



Vytelle. Always Progressing

Digitalization in Estonian Agriculture Conference

11 November 2021



Agenda:

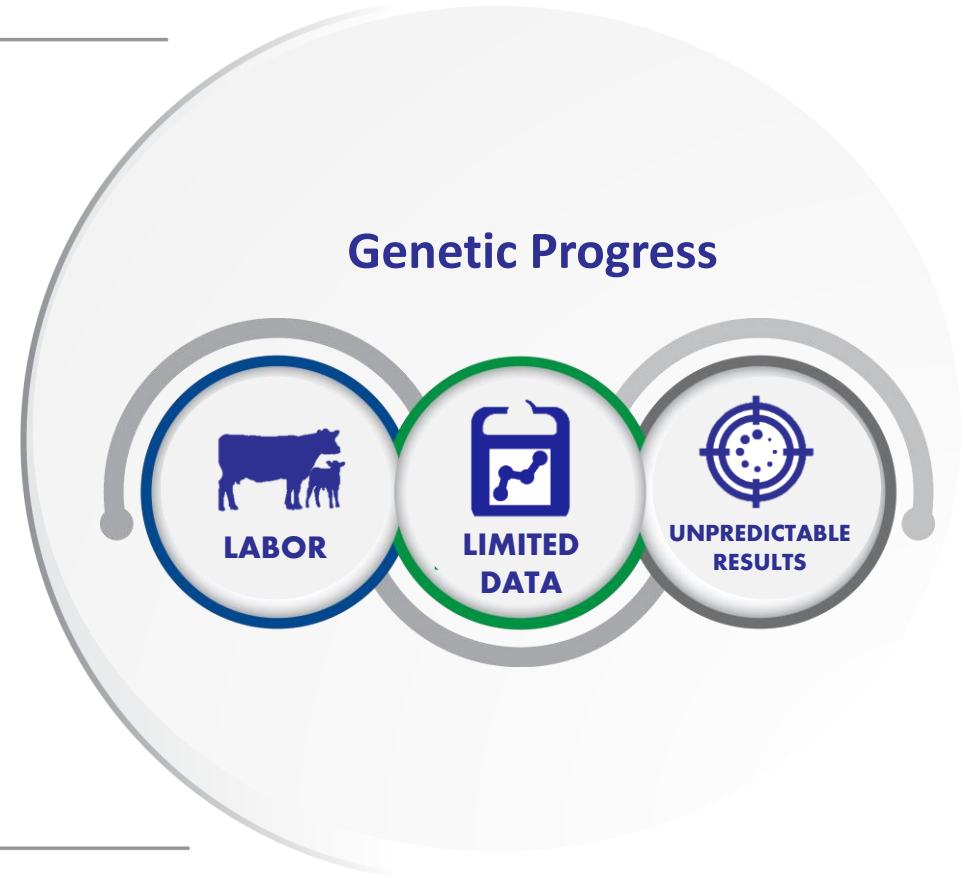
- 1. Introduction to Vytelle**
- 2. Why Feed Efficiency Matters**
- 3. Use of a Data Platform to Collect Individual Animal Data & Insight**

