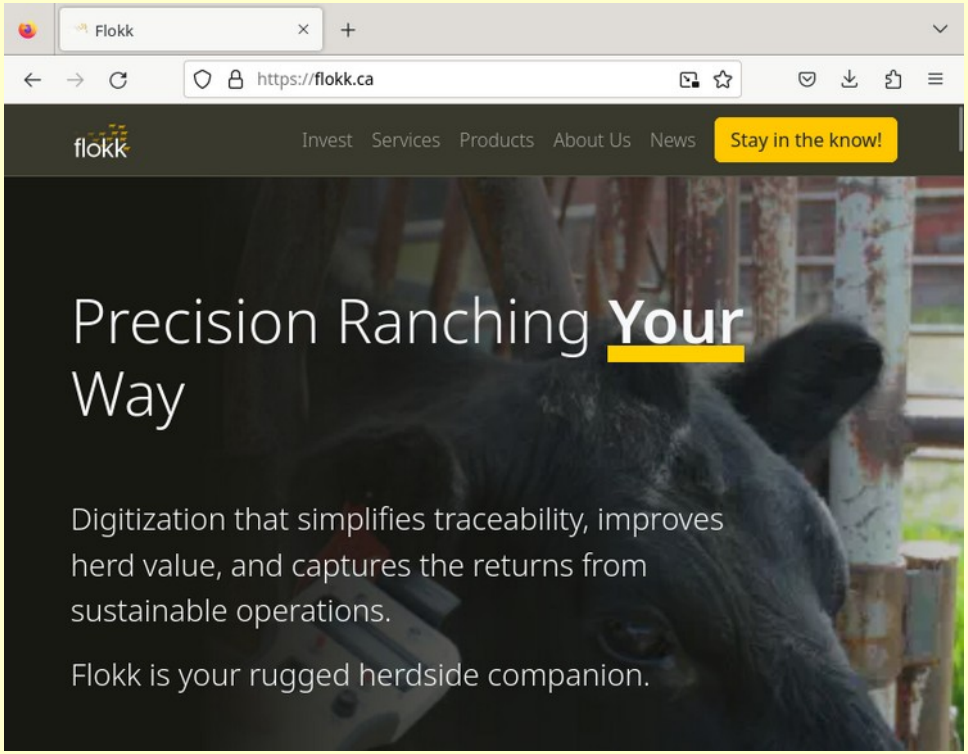
Working with Agricultural Data: Current Practices

Livestock

THE SIMPSON CENTRE.™
THOUGHT FOR FOOD.

Introduction

Mark Olson
Founder and President
Flokk Systems

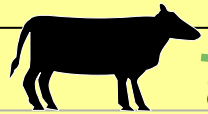


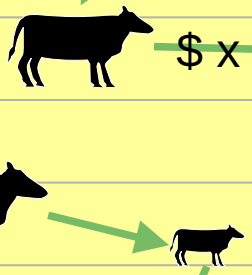
Flokk Systems:

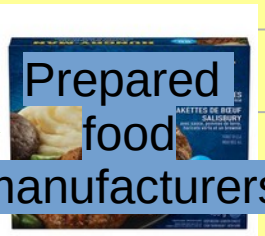
- Alberta AgTech startup
- Digitizing livestock herd traceability, sustainability, and management
- Focused on commercial cow/calf
- Two years testing complete
- Now commercializing

Beef production

Timeline	Cow/calf	Feedlot	Processor/cutter	Consumer
March April	Birth 88 lbs			
May June				
July August	+ 462 lbs			
September October				
November December	$ x 550 lbs			
January February		+ 750 lbs		
March April				
May June				
July August				
September October		$ x 1300 lbs		
November December				
January February				







save on foods
Retail
Quality Foods
Food services
$ x lbs
$ x lbs
Byproducts
$ x lbs
$ x lbs
Prepared food manufacturers

Maximizing livestock returns

Maximize revenue:

- Feeder/slaughter/carcass/retail weight
- Price
- Sustainability incentives

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Maximizing livestock returns

Minimize cost:

- Feed
  - lbs weight gained / cost feed consumed
- Maternal efficiency
- Labour
- Interventions
- Traceability submissions
- Capital

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Income: Maximizing weight gain

Timeline	Cow/calf	Feedlot	Processor/ cutter
March April			
May June			
July August			
September October			
November December			
January February			
March April			
May June			
July August			
September October			
November December			
January February			

Optimize feed

Feedback to cow/calf (in theory)

Supplement growth hormones

Select genetics
(replacement heifer selection)

Acquire genetics

Track feed

- identity
- date
- weight
- seed stock performance
- progeny gain performance
- feed offered
- feed attributes
- feed pricing
- interventions

Income: Sustainability certification

Timeline	Cow/calf	Feedlot	Processor/cutter	Consumer
March April	$			
May June				
July August				
September October				
November December	$$ x lbs			
January February				
March April				
May June				
July August				
September October				
November December		$$$ x lbs		
January February				

