

ACCELERATING

EFFICIENCY

TOGETHER



Three critical things you need to know about calculating growth curves using partial body weights

Mark Nelson, Director of Industry Relations

Kevin Garossino, Lead Data Analyst

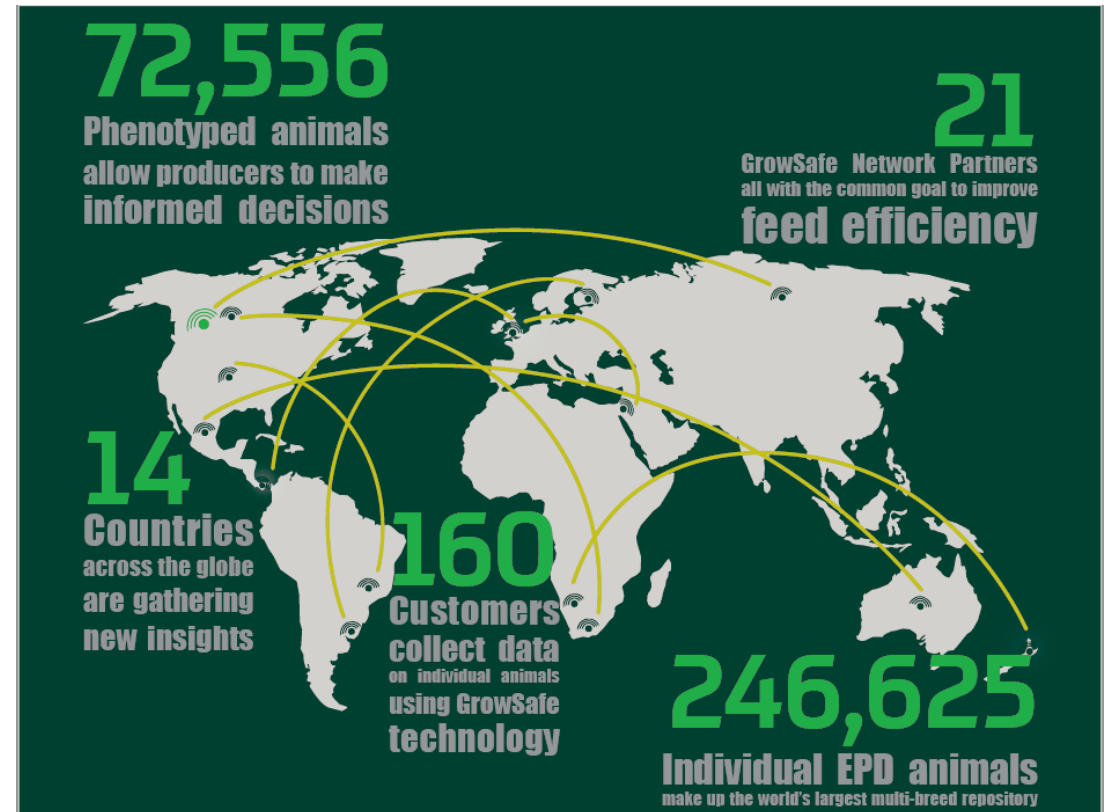
BIF June 2020

GrowSafe Overview

Platform of livestock monitoring solutions impacting

- Sustainability
- Efficiency
- Profitability

We are partnering globally with breeders, breed associations, feedlots and academia



Agenda

- Technology
- Data collection review
- Use cases
- Questions



Technology

GrowSafe Beef® Continuous In Pen Weighing
Mark Nelson, Director of Industry Relations

Technology - GrowSafe Beef[®] (GSB)