Vytelle Advances the RIGHT genetics FASTER

Triple Challenge



Genetic Progress

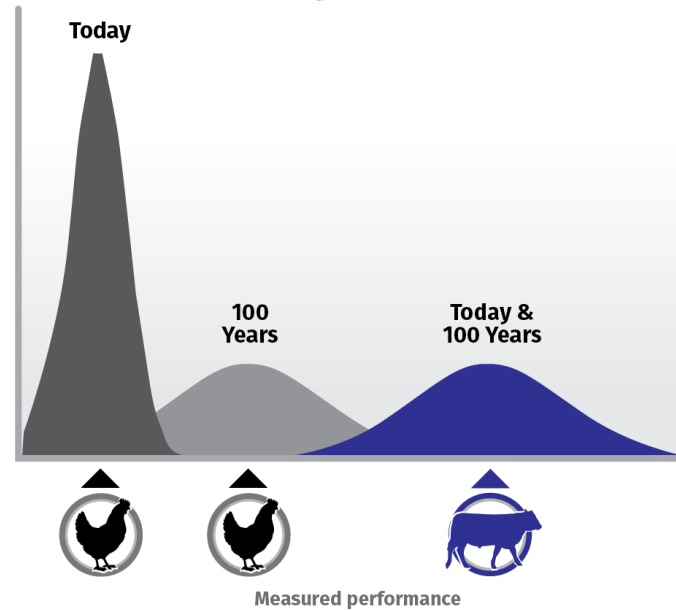


Genetic Progress is a Proven Solution

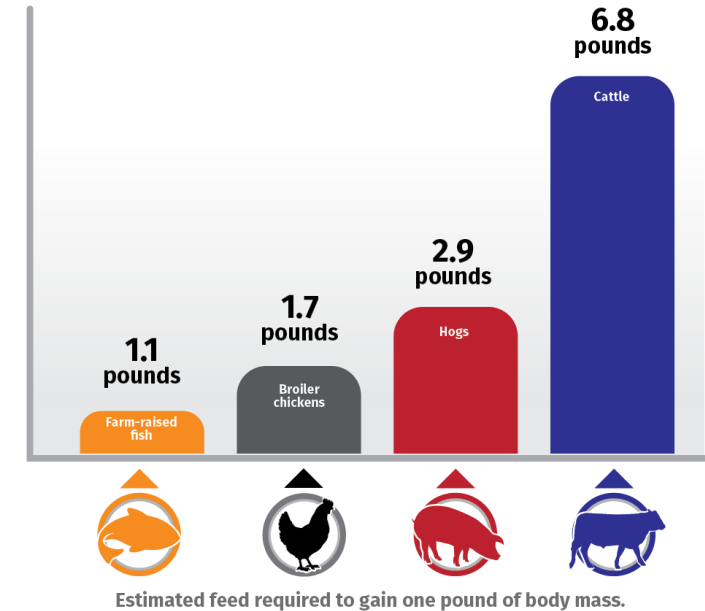
Triple Challenge



Beef and chicken comparison



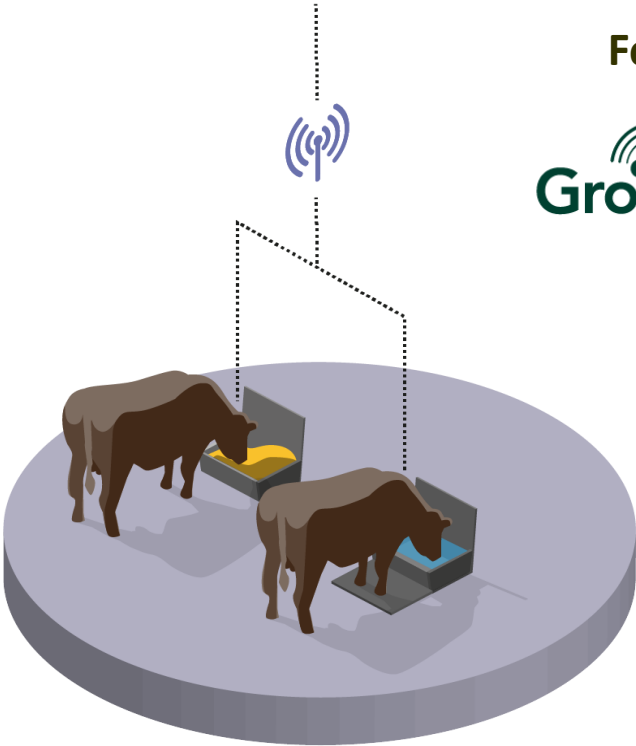
Feed conversion ratio



Integrated Technology Platform



SENSE



Phenotype Data Capture



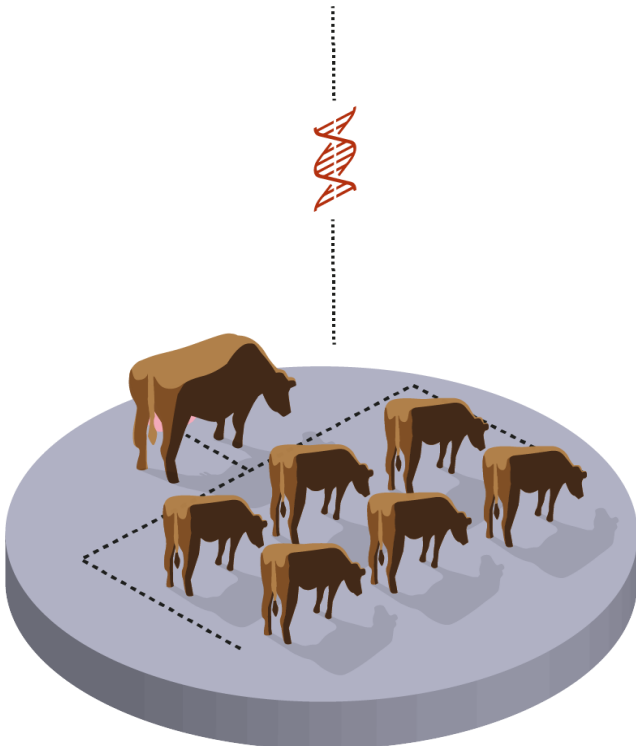
INSIGHT



Decision Support Tools



ADVANCE



In Vitro Fertilization

Vytelle

Always Progressing

21

countries where Vytelle labs, feed efficiency locations, satellites, joint ventures and franchises are collecting oocytes, producing embryos or data on individual animals

82

team members all with the common purpose **to ensure meat and milk** are competitive and viable food choices for future generations

262,948

individual EPD animals make up the **world's largest multi-breed repository**

30

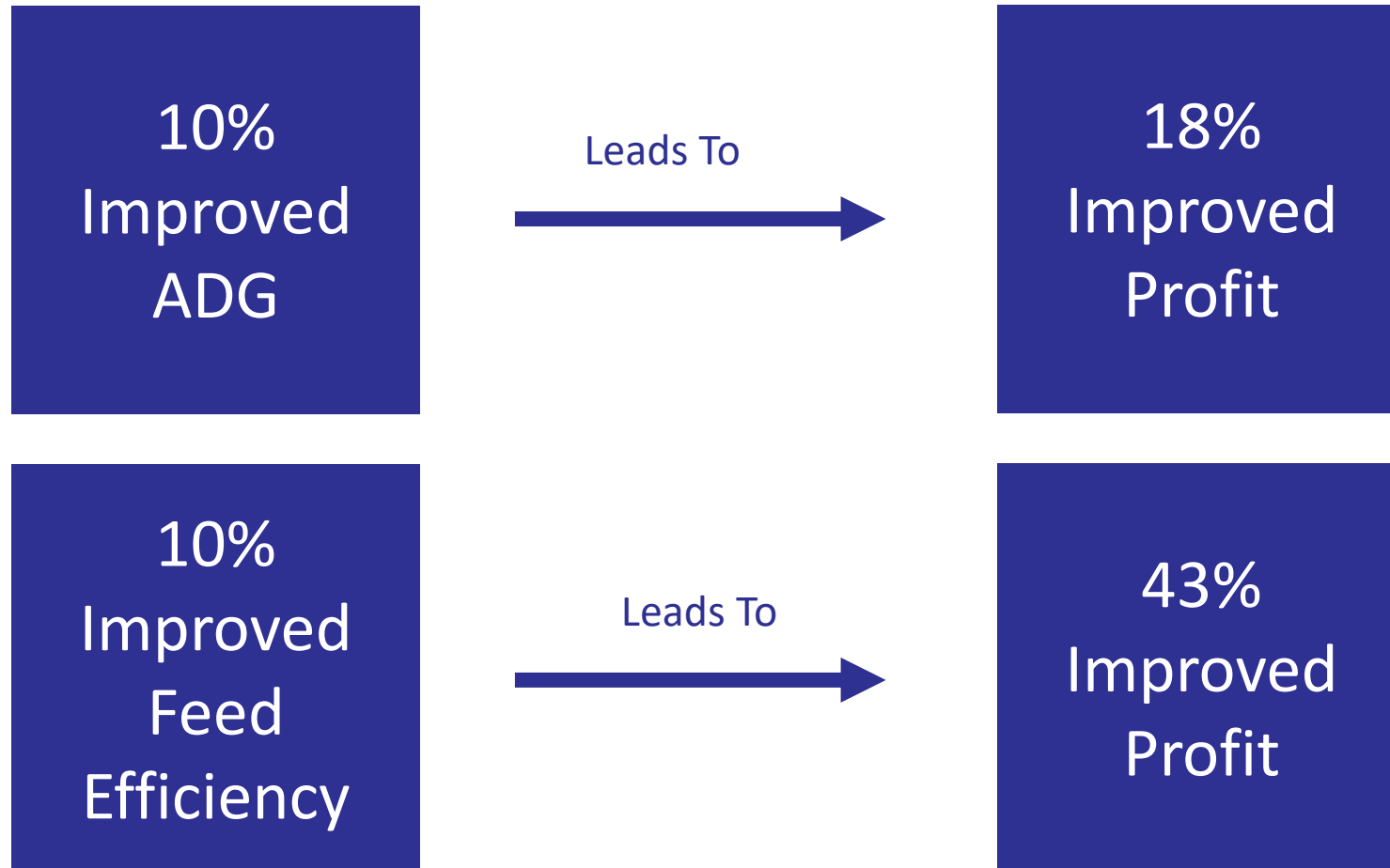
breeds of dairy and beef cattle on which **ovum pick-ups** have been performed