Farm Credit Canada

CRSB CERTIFIED BEEF SUSTAINABILITY

save on foods

Quality FOODS

$$$$ x lbs

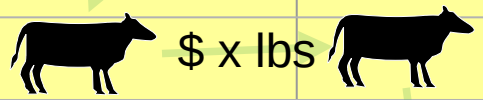
$$$$ x lbs

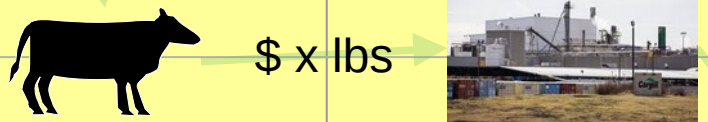
Animal Health Records

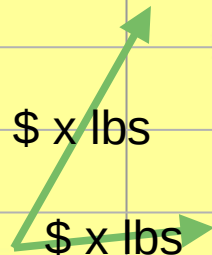
RECORD NAME	RELATED MODULE
VBP+ Simple Shipping Record	Animal Health, Transportation, Biosecurity
VBP+ Treatment Record - Group	Animal Health, Biosecurity
VBP+ Treatment Record - Individual	Animal Health, Biosecurity
VBP+ Suspect Broken Needle Record	Animal Health
VBP+ Toxin Exposure Record	Animal Health, Biosecurity
VBP+ Treatment Error Record	Animal Health
VBP+ Death/Euthanization Record	Animal Health, Biosecurity, Animal Care
VBP+ Sold/Purchased/Died Record	Animal Health, Biosecurity, Animal Care
VBP+ Beef Medications Record	Animal Health, Biosecurity
VBP+ Animal Movement Record	Animal Health, Biosecurity, Transportation
VBP+ Herbicide/Pesticide Use Record	Animal Health, Biosecurity, Transportation
VBP+ Herd Health Protocol Template	Animal Health, Biosecurity, Transportation
VBP+ Transfer of Care Template	Animal Health, Biosecurity, Transportation
VBP+ Animal Withdrawal Record Transfer Record	Animal Health, Biosecurity, Transportation
VBP+ Medicated Feed/Water Record	Animal Health, Biosecurity, Transportation
VBP+ Emergency Contact List	Animal Health, Biosecurity, Transportation
VBP+ Visitor Log	Animal Health, Biosecurity
VBP+ Extra Label Drug Use (ELDU) Prescription	Animal Health, Biosecurity
VBP+ Animal Health Product Checklist	Animal Health

Income: Sustainability assertion

Timeline	Cow/calf	Feedlot	Processor/cutter	Consumer
March April				
May June				
July August				
September October				
November December				
January February				
March April				
May June				
July August				
September October				
November December				
January February				







Income: Sustainability incentives

Timeline

March
April

May
June

July
August

September
October

November
December

January
February

March
April

May
June

July
August

September
October

November
December

January
February

Cow/calf

Feedlot

Bovaer

Acquire genetics

Select genetics

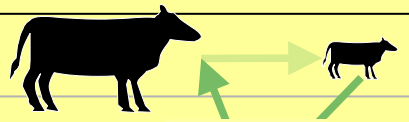
Optimize feed

Carbon market

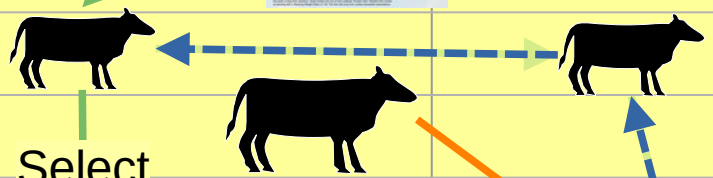
- identity
- date
- product administration
- feeding
- location
- practice

Costs: Maternal efficiency

Timeline	Cow/calf	Feedlot	Processor/cutter	Consumer
March April				
May June				
July August				
September October				
November December				
January February				
March April				
May June				
July August				
September October				
November December				
January February				

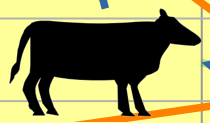


Acquire genetics

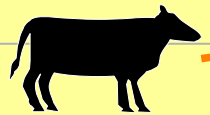


Select genetics

Pregnancy check
(cull on open (not pregnant))



Cull
age, injury, behaviour



- identity
- age
- progeny gain performance
- pregnancy test results
- calf performance
- animal history
- carcass utilization

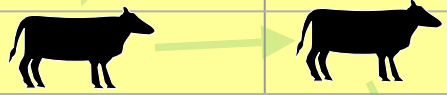
Retail to producer feedback
(in theory)