DAQ Panel

Antenna

**Partial Body Weight
Measurement taken**
Convert partial body
weight to Live Weight

Load Bar
Below the Structure

Continuous In-Pen Weighing



Data Collection Review

GrowSafe Beef® Continuous In Pen Weighing
Kevin Garossino, Lead Data Analyst

Uncertainty of Chute Weighing

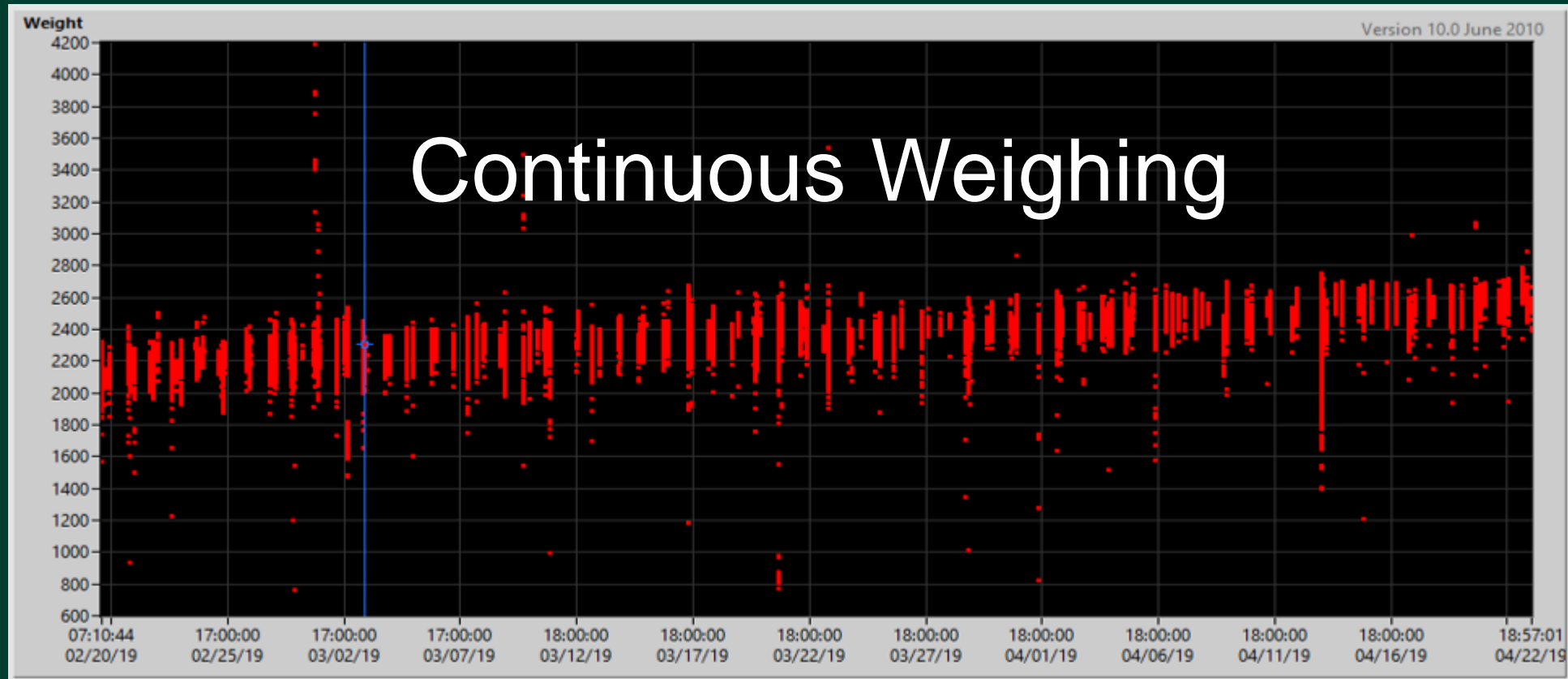
Factors Affecting Chute Weights:

- Time of Day
- Rumen Fill
- Other Cattle Pushing up Against Chute
- Proper Calibration and Taring of Chute Scales

