

# Effect of increased protein feeding on Holstein heifer growth in a large Southwestern Ontario dairy herd

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OABP Student Case Competition

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# Farm Background

- 250 cow Holstein free-stall herd
- Sept 2012 production parameters:
  - Avg 34 kg/cow/day
  - 3.7% BF
  - 3.2 % protein
  - Pregnancy rate of 28%

# Methods

- Data collected in June 2011 (Cohort 1) and June 2012 (Cohort 2)
  - Wither height measured on all heifers
  - Weight measured on heifers < 8 months of age
  - Body Condition Score collected on heifers > 8 months of age
- Feeding changes were made to increase the amount of protein being fed to Cohort 2 heifers

# Methods

- Things that stayed the same:
  - Colostrum management
  - Housing
  - Weaning age and protocol
  - Incidence of calf diarrhea
- Things that changed:
  - High volume, low pressure airbag ventilation installed in calf barn in Spring 2012
    - Decreased incidence of pneumonia from 30% to 5%
  - Pedometers
  - Increased protein feeding

# Feeding Changes Summary

	Original Feeding	High protein Feeding
Milk fed/day	Ad libitum whole milk acidified with citric acid	8L fresh whole milk
Calf starter	20% protein	24% protein
Calf grower	17% protein	20% protein
Pre-breeding and Breeding age	½ haylage + ½ corn silage TMR	¾ haylage + ¼ corn silage TMR

Calf Starter available ad libitum from 1 week - 2.5 mths

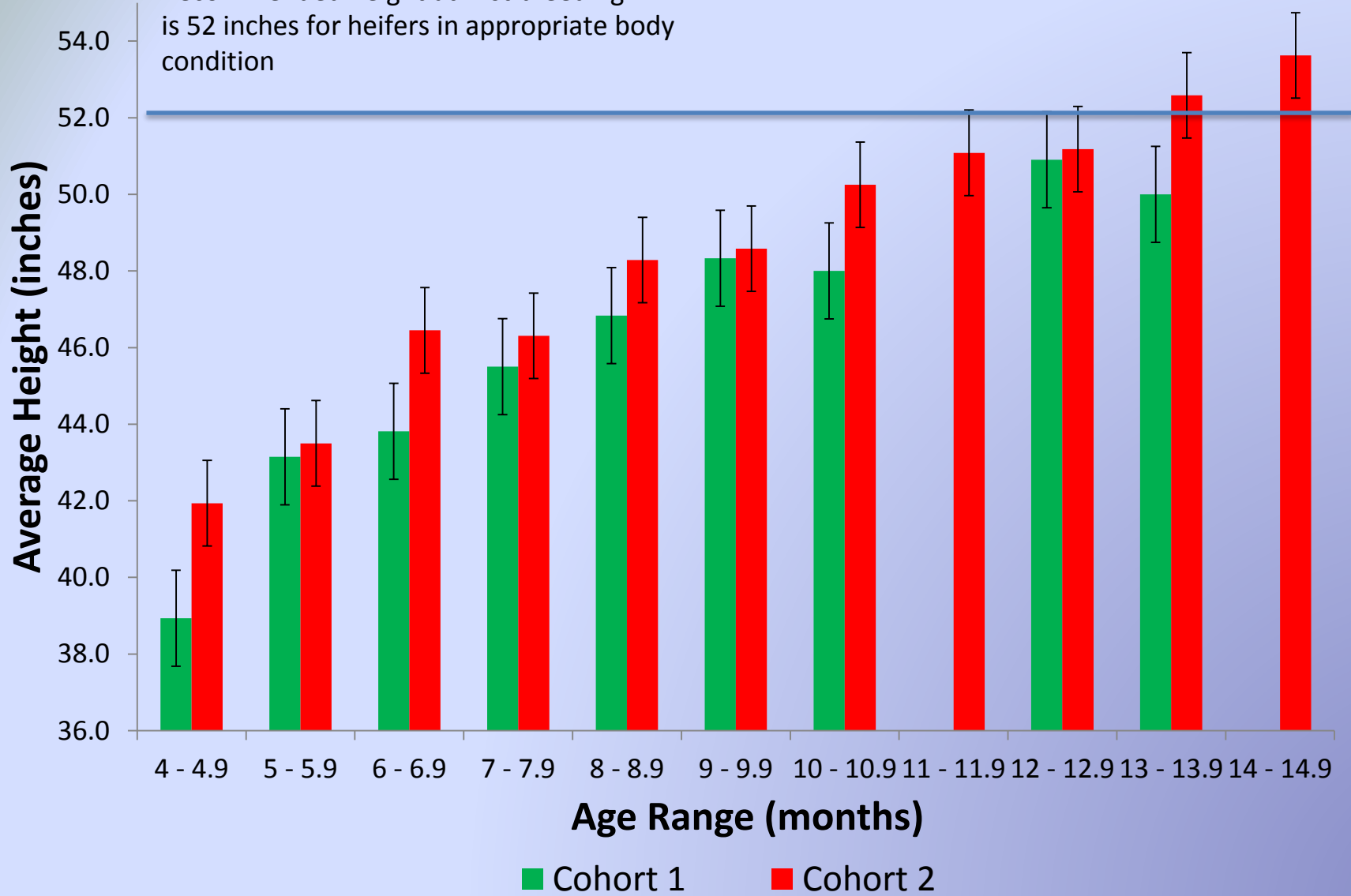
Calf grower top-dressed with dry hay from 2.5 – 9 mths