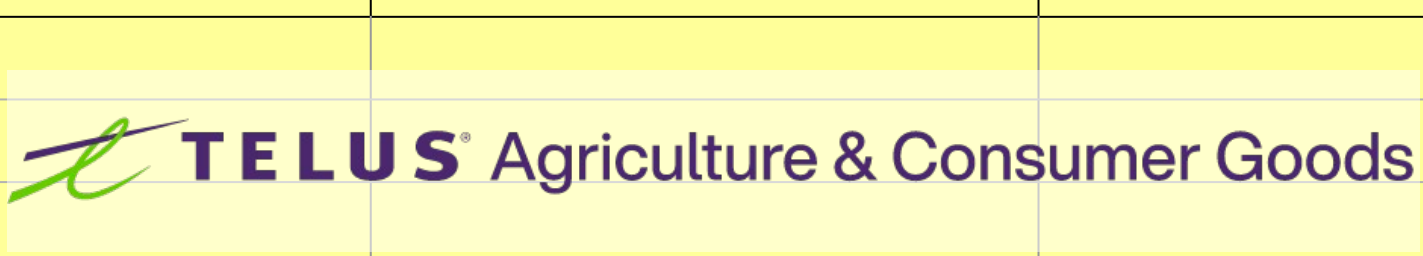
save on foods

Quality FOODS

Costs: Labour

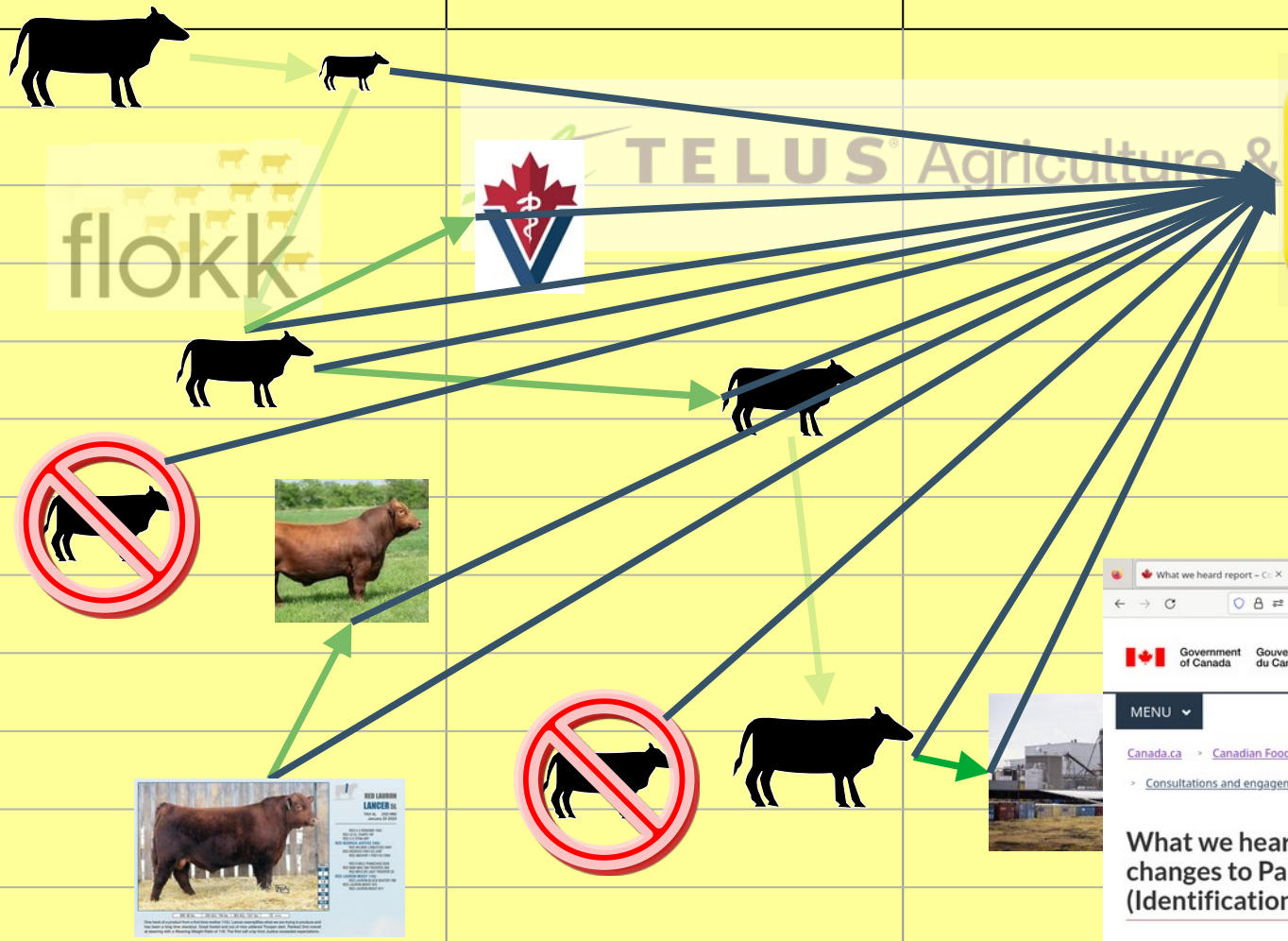
Timeline	Cow/calf	Feedlot	Processor/cutter	Consumer
March April				
May June				
July August				
September October				
November December				
January February				
March April				
May June				
July August				
September October				
November December				
January February				





Cost: Traceability submissions

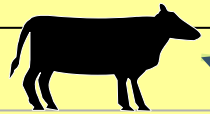
Timeline	Cow/calf	Feedlot	Processor/cutter	
March April				
May June				
July August				
September October				
November December				
January February				
March April				
May June				
July August				
September October				
November December				
January February				



- identity
- date
- location
- event

Costs: Interventions

Timeline	Cow/calf	Feedlot	Processor/cutter	
March April				
May June				
July August				
September October				
November December				
January February				
March April				
May June				
July August				
September October				
November December				
January February				