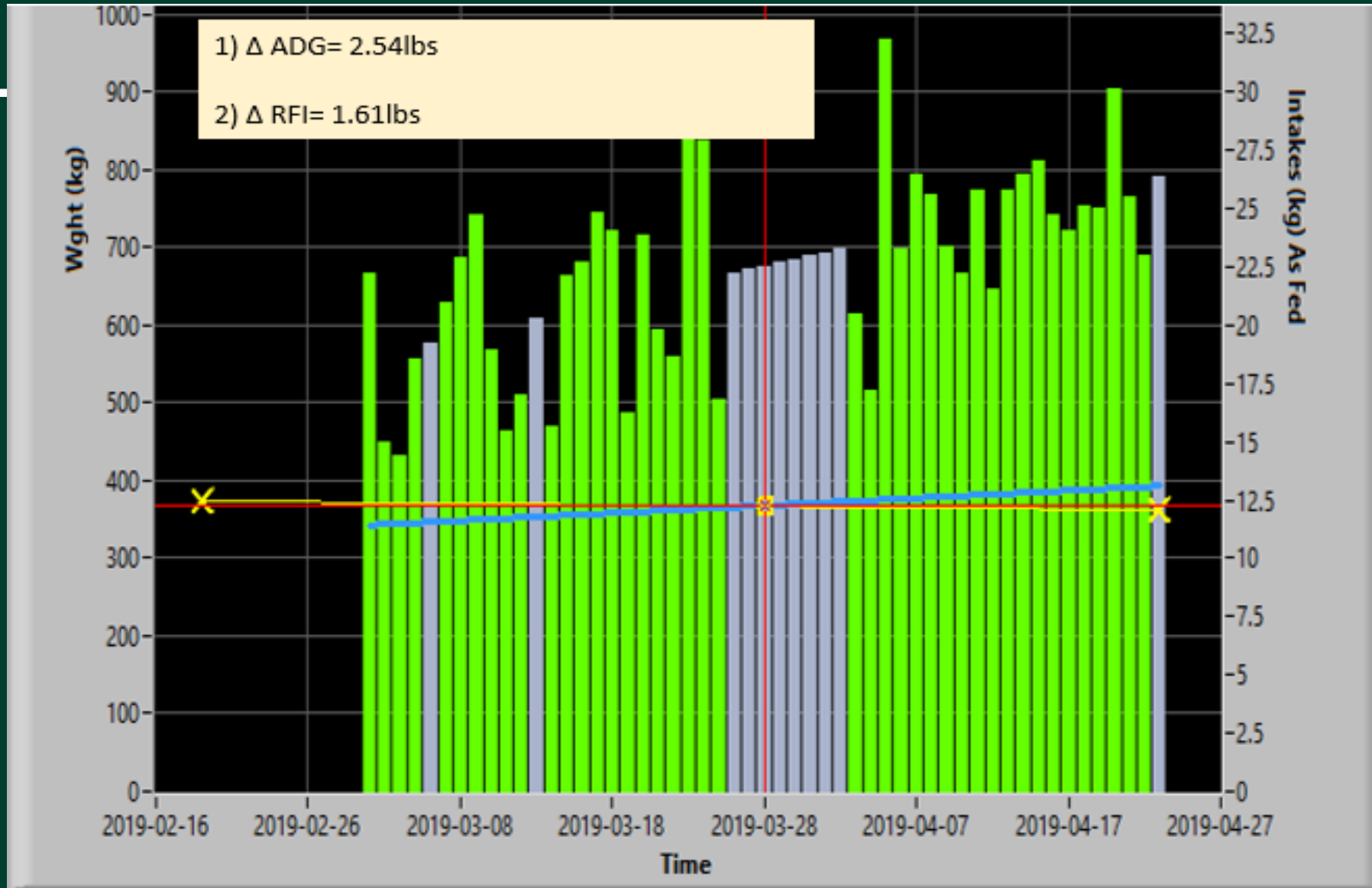
Proportion of consecutive-day weights with differences at given thresholds
(n=40000)