# Results

- With age removed as confounding variable:
  - Cohort 2 was 1.4” taller than Cohort 1 ( $p < 0.001$ )
  - Cohort 2 was 47lbs heavier than Cohort 1 ( $p = 0.007$ )
  - No change in BCS between the groups

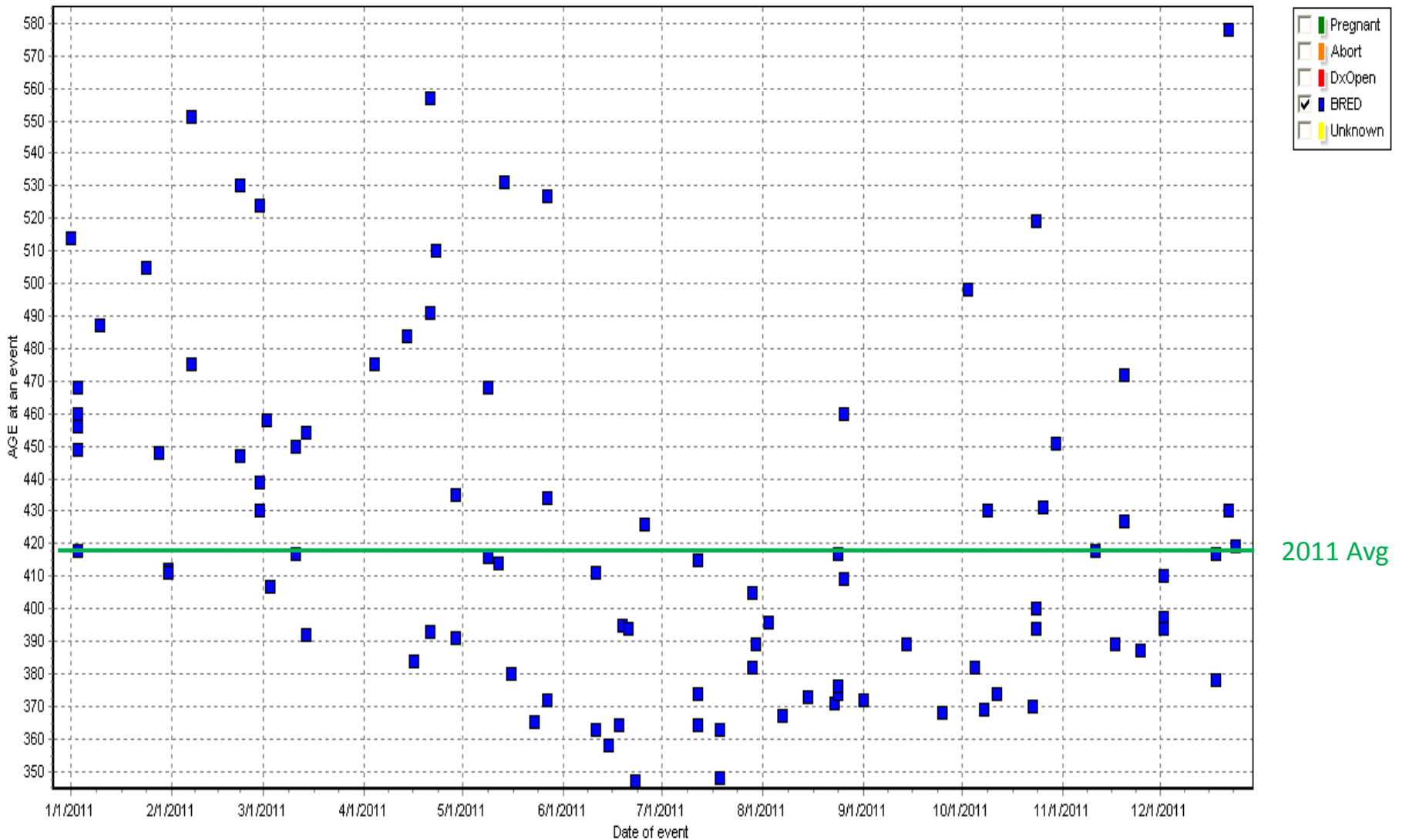
# Results

Recommended height at first breeding  
is 52 inches for heifers in appropriate body  
condition