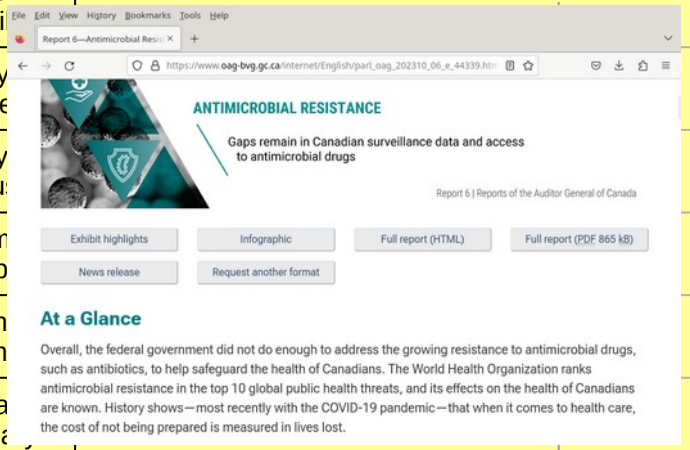


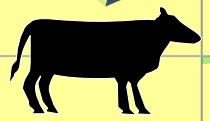
Veterinary services

Antimicrobial resistance management

Veterinarian Client Patient Relationship (VCPR)

- identity
- date
- indication
- product
- dosage





Traceability submissions

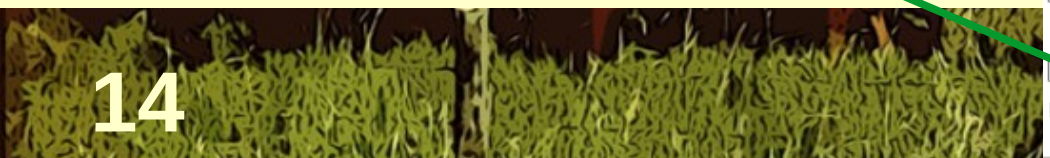
Animal inventory

Interventions
- Vaccinations
- Antibiotic administrations

Animal events
- Illness
- Injury
- Death

Pregnancy check results

Animal weights



/media/olsonm/FLOKK/

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calvingtags.bak	19 bytes	backup file	Today
calvingtags.csv	19 bytes	CSV document	Today
CLTS_IN-HERD_ID.csv	16 bytes	CSV document	2022-10-19
CLTS_IN-HERD_ID.xlsx	8.9 KiB	Microsoft Excel Worksheet	Today
CLTS_IN-HERD_ID.xlsx.bak	8.9 KiB	backup file	2024-03-15
CLTS_MOVEOUT.csv	572 bytes	CSV document	2023-06-16
flokk.ini	1.6 KiB	plain text document	Today
flokk.ini.bak	1.6 KiB	backup file	Today
flokk.xlsx	27.3 KiB	Microsoft Excel Worksheet	Today
Flokk menu overview.pdf	72.1 KiB	PDF document	2023-03-30
Flokk user reference manual.pdf	857.2 KiB	PDF document	2023-03-30
GETTING STARTED.pdf	2.2 MiB	PDF document	2023-03-30
herd.csv	15.6 KiB	CSV document	Today
herd.csv.bak	15.6 KiB	backup file	Today
herd_archive.csv	217 bytes	CSV document	2023-06-16
history.csv	144.7 KiB	CSV document	2024-03-11
history.csv.bak	91.9 KiB	backup file	2024-03-11
history_archive.csv	1.1 KiB	CSV document	2023-06-16
plates.bak	35 bytes	backup file	2023-06-16
plates.txt	35 bytes	plain text document	2024-03-11
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premises.csv	73 bytes	CSV document	Today
products.bak	55 bytes	backup file	Today
products.csv	55 bytes	CSV document	Today
weights.bak	4.4 KiB	backup file	Today
weights.csv	4.4 KiB	CSV document	Today
WHAT IS IN THESE FILES.pdf	38.3 KiB	PDF document	2023-03-30

Animal weights: weights.csv

File Edit View Insert Format Styles Sheet Data Tools Window Help

A1 | Hang_tag

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Hang_tag	Dam	Unit	Birth_date	Birth_weight	2018-06-15	2018-11-15	2019-06-05	2019-11-05	2020-06-12	2020-11-09	2023-06-16	2023-08-02	Average Daily Gain
2	Yel 100B	Yel 33Y	lb	2014-03-29									1307	
3	Yel 103F	Yel 104R	lb	2018-02-24	84	298	573							1.85
4	Yel 105F	Yel 32R	lb	2018-03-05	84	313	675							2.32
5	Yel 105H	Yel 91X	lb	2020-03-09	79					269	606			2.15
6	Yel 10J	Yel 9W	lb	2021-02-15	88									
7	Yel 113F	Yel 43Y	lb	2018-02-13	84	388	701							2.24
8	Yel 116G	Yel 118E	lb	2019-02-20	84			295	615					2.06
9	Yel 117G	Yel 73X	lb	2019-02-14	82			322	597					1.95
10	Yel 11J	Yel 7U	lb	2021-02-17	86									
11	Yel 122H	Yel 102A	lb	2020-02-02	79					401	710			2.24
12	Yel 123H	Yel 1X	lb	2020-02-23	82					331	575			1.9
13	Yel 127G	Yel 73Z	lb	2019-03-30	84			240	560					2.16
14	Yel 12G	Yel 78A	lb	2019-03-21	82			254	633					2.41
15	Yel 12J	Yel 7T	lb	2021-02-18	86									
16	Yel 133G	Yel 62T	lb	2019-02-09	79			357	719					2.38