Weight Difference	> 10 lbs	> 20 lbs	> 30 lbs	> 40 lbs
Proportion of Weights	54.0 %	25.6 %	11.2 %	5.0 %

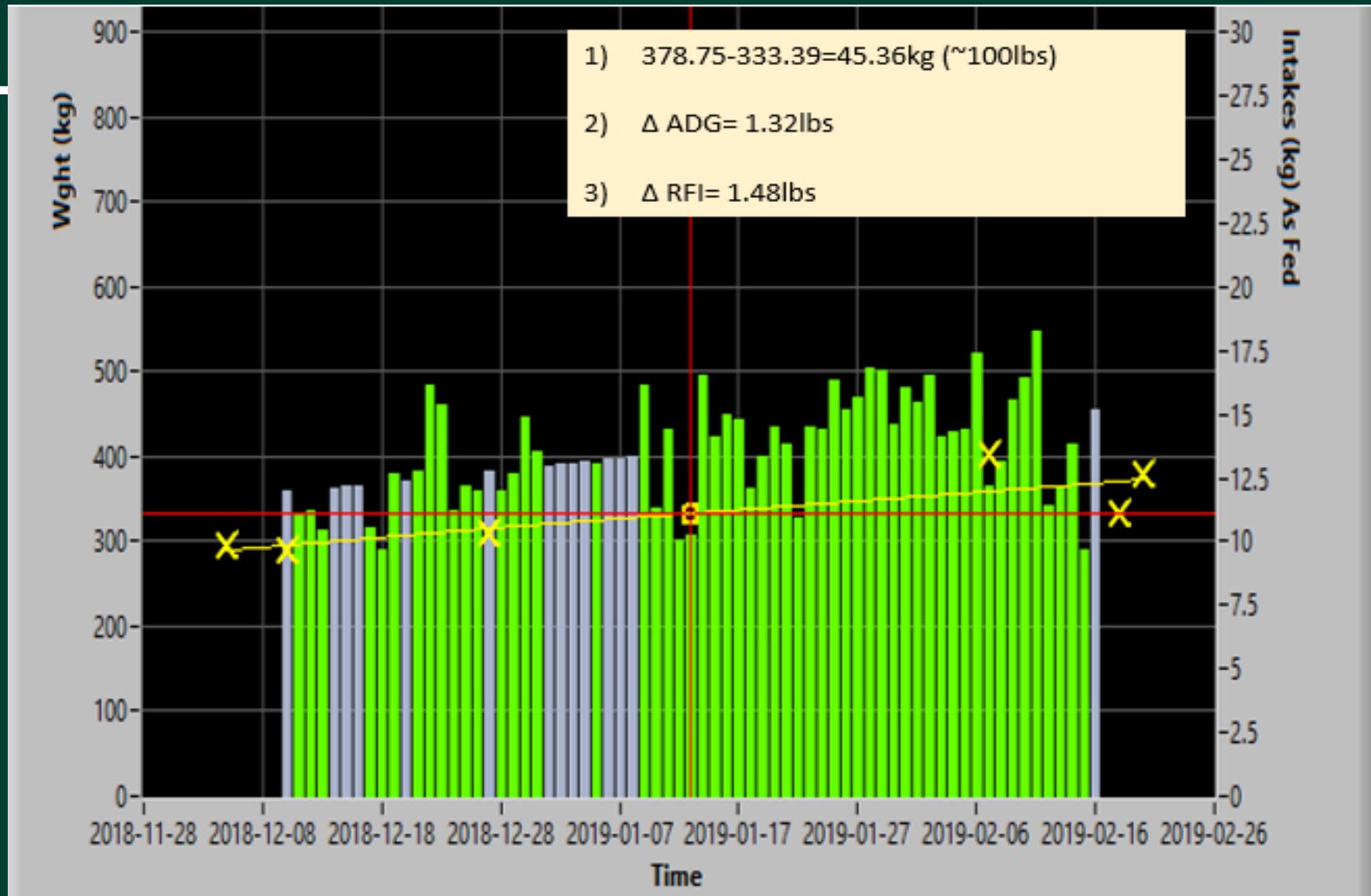
Technology GrowSafe Beef[®] (GSB)



