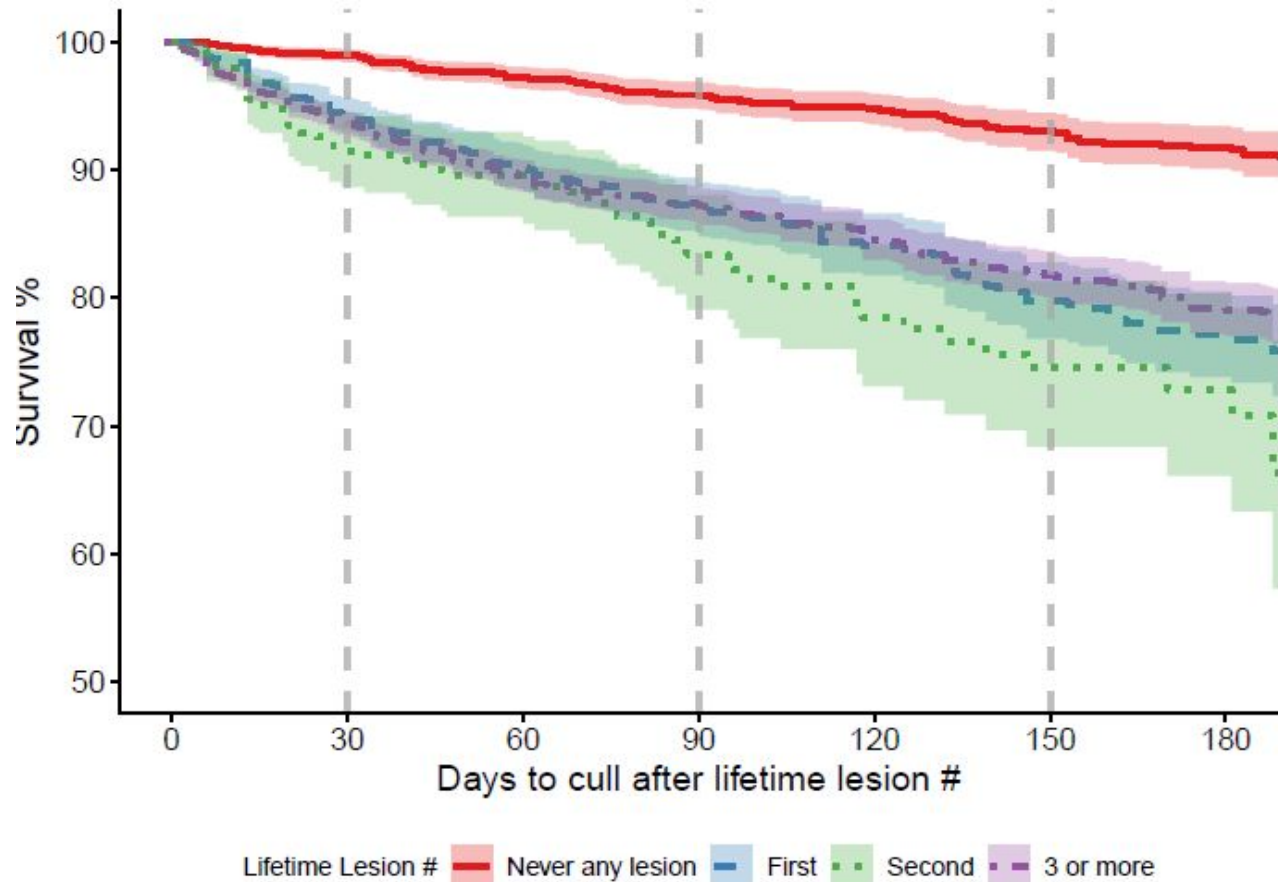


figure 8: Cows with lesions get culled faster and survival is only slightly worse for a repeated case.

DD
> 20%
leave by
180 days
after
trimming
(8.3% if no
lesion)