weights

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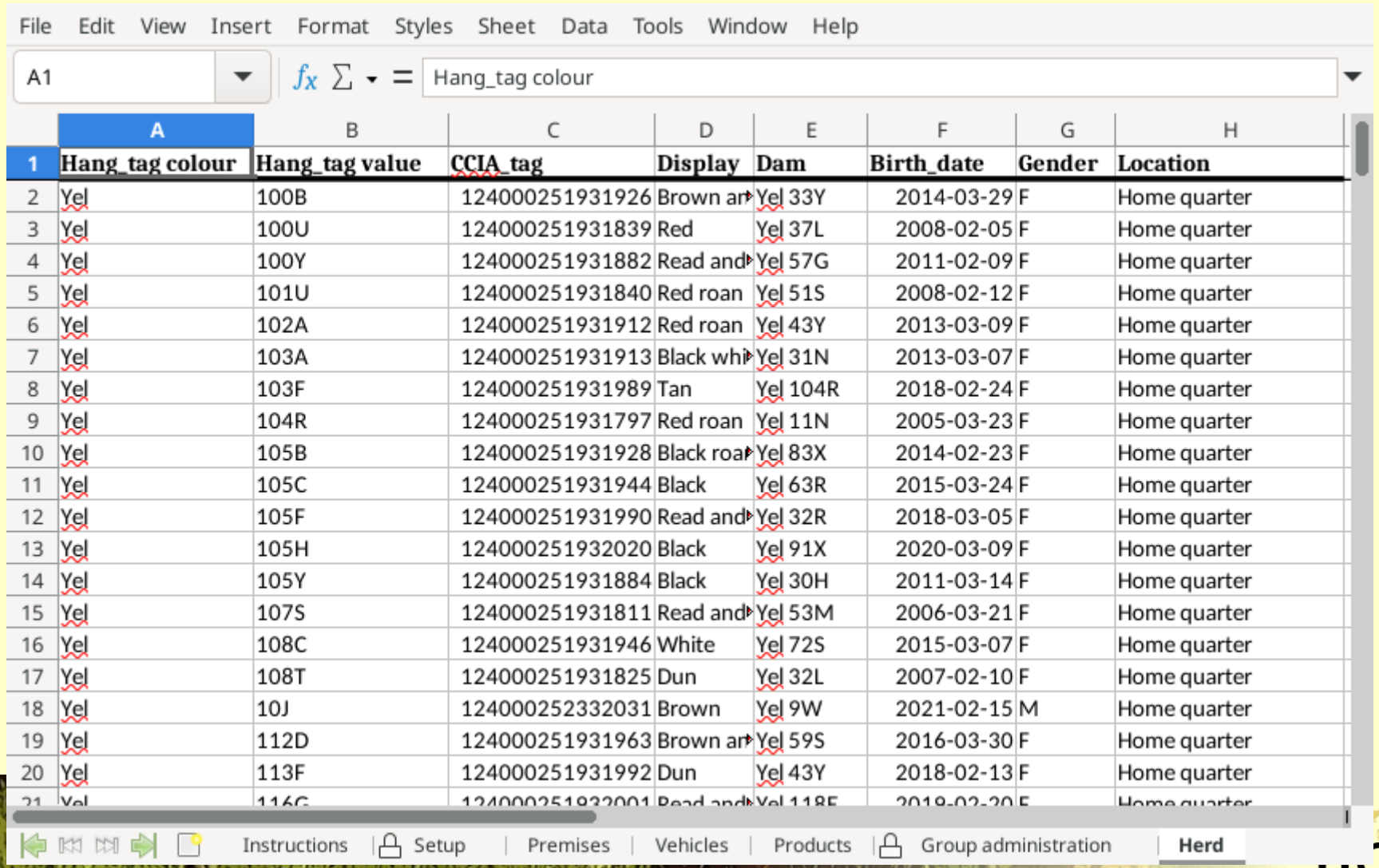
Animal inventory: flokk.xlsx



