

Vytelle. Always Progressing

Why Feed Efficiency Matters?

April 8th, 2022



Euroopa Maaelu Arengu
Põllumajandusfond:
Euroopa investeringud
maapiirkondadesse



Global Market Landscape Changing

- Changing Consumer
- Sustainability
- Integration
- New Trade Agreements
- Traceability
- Competition

New Solutions & Tools Required

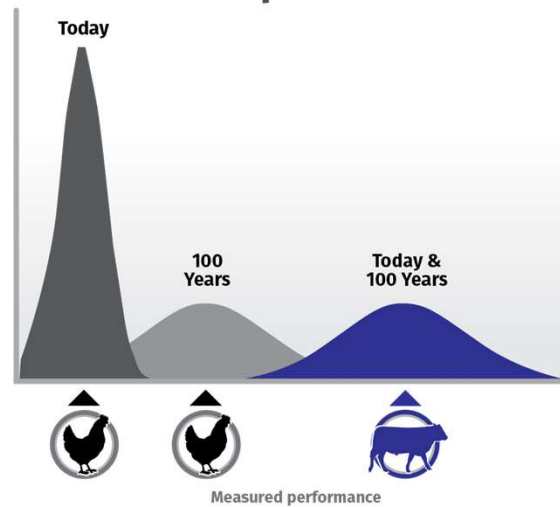


Genetic Progress is a Proven Solution

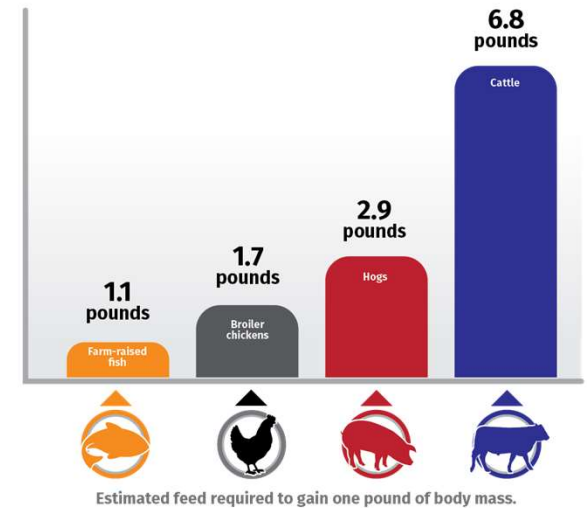
Triple Challenge



Beef and chicken comparison

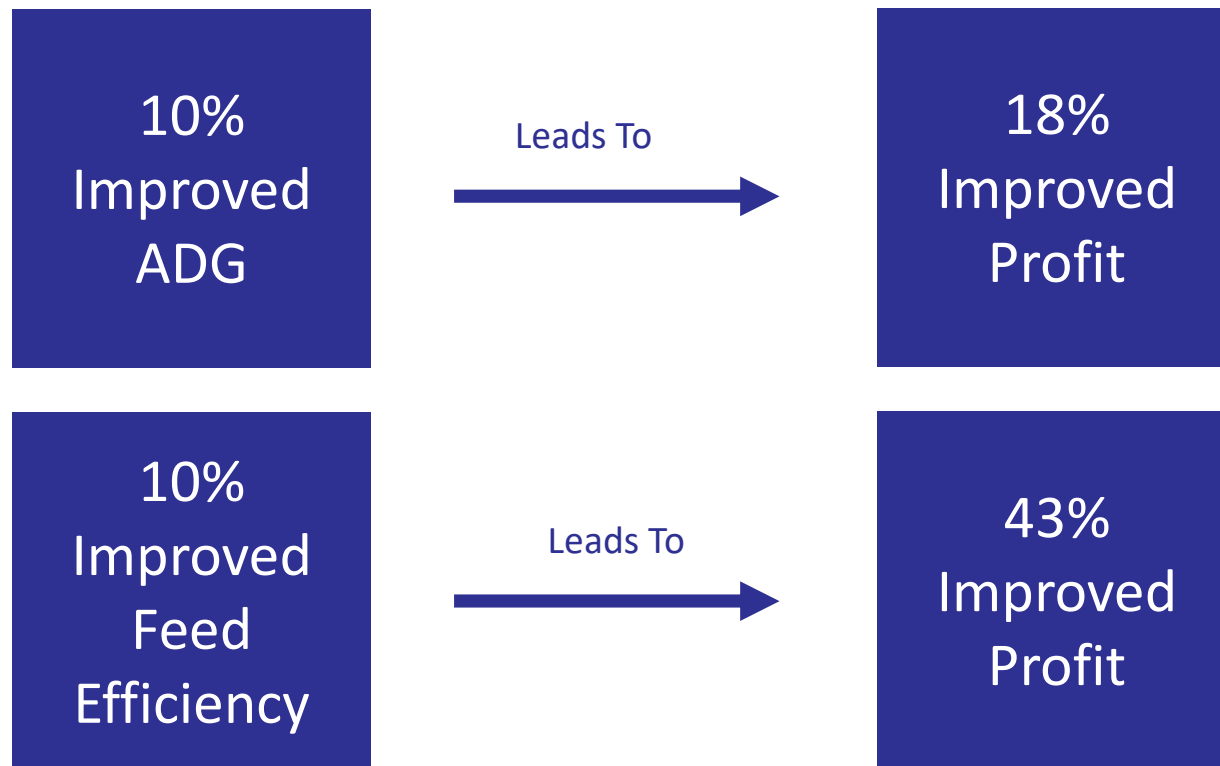


Feed conversion ratio



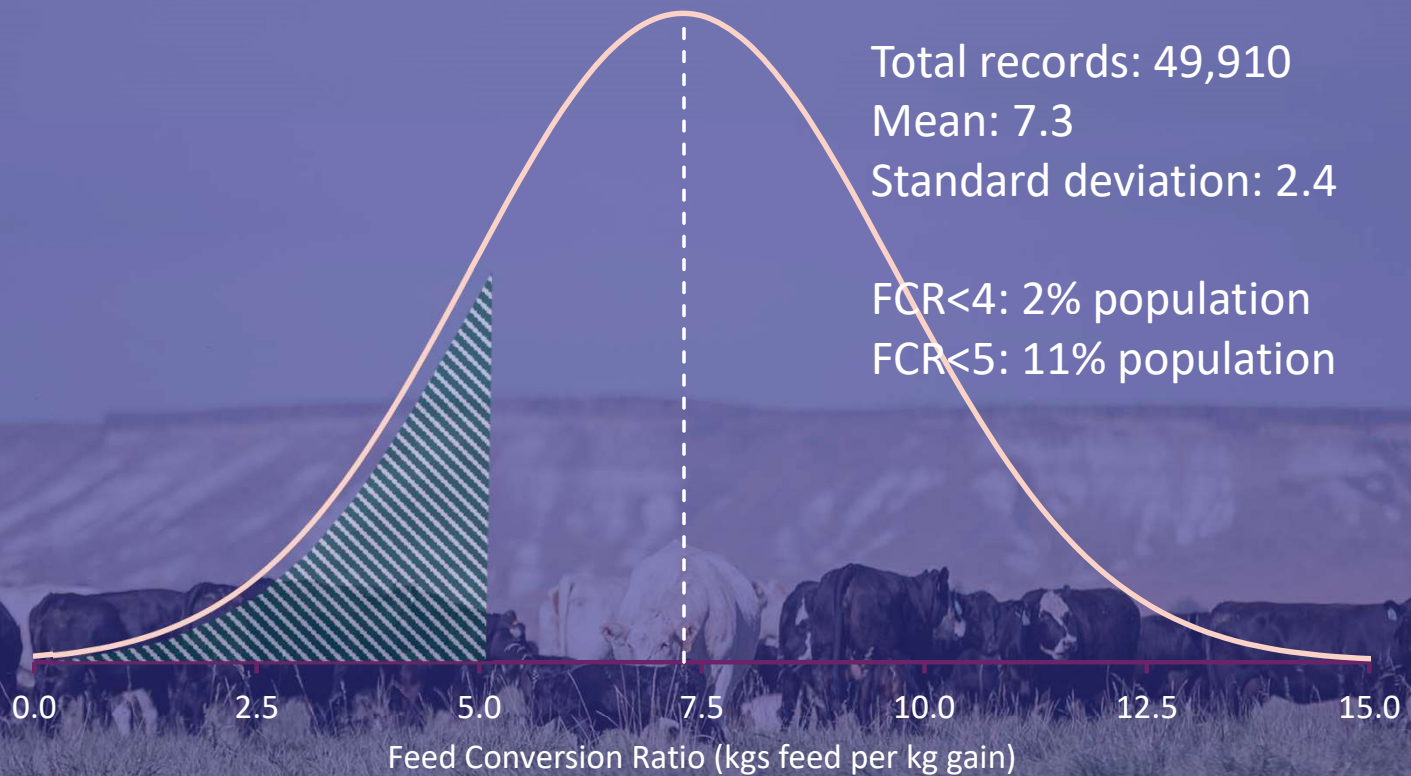


Why Feed Efficiency Matters



Feed = 70% of all production costs

Change is possible



Methane Emissions & Feed Efficiency