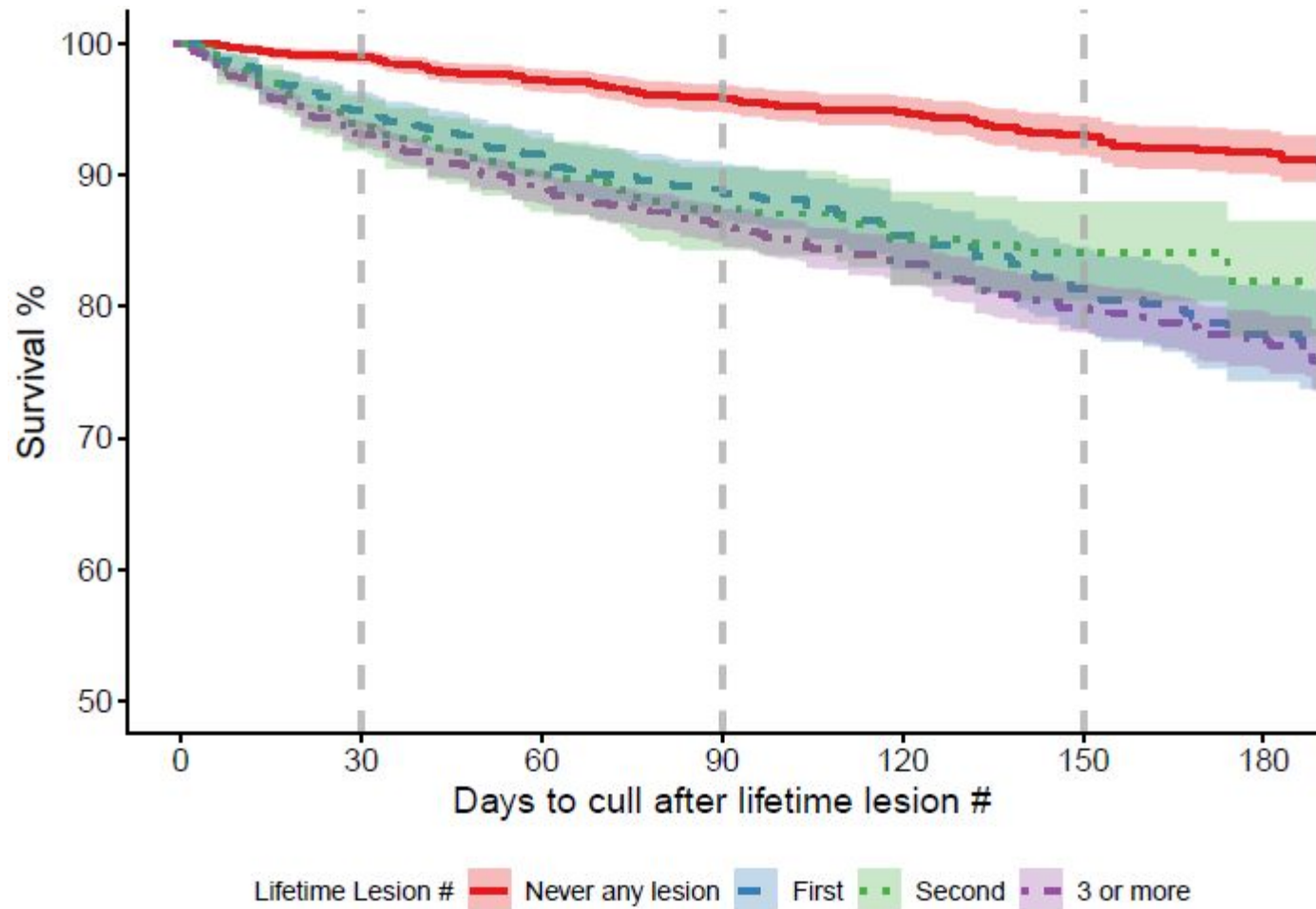