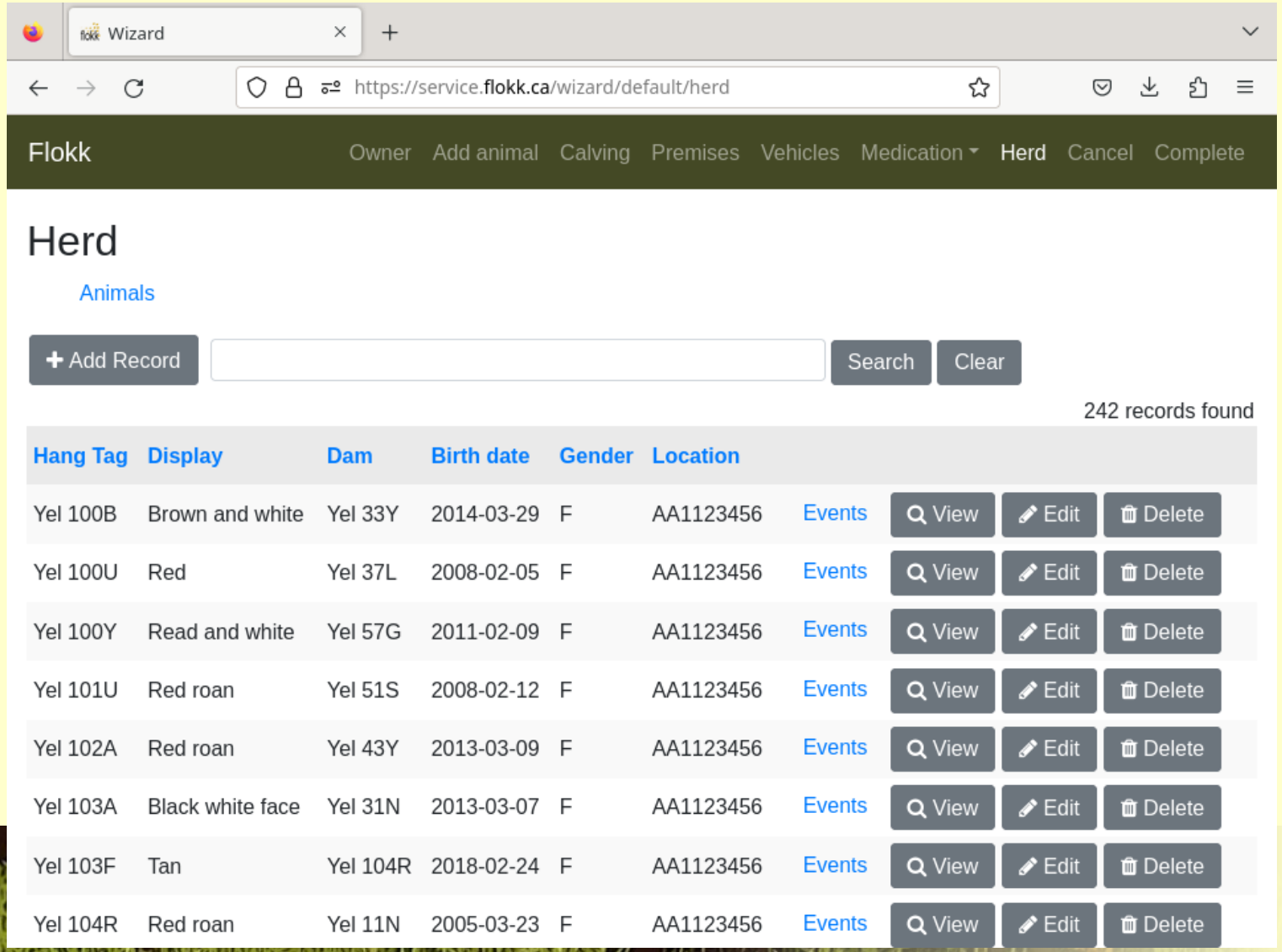
File Edit View Insert Format Styles Sheet Data Tools Window Help

A1 | Hang_tag colour

	A	B	C	D	E	F	G	H
1	Hang_tag colour	Hang_tag value	CCIA_tag	Display	Dam	Birth_date	Gender	Location
2	Yel	100B	124000251931926	Brown an	Yel 33Y	2014-03-29	F	Home quarter
3	Yel	100U	124000251931839	Red	Yel 37L	2008-02-05	F	Home quarter
4	Yel	100Y	124000251931882	Read and	Yel 57G	2011-02-09	F	Home quarter
5	Yel	101U	124000251931840	Red roan	Yel 51S	2008-02-12	F	Home quarter
6	Yel	102A	124000251931912	Red roan	Yel 43Y	2013-03-09	F	Home quarter
7	Yel	103A	124000251931913	Black whi	Yel 31N	2013-03-07	F	Home quarter
8	Yel	103F	124000251931989	Tan	Yel 104R	2018-02-24	F	Home quarter
9	Yel	104R	124000251931797	Red roan	Yel 11N	2005-03-23	F	Home quarter
10	Yel	105B	124000251931928	Black roa	Yel 83X	2014-02-23	F	Home quarter
11	Yel	105C	124000251931944	Black	Yel 63R	2015-03-24	F	Home quarter
12	Yel	105F	124000251931990	Read and	Yel 32R	2018-03-05	F	Home quarter
13	Yel	105H	124000251932020	Black	Yel 91X	2020-03-09	F	Home quarter
14	Yel	105Y	124000251931884	Black	Yel 30H	2011-03-14	F	Home quarter
15	Yel	107S	124000251931811	Read and	Yel 53M	2006-03-21	F	Home quarter
16	Yel	108C	124000251931946	White	Yel 72S	2015-03-07	F	Home quarter
17	Yel	108T	124000251931825	Dun	Yel 32L	2007-02-10	F	Home quarter
18	Yel	10J	124000252332031	Brown	Yel 9W	2021-02-15	M	Home quarter
19	Yel	112D	124000251931963	Brown an	Yel 59S	2016-03-30	F	Home quarter
20	Yel	113F	124000251931992	Dun	Yel 43Y	2018-02-13	F	Home quarter
21	Yel	116G	124000251932001	Read and	Yel 118E	2019-02-20	F	Home quarter