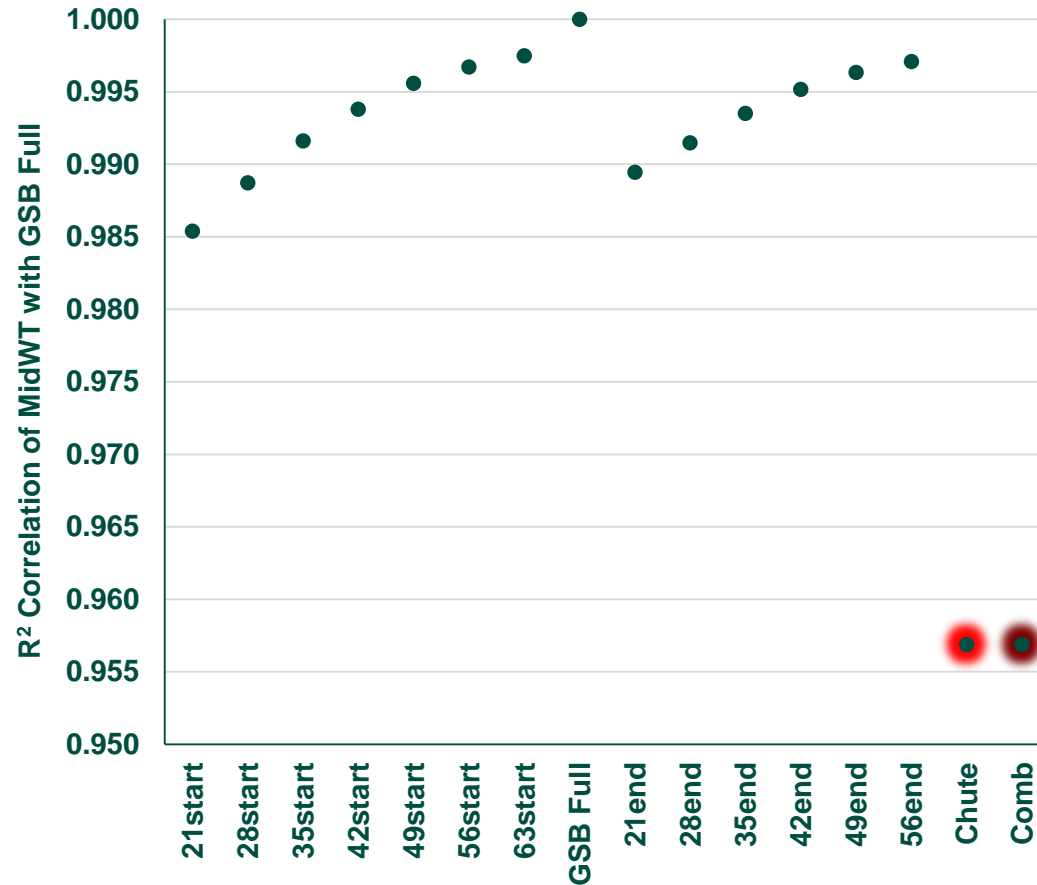
Uncertainty of Chute Weighing



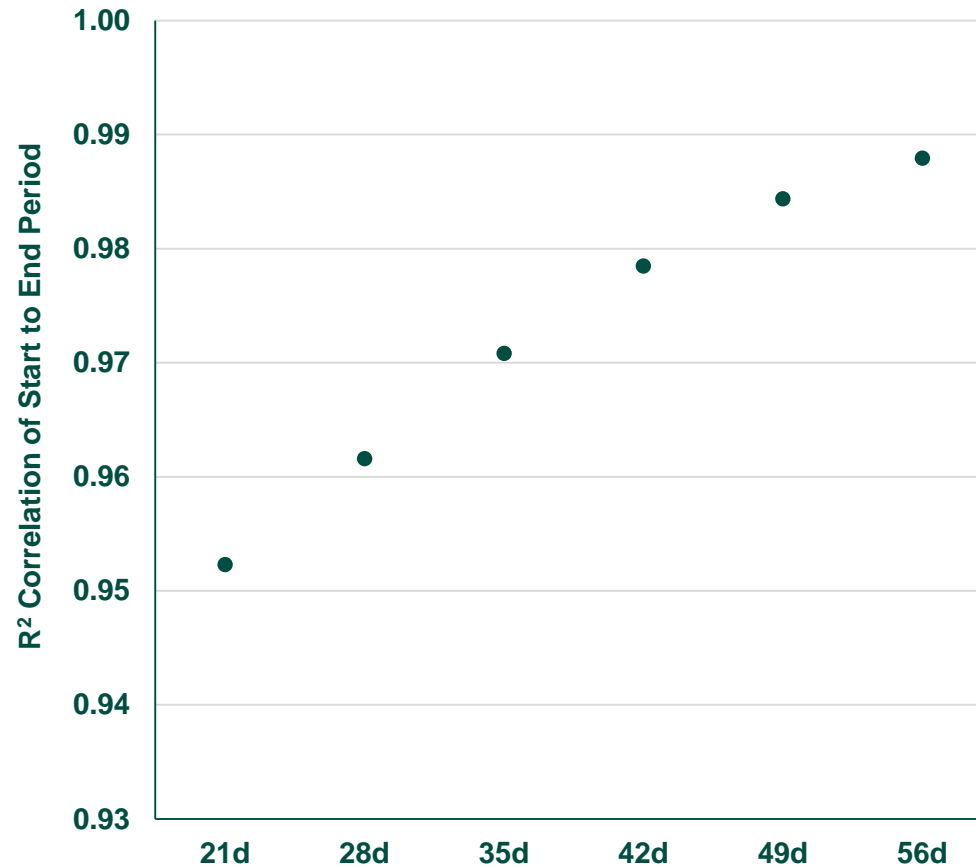
Uncertainty of Chute Weighing



Correlation of Chute vs GSB Weight



Correlation of Chute vs GSB Weight



Use Cases

GrowSafe Beef® Continuous In Pen Weighing
Mark Nelson, Director of Industry Relations

Use Cases

1. Seedstock

- RFI Standards 49 Day vs 70 Day
- Establish Growth Curves and Weights

2. Feedlot

- Continuous Performance Measurements

3. Pasture

- Portable Technology for Weights on Pasture

Seedstock: Shortened Duration RFI Feed Efficiency Trials



- Standard trial with chute weights in 70-day following a warm up
- 49-day trial length, following a 10-14 day warm-up period
- Opportunity to run more trials per year, reducing cost
- Reduction of animal stress and labor