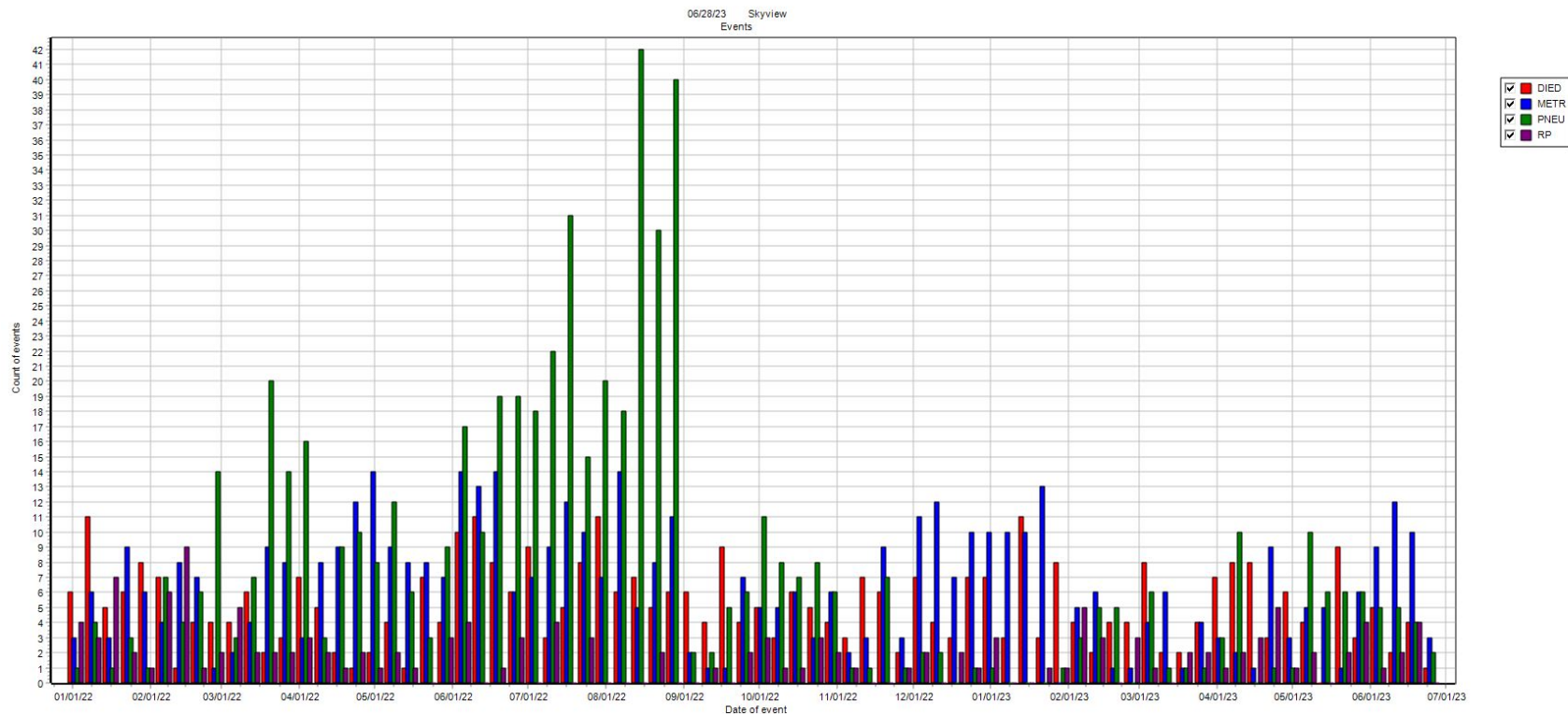