Instructions | Setup | Premises | Vehicles | Products | Group administration | Herd

Animal inventory: flokk.ca/wizard



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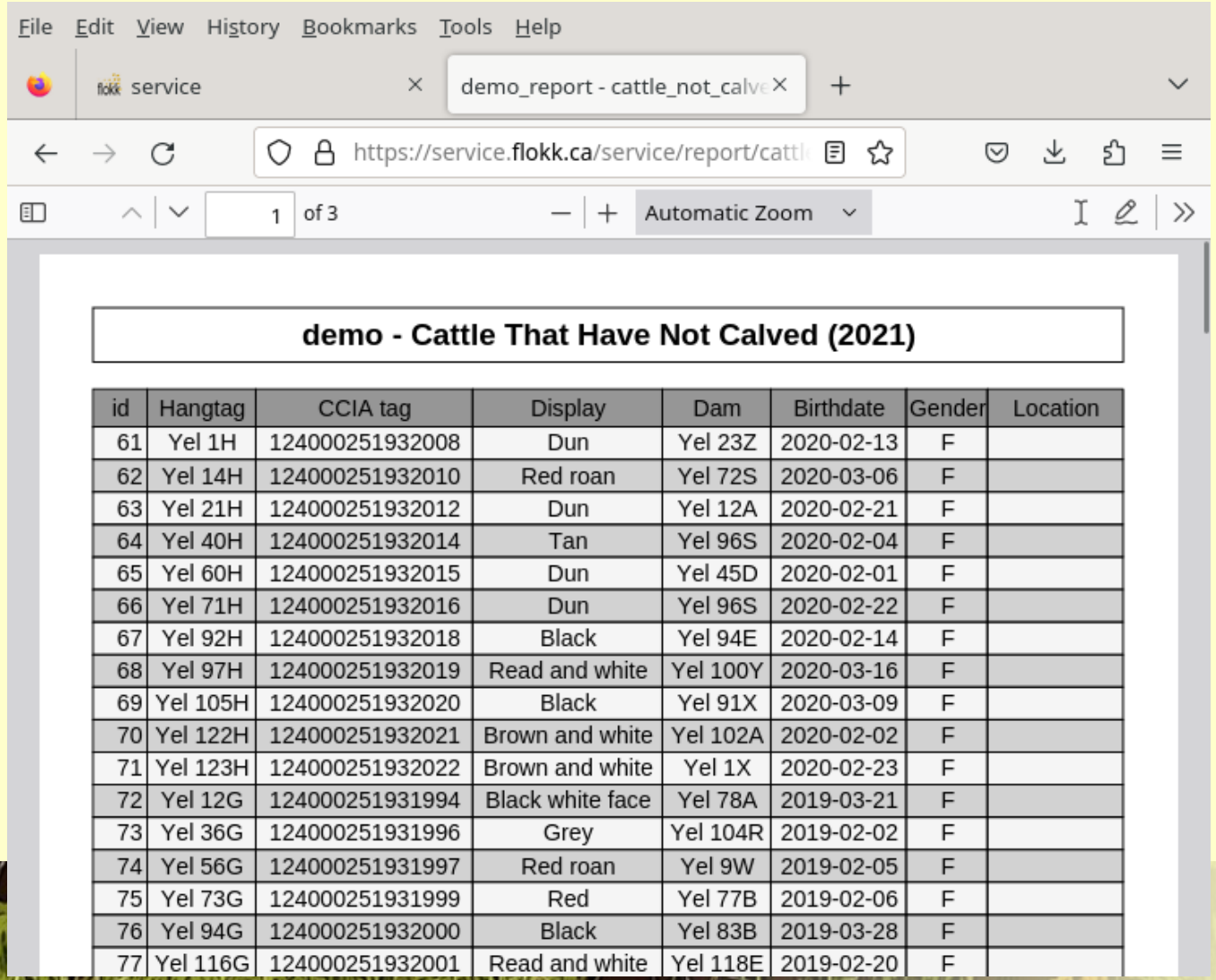
Analytics: flokk.ca/services



demo - Cattle That Have Not Calved (2021)

id	Hangtag	CCIA tag	Display	Dam	Birthdate	Gender	Location
61	Yel 1H	124000251932008	Dun	Yel 23Z	2020-02-13	F	
62	Yel 14H	124000251932010	Red roan	Yel 72S	2020-03-06	F	
63	Yel 21H	124000251932012	Dun	Yel 12A	2020-02-21	F	
64	Yel 40H	124000251932014	Tan	Yel 96S	2020-02-04	F	
65	Yel 60H	124000251932015	Dun	Yel 45D	2020-02-01	F	
66	Yel 71H	124000251932016	Dun	Yel 96S	2020-02-22	F	
67	Yel 92H	124000251932018	Black	Yel 94E	2020-02-14	F	
68	Yel 97H	124000251932019	Read and white	Yel 100Y	2020-03-16	F	
69	Yel 105H	124000251932020	Black	Yel 91X	2020-03-09	F	
70	Yel 122H	124000251932021	Brown and white	Yel 102A	2020-02-02	F	
71	Yel 123H	124000251932022	Brown and white	Yel 1X	2020-02-23	F	
72	Yel 12G	124000251931994	Black white face	Yel 78A	2019-03-21	F	
73	Yel 36G	124000251931996	Grey	Yel 104R	2019-02-02	F	
74	Yel 56G	124000251931997	Red roan	Yel 9W	2019-02-05	F	
75	Yel 73G	124000251931999	Red	Yel 77B	2019-02-06	F	
76	Yel 94G	124000251932000	Black	Yel 83B	2019-03-28	F	
77	Yel 116G	124000251932001	Read and white	Yel 118E	2019-02-20	F	