- Feed intake one of key drivers of enteric methane emissions
- Can improvements to feed efficiency (RFI) lower methane emissions???
- This Study Concluded The Potential for Selection for low RFI to
 - Reduce daily methane emissions
 - Reduce daily methane emissions without negatively impacting on farm profitability



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Environmental Animal Science

ENVIRONMENTAL ANIMAL SCIENCE

Effect of divergence in residual methane emissions on feed intake and efficiency, growth and carcass performance, and indices of rumen fermentation and methane emissions in finishing beef cattle

Paul E. Smith,^{*,†} Sinead M. Waters,[†] David A. Kenny,[†] Stuart F. Kirwan,[†] Stephen Conroy,[‡] and Alan K. Kelly^{†,1}

^{*}Teagasc, Animal and Bioscience Research Department, Animal and Grassland Research and Innovation Centre, Grange, Dunsany, County Meath, Ireland, [†]UCD School of Agriculture and Food Science, University College Dublin, Belfield, Dublin 4, Ireland, [‡]Irish Cattle Breeding Federation, GENÉ IRELAND Progeny Test Centre, Tully, Kildare Town, County Kildare, Ireland

* Paul E Smith¹ and Sinéad M Waters¹
<https://pubmed.ncbi.nlm.nih.gov/34598276/>

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)

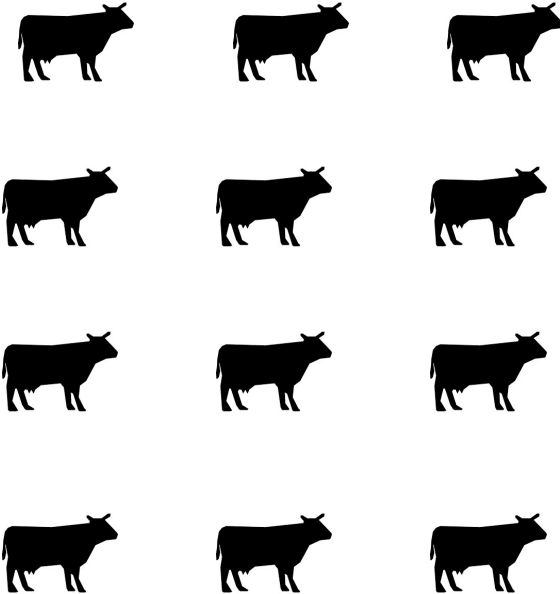
- Methane is highly correlated to Dry Matter Intake (DMI)
- Feed Efficient animals have LOWER Methane emissions



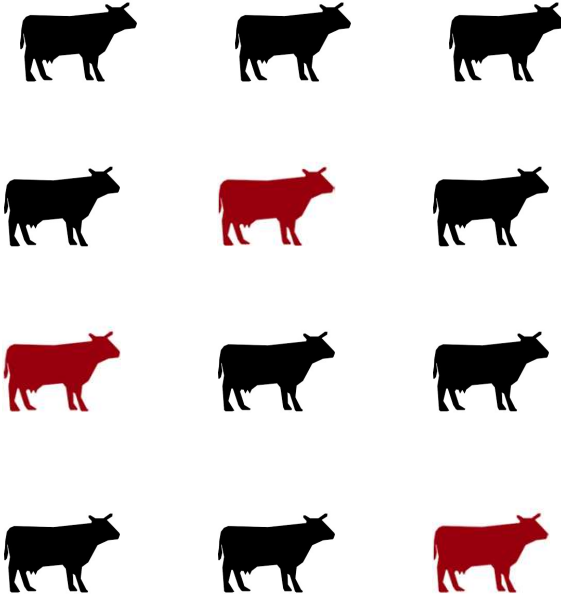
Cannot See Feed Efficiency



What We See



What We Measure





What is Residual Feed Intake (RFI)