OVER
200,000

Grade 1 embryos produced for customers **worldwide to fast forward genetic progress**

Why Feed Efficiency Matters

Why is Selection for Efficiency Important



Feed = 70% of all production costs

What is RFI?

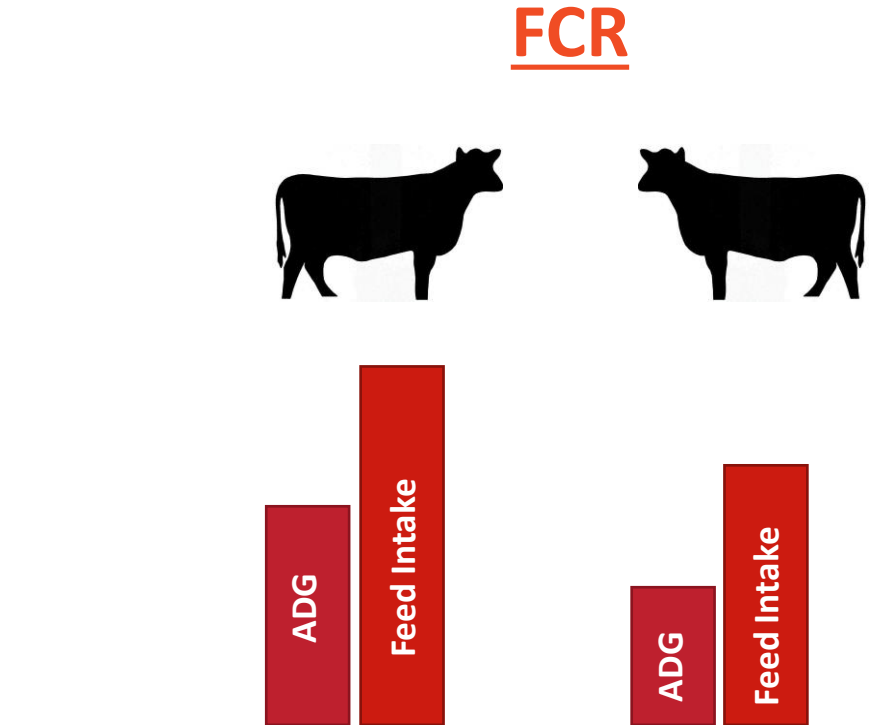
Residual Feed Intake (RFI): measure of feed efficiency, calculated as the difference between an animal's actual intake and their expected intake for a given body size and growth rate

Low RFI = Efficient

High RFI = Inefficient

- Moderately heritable trait ($h^2 = 0.36-0.58$)
- Independent of body weight and size, differences in the trait cannot be detected by looking at an animal

Comparing Measures of Feed Efficiency



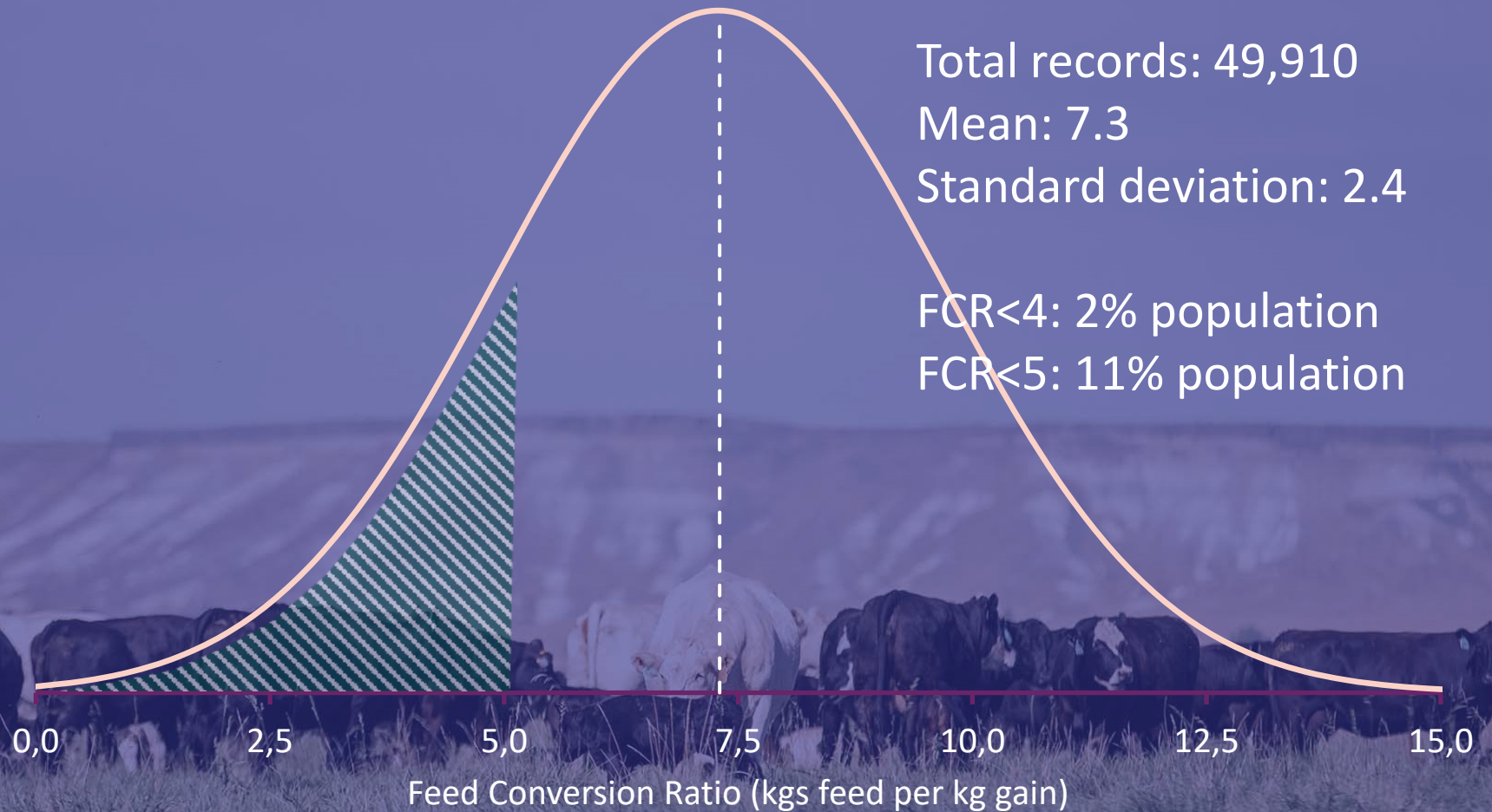
FEED EFFICIENCY: IF YOU DON'T MEASURE IT, YOU CAN'T MANAGE IT