Figure 9: Cows with DD get culled faster and survival is slightly worse for each repeated case.

Transition/Disease

Egraph of events commonly using antibiotics

Changed to limit drug options September of 22



06/28/23 Skyview
EGRAPH

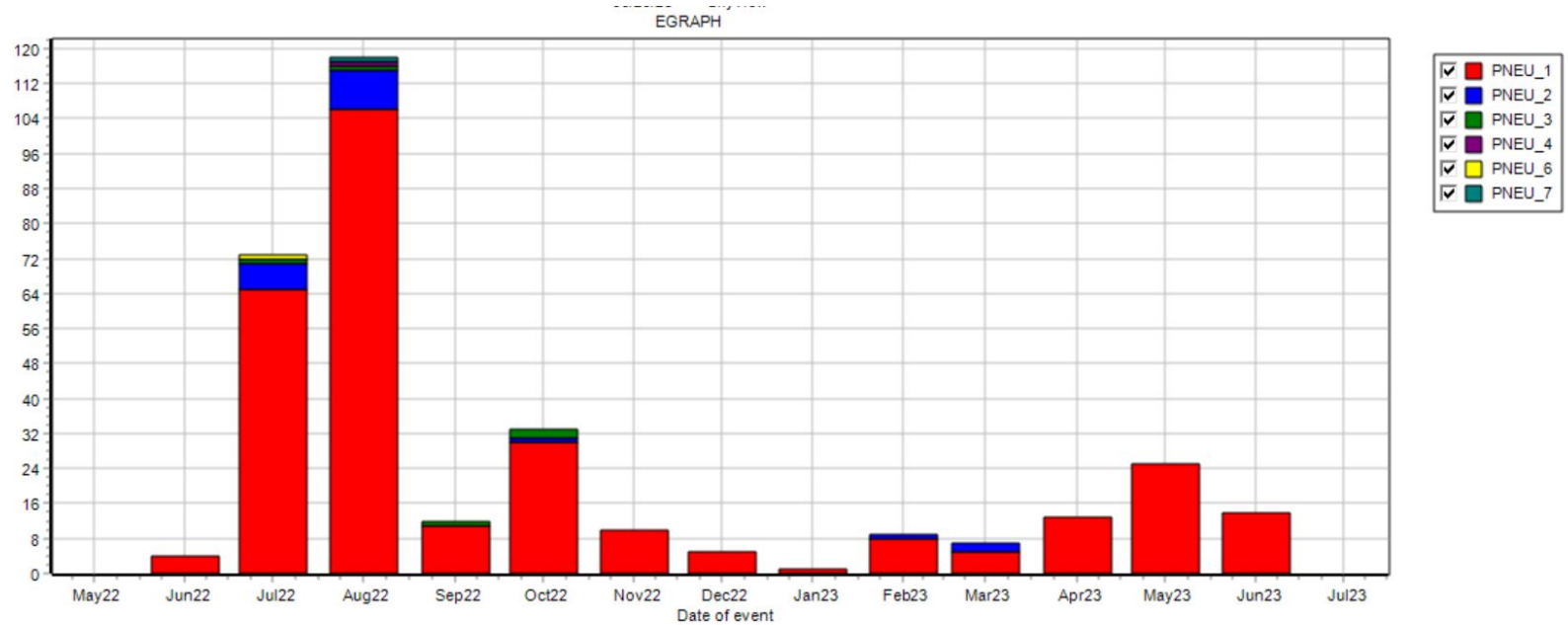
Count of events

Date of event

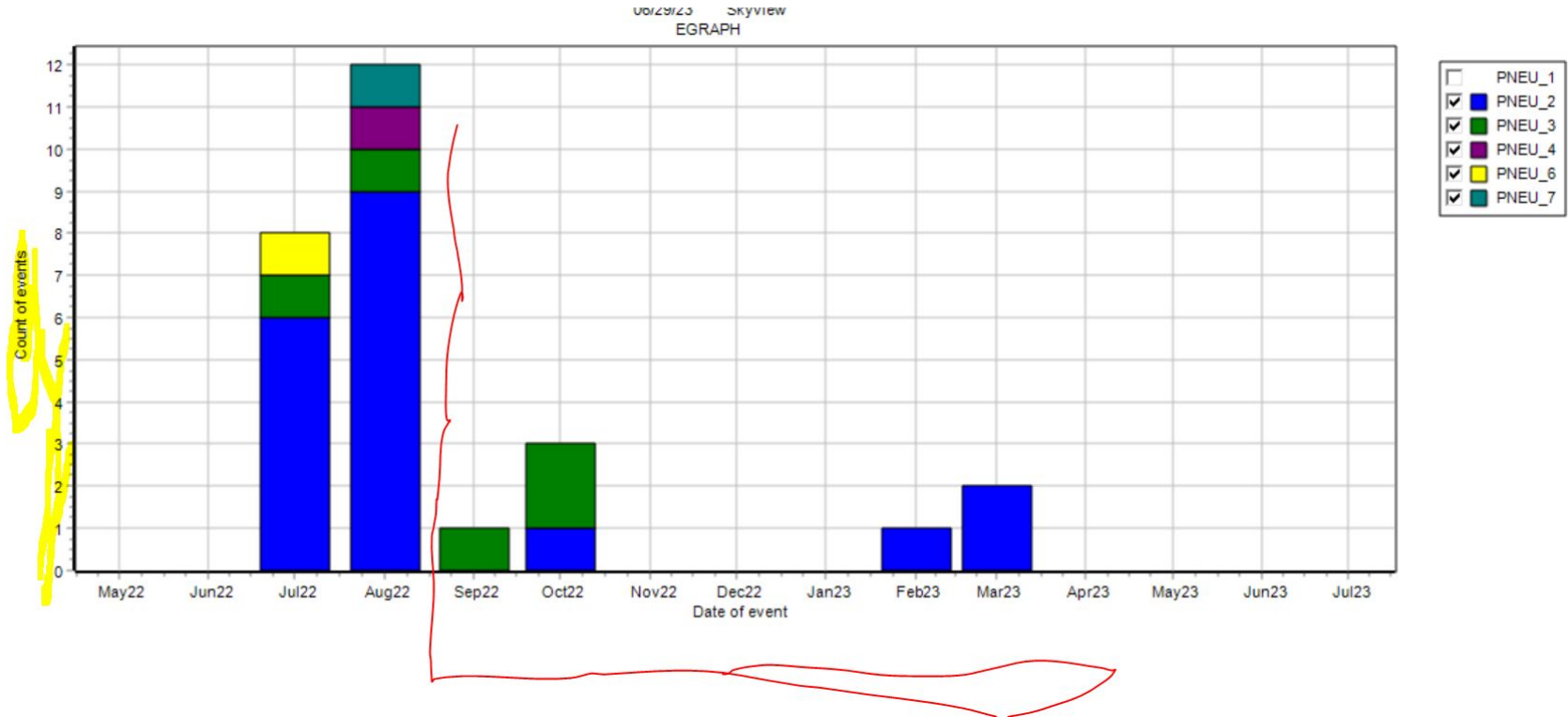
Legend:

- ✓ PolyFlex.22
- ✓ Ceftriax.22
- ✓ OXYTET.50
- ✓ PENICILLIN
- ✓ Banamine
- ✓ EXCEDE.17
- ✓ Polyflex.26
- ✓ Ceftriax.26
- ✓ Oxytet.59
- ✓ EXCEDE.20
- ✓ No Treat
- ✓ Norocilin

Most cows only treated once



Limited repeat pneumonia events since drug change

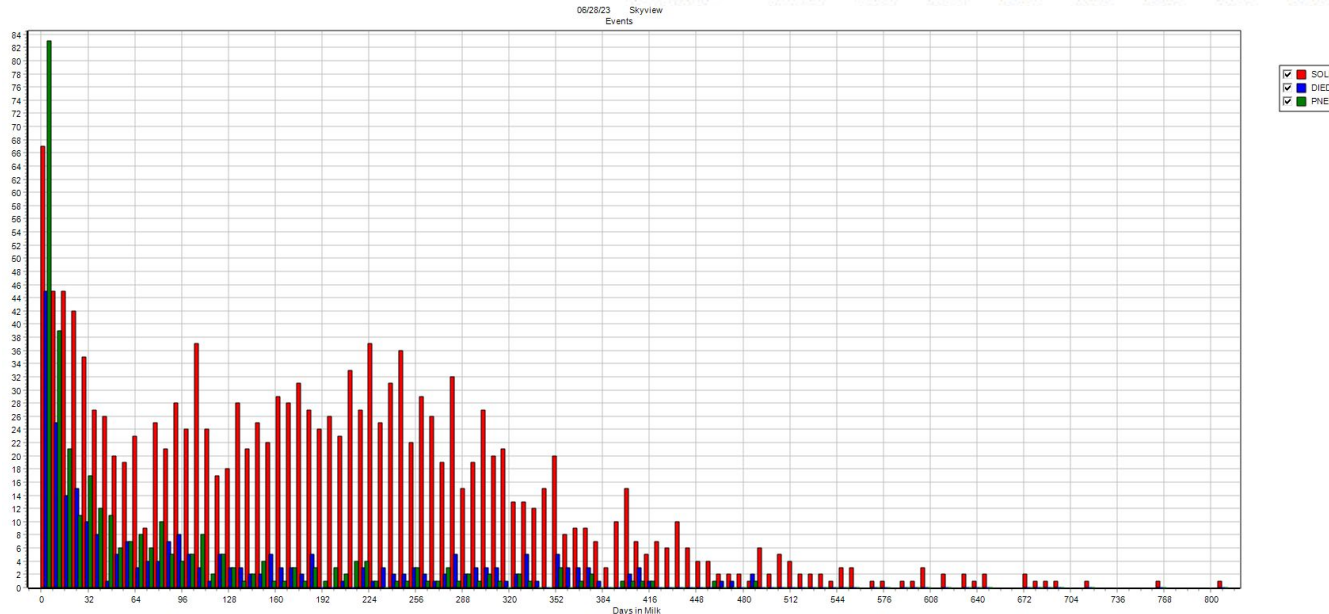


Events by DIM for last year

Lots leaving first 30 days

High spike in fresh cow pneu

Event	Total	<31	60	90	120	150	180	210	240	270	300	330	>330
SOLD	1497	208	108	83	119	98	110	110	132	126	91	84	228
DIED	268	104	24	17	20	14	14	6	7	10	12	10	30
MAST	2066	216	219	240	259	215	196	173	148	115	123	81	81
PNEU	326	159	45	31	20	12	9	9	9	7	6	6	13
TOTALS	4157	687	396	371	418	339	329	298	296	258	232	181	352