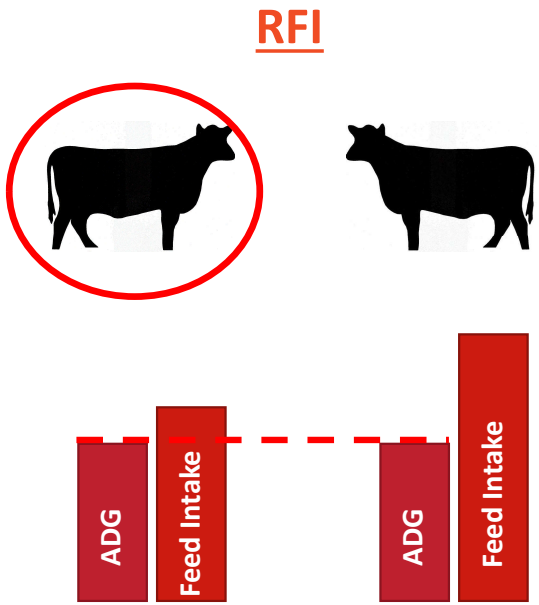
- **Residual Feed Intake (RFI):** measure of feed efficiency, calculated as the difference between an animal's actual intake and their expected intake for a given body size and growth rate

Low RFI = Efficient

High RFI = Inefficient

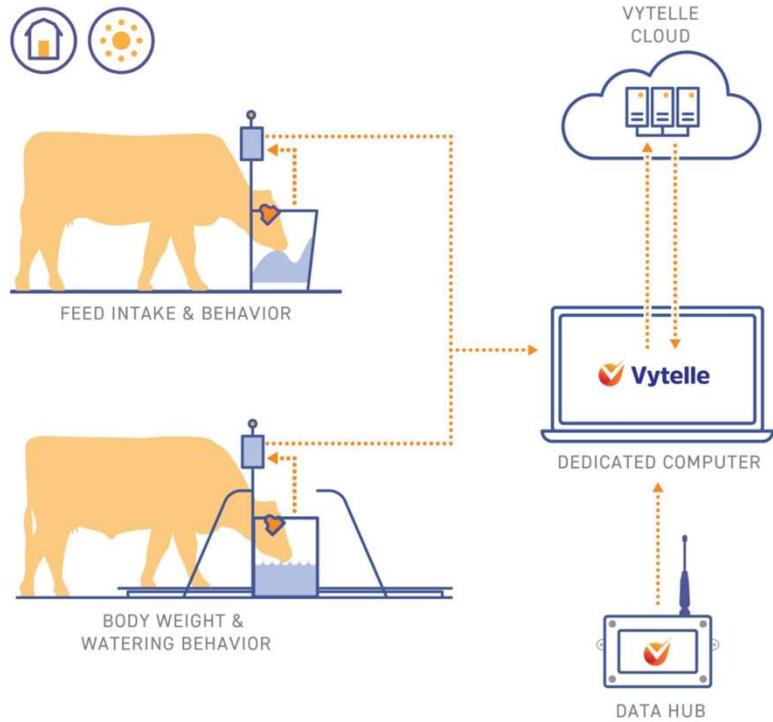
- Moderately heritable trait ($h^2 = 0.36-0.58$)
- Independent of body weight and size
- Differences in the trait cannot be detected by looking at an animal