366 kg	Weight	353 kg
1.24 kg/day	ADG	1.23 kg /day
9.57 kg/day	Expected Feed Intake	9.30 kg /day
11.02 kg/day	Actual Feed Intake	7.94 kg /day
+1.46 kg/day	Difference	-1.34 kg/day

If the cost of feed is \$0.45/kg x 2.8 kg/day x 75 days = \$94.50

Change is possible



Why Feed Efficiency Matters?

Improve Profit & Production

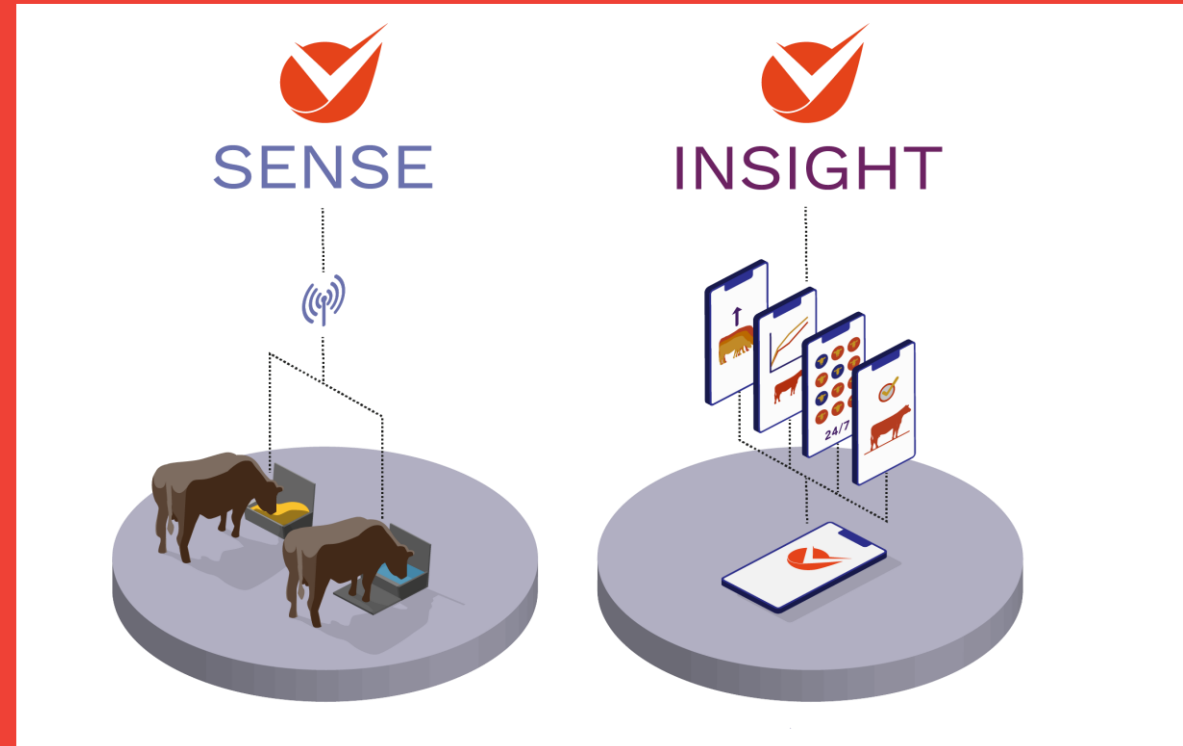
- Reduction of input costs (feed = 70% of total)
- Run more animals on the same amount of land
- Use resources more efficiently

Reduction of Methane (GHG)

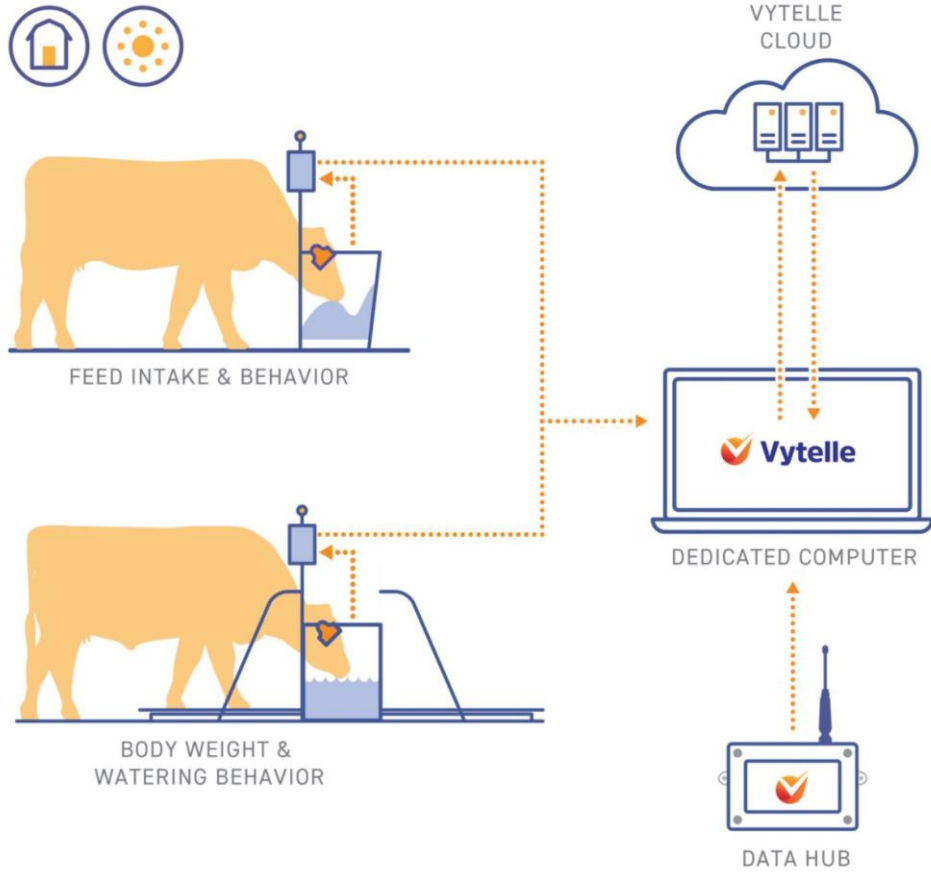
- Methane is highly correlated to Dry Matter Intake (DMI)
- Animals that are superior for RFI have LOWER Methane emissions