Guidelines for Running Feed Efficiency Trials

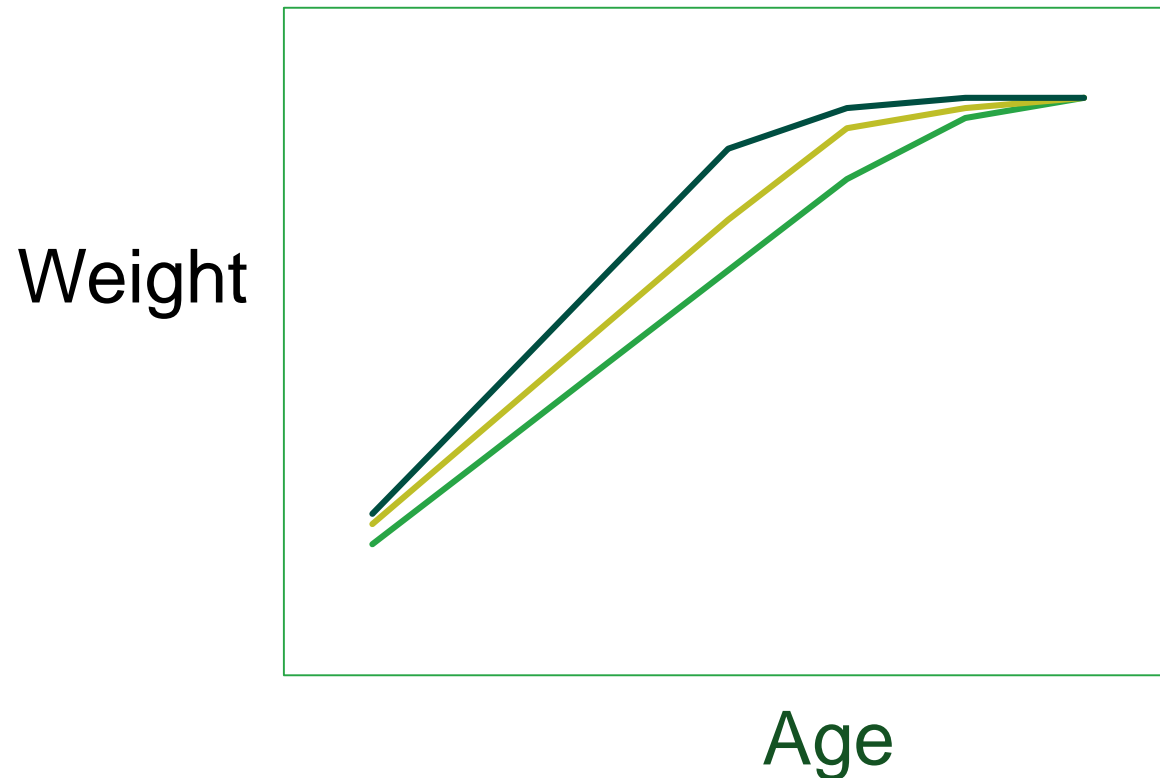
Impact of Changing Technology of Feed Efficiency Trials

	BIF	GrowSafe
DMI (total valid)	35 Days	35 Days
Tests that use coupled feed intake and gain; Such as RFI w/ Chute Weights (4)	70 Days	70 Days
Tests that use coupled feed intake and gain; Such as RFI w/ continuous weighing	Under discussion*	49 Days

***BIF Guidelines Wiki:** New remote-sensing technologies continue to be developed and older technologies improved such as automated animal weighing systems and ear tags monitoring feeding behavior. Given the rapid advancements, the guidelines for measuring individual feed intake and gain, will likely need review on an ongoing basis. These technologies will likely result in changes to the current recommendations

http://guidelines.beefimprovement.org/index.php/Intake_and_Feed_Efficiency

Seedstock: Future Suggested Uses



- Growth Curves
- Third Party Verified:
 - Cow Weights
 - 205 and 365 weights

Feedlot: Monitoring Continual Performance



Monitor individual animals to make data-based decisions

Performance

- Manage Variation by individual & pen

Nutrition

- Access Rations & Performance Insights

Well Being

- Early detection of Behavior Changes

Labor Optimization

- Optimize resources

Marketing

- Daily Live Weights
- Daily Carcass Weight
- Predict Harvest Date

Pasture



- **Emerging** Technology for Growth Management & Monitoring on Pasture
- Research Collaborations with Noble Research Institute, West Virginia University and Olds College

Summary

1. Understanding how the GSB technology works
2. Continuous weighing with GSB is accurate & precise
3. 49 days of continuous weighing on GSB provides equivalent ADG to 70 days with chute weights
4. There is a high level of uncertainty in chute weights vs continuous weighing
5. Review of various uses of continuous weighing

Questions