Comparing Measures of Feed Efficiency





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

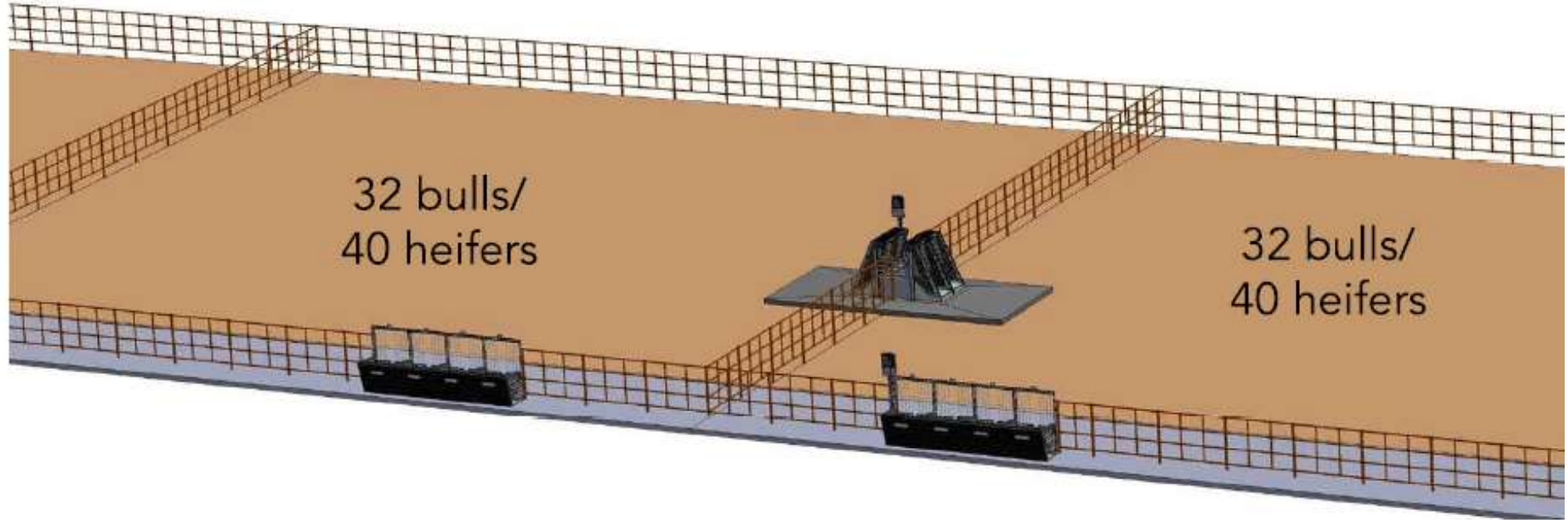
Partial Body Weight Measurement
Converts partial body weight to Live Weight

Load Bar

Below the Structure ©2021 Vytelle, LLC. All rights reserved. Vytelle and its logo are trademarks of Vytelle, LLC.



A Typical System



How To Run a Feed Efficiency Trial

Standardization is Critical



**Average RFI Total Trial Duration
With IPW continuous weighing = 63 days**

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 €0.31/kg x 2.8 kg/day x 75 days = €65