Identify, select, verify and breed animals that are genetically superior

Use of a Data Platform to Collect Individual Animal Data & Insight for Breeding Decisions



How the program works



Dashboard Reporting
Daily Alerts
End-of-Monitoring Period Analytics for Decision

Feed Intake System

Individual Animal Feed Consumption

- Animals RFID ear tagged
- RFID antenna in trough rim
- Trough on load cells – 3 g resolution
- Measured each second
- Trial Protocols Built into Software
- Standardized Automated Computation
- Incorporating Behavior, Diet, Environment



In-Pen Weighing (IPW)



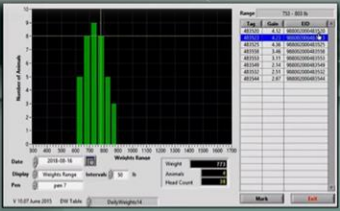
DAQ Panel

Antenna

Partial Body Weight Measurement
Converts partial body weight to Live Weight

Load Bar

Below the Structure



3 Independent Reviews of In-Pen Weighing

1. ARC-LNR

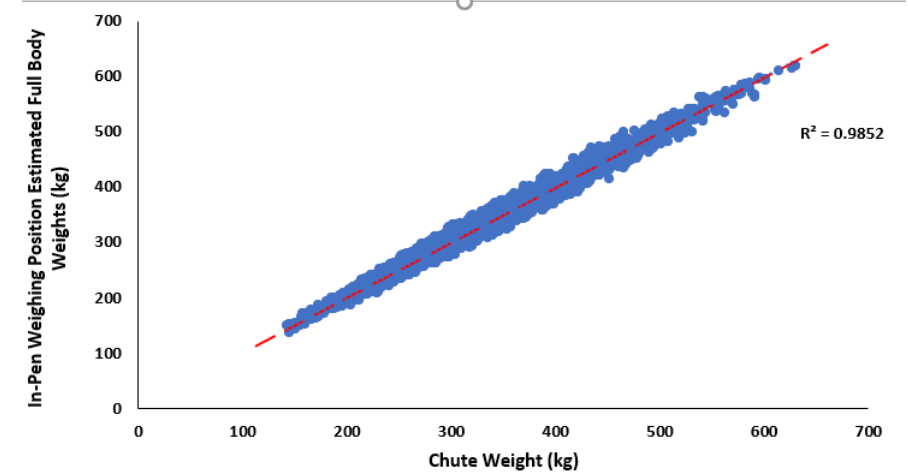
- Over 4000 records of South African breeds were analyzed
- In-pen weighing technology vs. chute weights
- Avg. difference for all records was .26kg with a .98 correlation

2. Global 3rd party Review

- Published in The Animal Science Journal
- 5 leading beef scientists reviewing ~9000 animals

3. Noble Foundation

- Accuracy of the Vytelle SENSE In Pen Weighing positions
- Compared IPW with Walk over Weighing (WOW) weights.