DA Rate

FDAT	FRESH	DA	68% CI
May22	302	7	2- 3
Jun22	334	4	1- 2
Jul22	327	4	1- 2
Aug22	323	5	1- 2
Sep22	390	5	1- 2
Oct22	352	7	1- 3
Nov22	323	7	1- 3
Dec22	349	13	3- 5
Jan23	385	13	3- 4
Feb23	264	6	2- 3
Mar23	296	3	1- 2
Apr23	404	16	3- 5
=====			
Total	4049	90	2- 2
Percent		2%	2- 2

Basically I don't trust the data from the rest of the events to really say what big problems are since lots of changes in employees over time

Early Lactation Milk Production by Lactation Group

SUM WMK2 WMK4 WMK8 PEAKD (peak dim) PEAKM (peak milk) 1STPJ (1st test projected 305) 305ME FOR LACT>0 BY LCTGP

By LCTGP	Pct	Count	Av WMK2	Av WMK4	Av WMK8	AvPEAKD	AvPEAKM	Av1STPJ	Av305ME
1	44	1541	54.1	66.6	76.1	78	80	21847	24869
2	25	872	78.0	98.0	102.4	55	106	24216	27244
3	30	1052	81.5	104.8	111.2	55	114	22432	26042
=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
Total	100	3465	68.4	85.9	93.4	65	97	22635	25841

Early Lactation Milk Production of *Heifers* by Quartiles (bottom vs top%)

SUM WMLK2 WMK4 WMK8 MILK PEAKD PEAKM 1STPJ FOR LACT=1 305ME>0 BY
305ME\Q4

By 305ME	Pct	Count	AvWMLK2	Av WMK4	Av WMK8	Av MILK	AvPEAKD	AvPEAKM	Av1STPJ
18910	25	334	64.2	57.0	64.8	53	66	60	19508
22870	25	334	72.0	65.3	73.3	68	83	76	21394
26310	25	334	71.5	70.0	79.7	73	89	87	22373
31380	25	334	75.0	75.9	86.8	80	92	98	24055
=====									
Total	100	1336	70.6	67.0	76.6	68	83	80	21847

How days in close up affects heifer milk production

SUM WMK2 WMK4 WMK8 PEAKD PEAKM 1STPJ 305ME FOR LACT=1
DINCUCOD1>0 BY COD1

Cod1: 10 = DINCUCOD1 1-9, 18= DINCUCOD1 10-24; 25= DINCUCOD1 >24

By COD1	Pct	Count	Av WMK2	Av WMK4	Av WMK8	AvPEAKD	AvPEAKM	Av1STPJ	Av305ME
10	27	330	52.9	64.5	75.4	70	76	21446	24328
18	68	834	54.6	68.5	78.0	78	82	21938	25256
25	5	64	58.0	72.7	83.1	72	89	23078	26971
=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
Total	100	1228	54.3	67.6	77.6	76	81	21866	25097

How long cows spend in closeup by lactation

SUM DINCUCU=10 DINCUCU=25 FOR DINCUCU>0 BY LCTGPP

DINCUCU	<10	10-24	>=25
LCTGPP=1	27% 330	68% 834	5% 64
LCTGPP=2	11% 90	74% 604	15% 123
LCTGPP=3	10% 98	81% 831	10% 100
Total	17% 518	74% 2269	9% 287

How DINCU affect cows by lactation group

By COD1	Pct	Count	Av WMK2	Av WMK4	Av WMK8	AvPEAKD	AvPEAKM	Av1STPJ	Av305ME
10	27	330	52.9	64.5	75.4	70	76	21446	24328
18	68	834	54.6	68.5	78.0	78	82	21938	25256
25	5	64	58.0	72.7	83.1	72	89	23078	26971
LCTGP 1	40	1228	54.3	67.6	77.6	76	81	21866	25097
10	11	90	75.5	94.1	97.2	52	97	23698	25591
18	74	604	79.0	99.2	103.2	55	106	24225	27232
25	15	123	77.1	97.2	103.9	57	110	24804	28605
LCTGP 2	27	817	78.3	98.4	102.7	55	106	24265	27277
10	10	98	76.7	99.5	103.9	52	104	21509	23739
18	81	831	82.3	105.5	111.5	55	114	22430	26040
25	10	100	80.3	105.3	113.8	56	118	23320	27900
LCTGP 3	33	1029	81.6	105.0	111.2	55	114	22443	26030
10	17	518	61.2	76.2	84.1	64	84	21841	24442
18	74	2269	71.2	90.1	97.1	64	101	22735	26082
25	9	287	74.0	94.9	103.2	60	109	23927	28022
=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
Total	100	3074	69.8	88.2	95.7	63	99	22708	26005