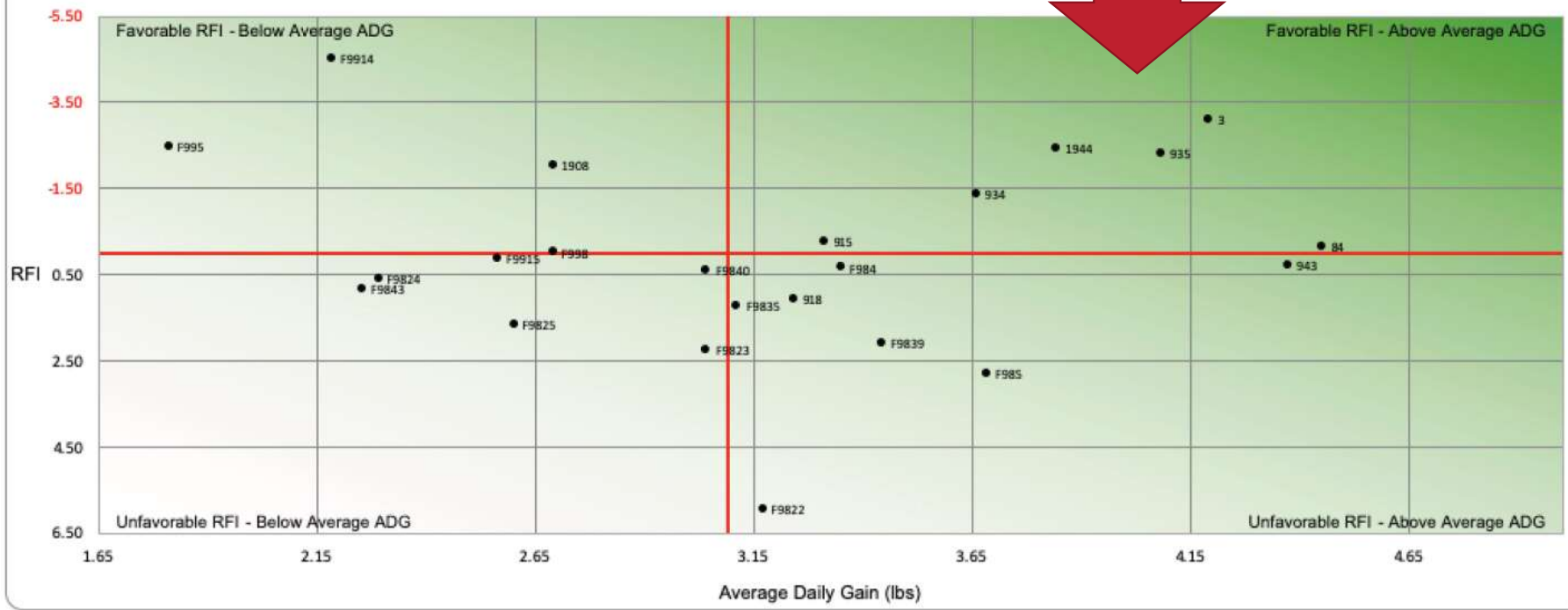
FI & ADG Distribution

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%

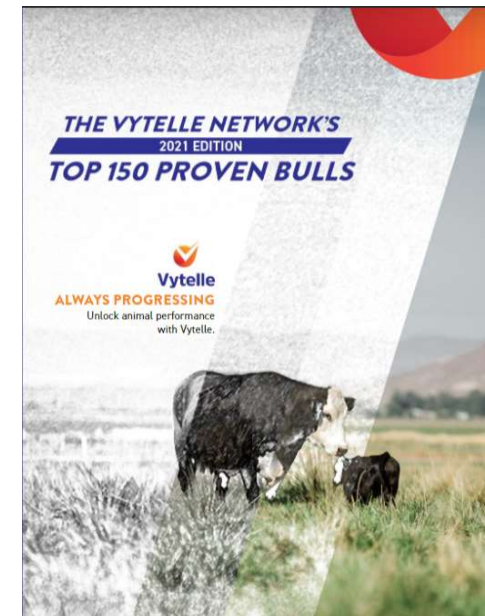
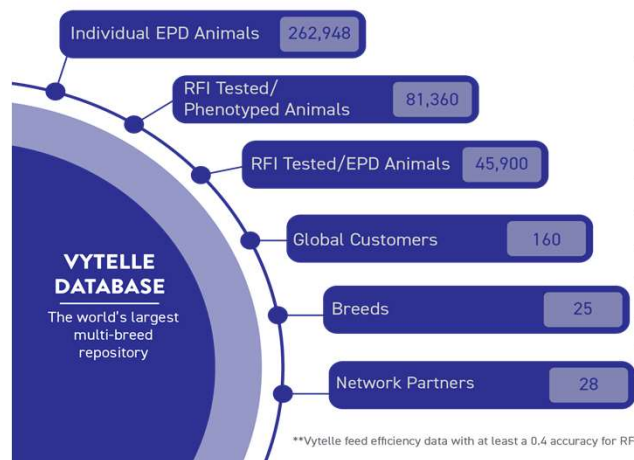


RFI & ADG Distribution



The Vytelle Network

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



Available on [Vytelle.com](https://www.vytelle.com)

Featuring Progressive Breeders & Associations Globally

Genetic Selection for Feed Efficiency

- Reduce Feed Costs
- Increase Production & Profit
- Reduce Methane Emissions



Making the Next Generation Better than the Previous One



Euroopa Maaelu Arengu
Põllumajandusfond:
Euroopa investeeringud
maapiirkondadesse

Thank You

www.vytelle.com

Lisa.Rumsfeld@vytelle.com

Vice President International Commercial Operations