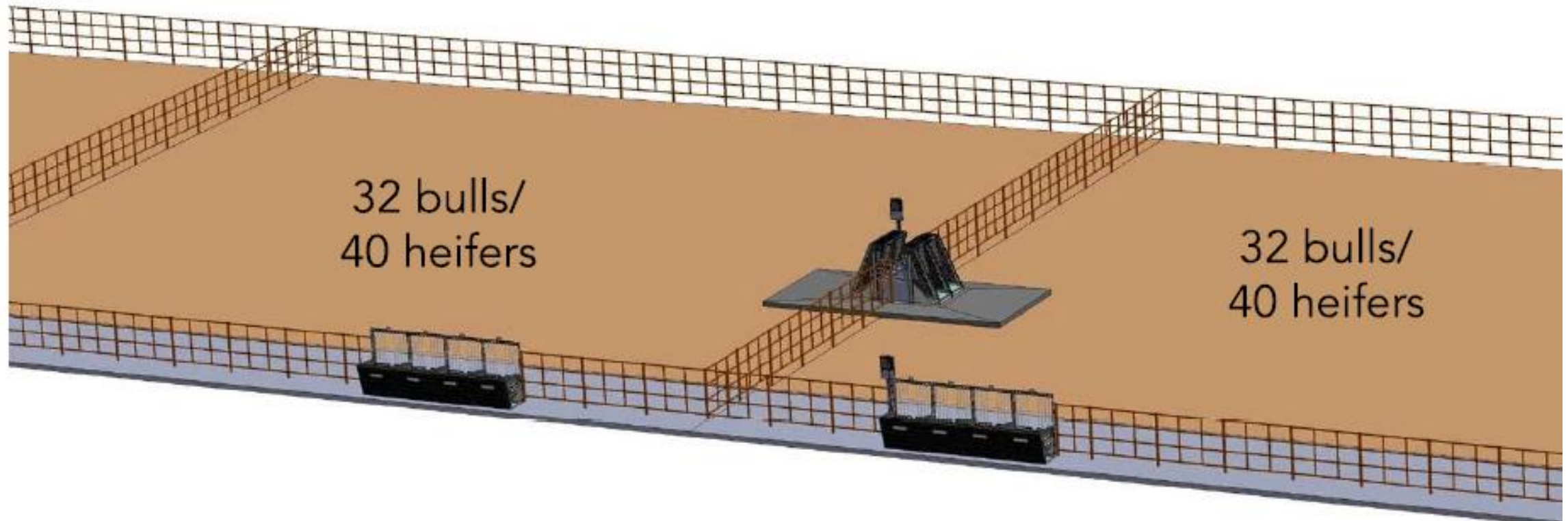
ACCURACY, USE AND APPLICABILITY OF THE VYTELLE SENSE™ IN-PEN WEIGHING POSITIONS

N. Lansink¹, G. Pyoos-Daniels², M. Scholtz²

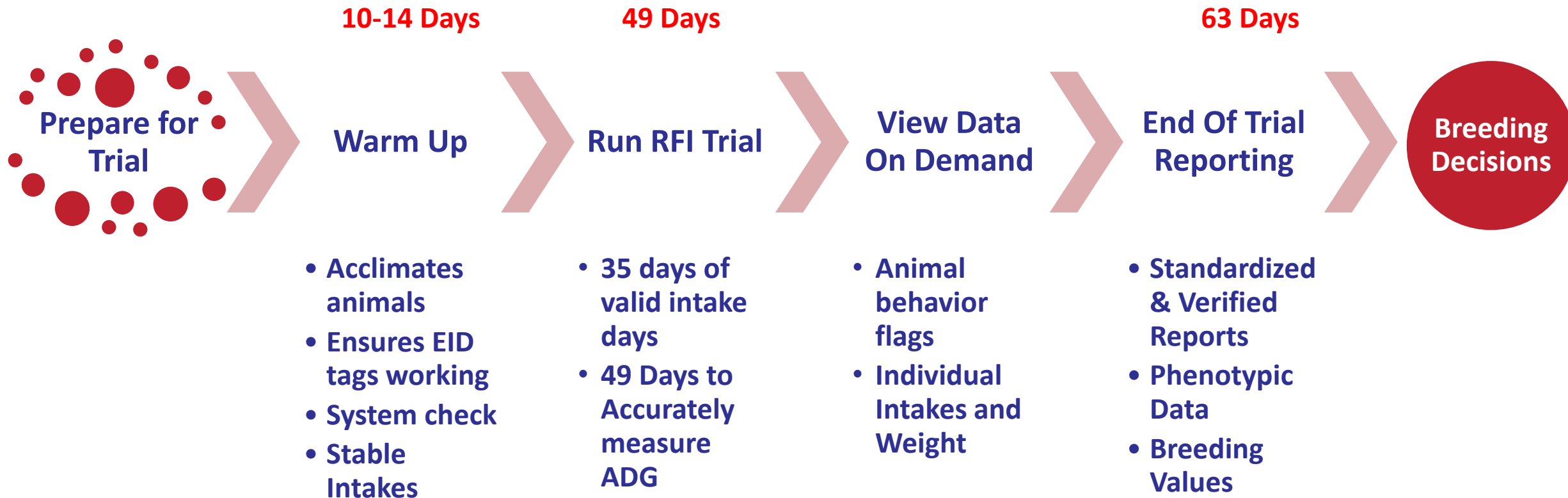
¹Vytelle, 80383 US-395, Hermiston, OR 97838, United States

²Agricultural Research Council-Animal Production, Irene, 0062, South Africa

A Typical 8 Node System



Standardized Trials – How does it work?



Average Total Trial Duration – 63 days

Standardized Approach To Multi-breed EBVs

- All RFI Trials Follow the Same Standards
- Standardisation allows for comparison of EPDs across trials and across breeds
- Standards for data validation, same across all trials
- Standardisation is critical when comparing cattle with different origins, and in different geographical locations



End of Trial Summary

Customer: Vytelle Ranch
Start/End Date: 2020-10-12 / 2020-12-01
Units: Lbs & Inches
Trial Group: Vytelle Ranch end 2020-12-01 Pen 2