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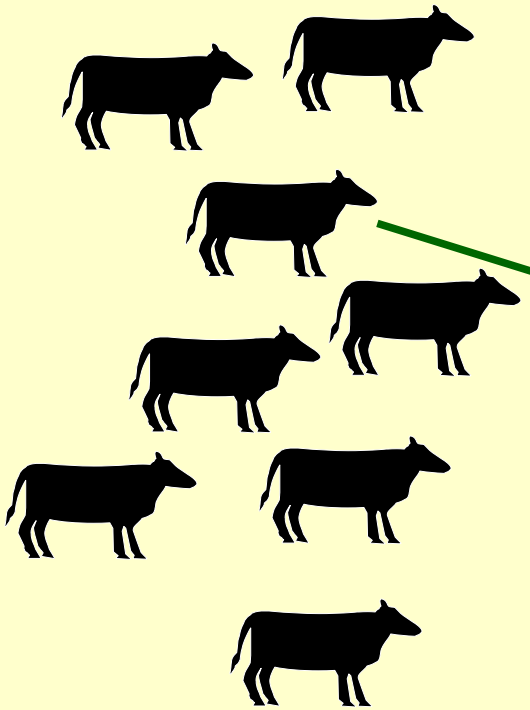
Connecting the Herd



AgExpert

CLTS

Methane offset markets

VBP+ VERIFIED BEEF PRODUCTION PLUS

Canadian Angus

Canadian Charolais Association

Simmental Canadian Simmental Association

Canadian Hereford Association

TheoryMesh

abacusbio.

LIS eManifest

TRUSTBIX

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Machine learning opportunities

Feeder calf marketing

- Comprehensive animal history and immutable animal weight
- Optimize for current market demand

Genomic supported replacement heifer selection

- Correlate performance attributes against gene sequence
- Use to select replacement heifers and bulls to achieve desired performance

Antimicrobial resistance management

- Record and report every indication and administration
- Manage/reward by exception
- Restore farm retailer distribution of antibiotics

Authoritative ownership without physical alteration (branding)

- Extend CLTS
- Assert legitimacy of possession through provenance of CCIA tag

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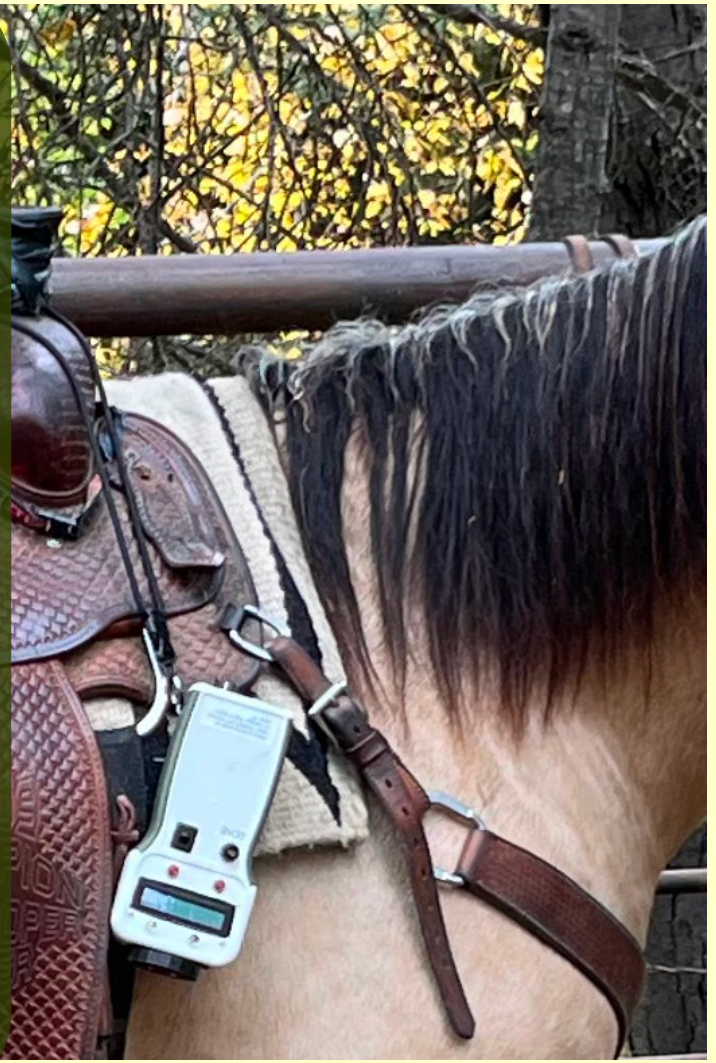
Herd sustainability, traceability, and management where it belongs.

At the Herd

flokk.ca/invest



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