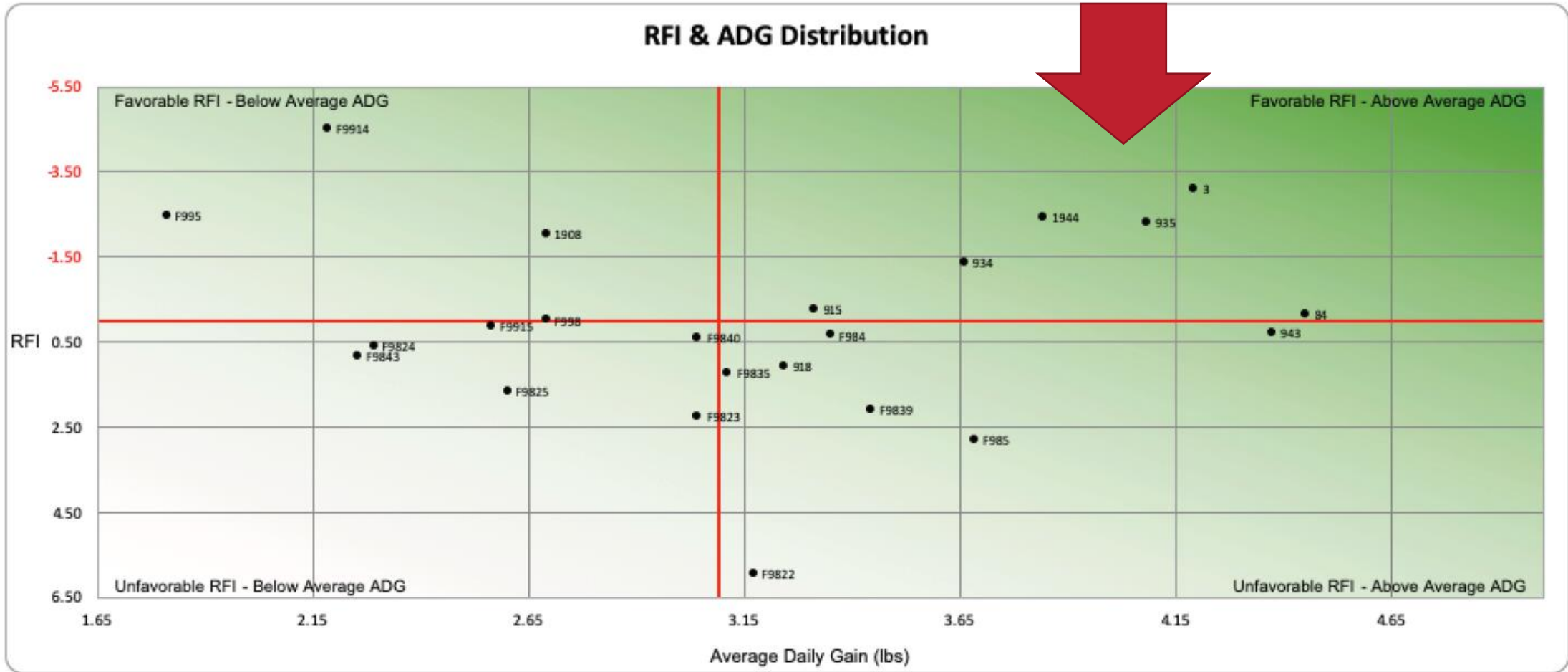
Sex: Bull
Dry Matter %: 63.00%

END OF TRIAL SUMMARY REPORT

ID	ALT ID	EID	BREED	DOB	ORIGIN	PEN	RFI	RFI RANK	RADG	RADG RANK	START WT.	END WT.	ADG	DMI	RAW F:G	ADJ F:G	RFI vs. ADG Quadrant
Yel 19-H		124000202147323	Hereford	2020-02-23	Vytelle Ranch	Pen 2	-2.71	1	0.30	6	666.60	807.70	2.82	16.07	5.68	5.13	Favorable RFI - Above Average ADG
Yel 106-H		124000197933858	Hereford	2020-04-01	Vytelle Ranch	Pen 2	-2.07	2	-0.10	18	589.95	695.77	2.12	14.22	6.70	6.70	Favorable RFI - Below Average ADG
Yel 135-H		124000195429403	Hereford	2020-04-20	Vytelle Ranch	Pen 2	-1.50	3	0.11	10	488.87	596.90	2.16	13.47	6.24	7.09	Favorable RFI - Below Average ADG
Yel 123-H		124000195429238	Hereford	2020-04-08	Vytelle Ranch	Pen 2	-1.34	4	0.33	4	521.08	651.15	2.60	15.04	5.76	6.18	Favorable RFI - Above Average ADG
Yel 94-H		124000197933832	Hereford	2020-03-25	Vytelle Ranch	Pen 2	-1.21	5	0.11	12	549.10	670.35	2.43	15.15	6.26	6.52	Favorable RFI - Below Average ADG
Yel 142-H		124000195429346	Hereford	2020-04-24	Vytelle Ranch	Pen 2	-1.12	6	-0.28	24	476.99	558.56	1.63	12.57	7.68	9.04	Favorable RFI - Below Average ADG
Yel 96-H		124000197933805	Hereford	2020-03-27	Vytelle Ranch	Pen 2	-0.93	7	-0.06	17	544.32	655.65	2.23	14.95	6.73	7.09	Favorable RFI - Below Average ADG
Yel 119-H		124000197195011	Hereford	2020-04-07	Vytelle Ranch	Pen 2	-0.88	8	0.21	9	624.83	769.23	2.89	17.48	6.06	5.71	Favorable RFI - Above Average ADG
Yel 84-H		124000198667790	Hereford	2020-03-22	Vytelle Ranch	Pen 2	-0.55	9	0.25	8	625.62	775.53	3.00	18.06	6.02	5.65	Favorable RFI - Above Average ADG
Yel 76-H		124000198667777	Hereford	2020-03-19	Vytelle Ranch	Pen 2	-0.40	10	0.11	11	712.02	867.44	3.11	19.58	6.29	5.39	Favorable RFI - Above Average ADG
Yel 129-H		124000195429282	Hereford	2020-04-15	Vytelle Ranch	Pen 2	-0.20	11	0.26	7	558.09	699.19	2.82	17.13	6.05	6.16	Favorable RFI - Above Average ADG
Yel 118-H		124000197933901	Hereford	2020-04-06	Vytelle Ranch	Pen 2	0.00	13	0.08	13	566.08	698.35	2.65	17.09	6.46	6.54	Unfavorable RFI - Above Average ADG
Yel 91-H		124000202147299	Hereford	2020-03-24	Vytelle Ranch	Pen 2	0.04	14	0.32	5	561.00	709.82	2.98	17.72	5.96	6.01	Unfavorable RFI - Above Average ADG
Yel 143-H		124000195429347	Hereford	2020-04-25	Vytelle Ranch	Pen 2	0.04	15	0.35	3	455.40	586.58	2.62	15.52	5.91	6.92	Unfavorable RFI - Above Average ADG
Yel 90-H		124000195429410	Hereford	2020-03-24	Vytelle Ranch	Pen 2	0.20	16	0.42	2	649.59	821.54	3.44	20.06	5.82	5.27	Unfavorable RFI - Above Average ADG
Yel 105-H		124000197933852	Hereford	2020-03-31	Vytelle Ranch	Pen 2	0.26	17	-0.55	27	674.34	783.47	2.18	17.84	8.15	7.42	Unfavorable RFI - Below Average ADG
Yel 100-H		124000197933821	Hereford	2020-03-30	Vytelle Ranch	Pen 2	0.44	18	-0.12	19	634.57	769.05	2.69	18.52	6.90	6.46	Unfavorable RFI - Above Average ADG
Yel 82-H		124000198667787	Hereford	2020-03-21	Vytelle Ranch	Pen 2	0.73	19	-0.02	15	624.52	765.61	2.82	18.96	6.70	6.32	Unfavorable RFI - Above Average ADG
Yel 87-H		124000198667792	Hereford	2020-03-23	Vytelle Ranch	Pen 2	0.73	20	0.00	14	572.23	706.71	2.69	17.99	6.69	6.72	Unfavorable RFI - Above Average ADG
Yel 116-H		124000197933899	Hereford	2020-04-06	Vytelle Ranch	Pen 2	0.86	21	-0.04	16	520.26	643.72	2.47	16.91	6.86	7.39	Unfavorable RFI - Below Average ADG
Yel 72-H		124000198667772	Hereford	2020-03-14	Vytelle Ranch	Pen 2	1.01	22	-0.67	28	710.37	823.90	2.27	19.22	8.47	7.42	Unfavorable RFI - Below Average ADG

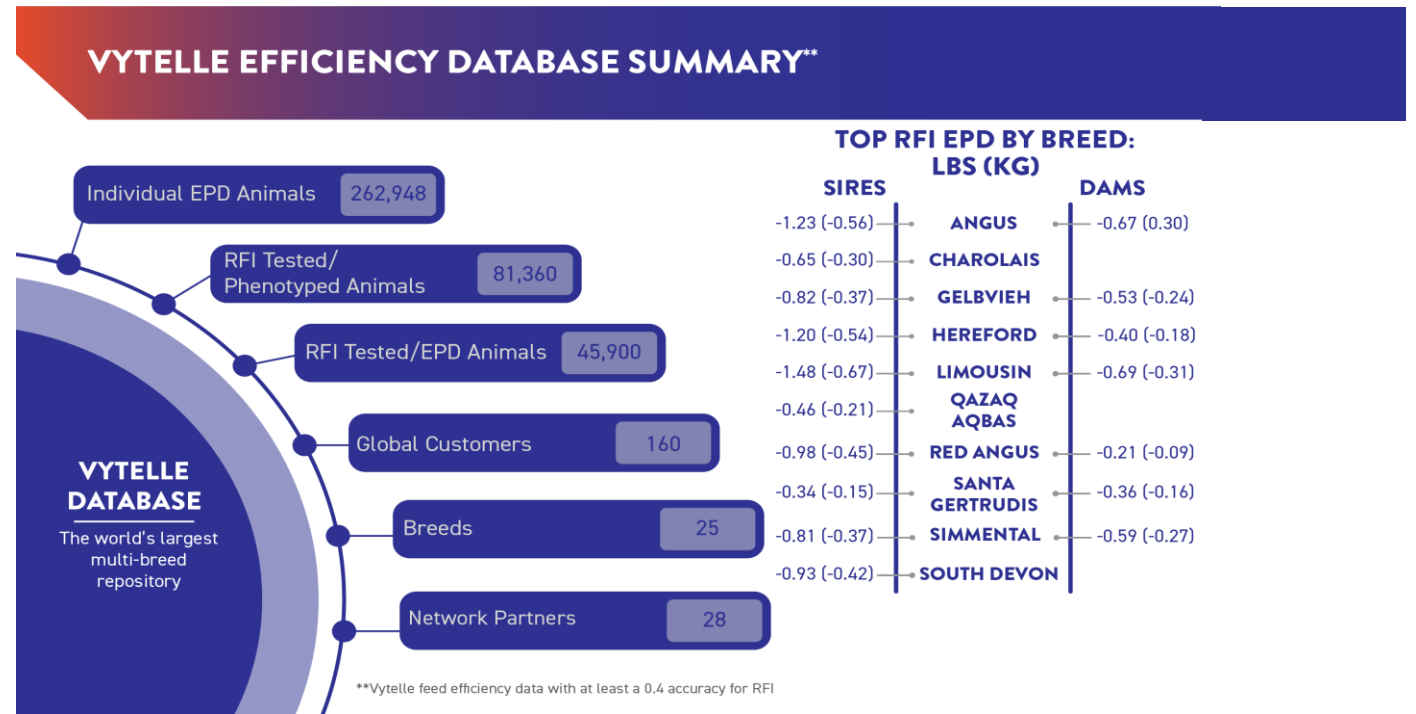
Customer: Customer
 Start/End Date: 2020-06-29 / 2020-08-25
 Unit: Lbs & Inches
 Trial Group: GrowSafe RFI end 2020-08-25 gp1 old

Sex: Bull
 Dry Matter %: 47.00%



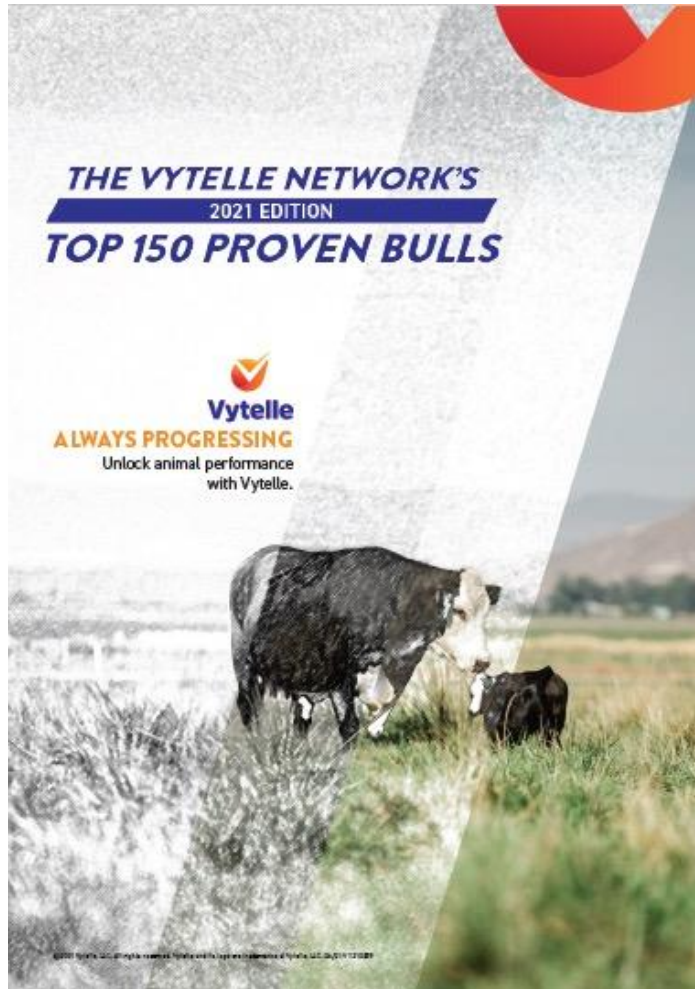
The Vytelle Network

- Largest Efficiency Database in the Global Beef Cattle Industry
- 25 Different Breeds represented
- + 265,000 EPD
- EPDs for Residual Feed Intake, Average Daily Gain and Dry Matter intake



Featuring Progressive Breeders & Associations Globally

THE VYTELLE NETWORK'S **2021 EDITION** ***TOP 150 PROVEN BULLS***



- We publish the Top 150 Efficient Bulls Annually
- Available on [Vytelle.com](https://www.vytelle.com)

Thank You

www.vytelle.com

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