# Age at conception for heifers in 2011

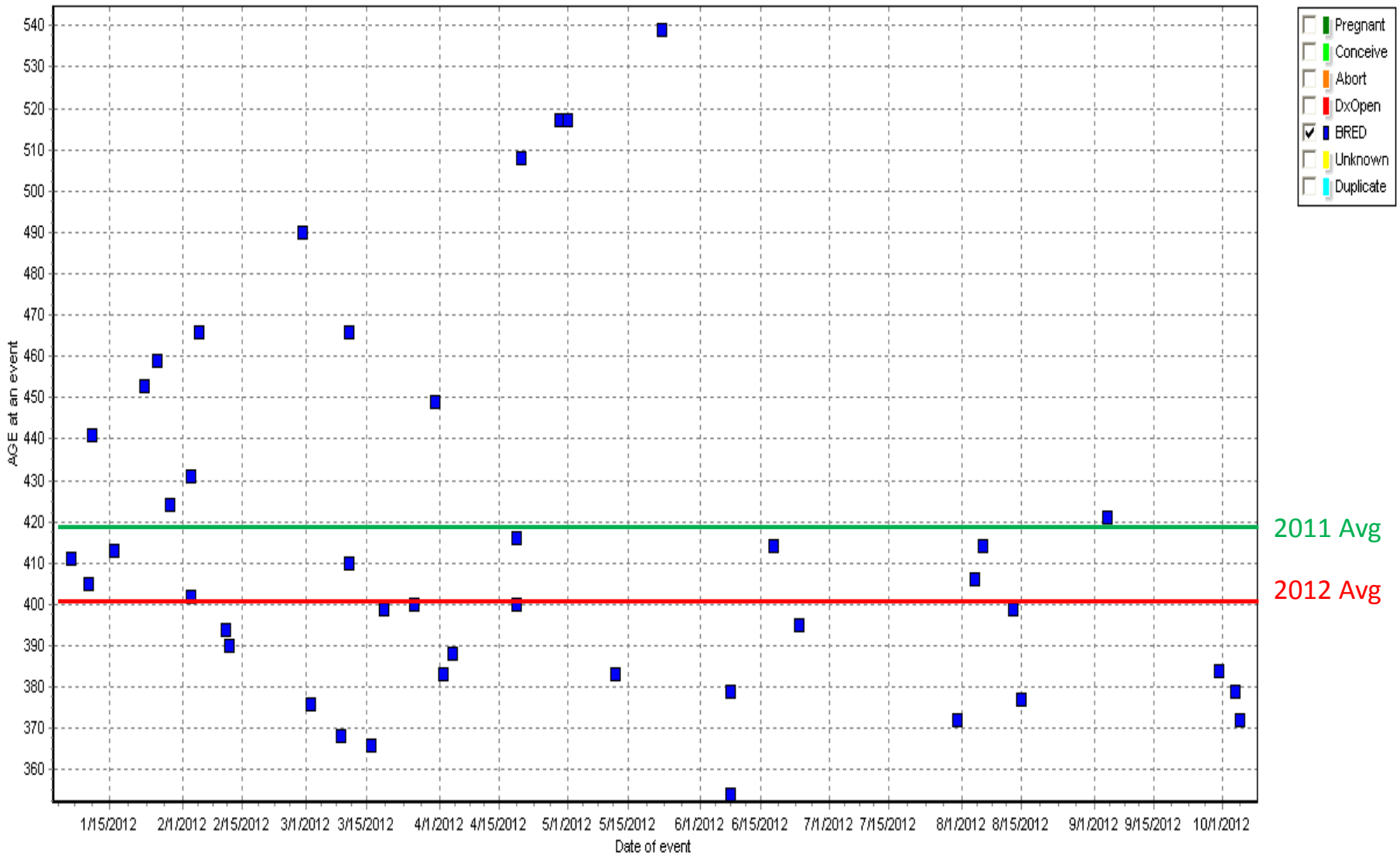
[BRED] EGRAPH EC=5 1YASR





# Age at conception for heifers in 2012

[BRED] EGRAPH EC=5 1YASR



# Economics of Increased Protein Feeding

Cost of raising a replacement heifer	\$84/month \$42/2 weeks
Cost of increased protein feeding (Starter and Grower)	\$100/heifer
Net difference	-\$60/heifer

**Why would anyone feed a higher protein heifer ration????**

# Where's the \$\$\$?

- Recent studies suggests heifers on accelerated calf diets produce +500 kgs in 1<sup>st</sup> lactation
- The math:
  - 500 kgs X \$0.70 = **\$350!!!**

**Does it pay to feed a higher protein ration now???**

# Acknowledgements

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# References

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## **Definition of Insanity**

Doing the same thing over and over and  
expecting different results.

-Albert Einstein

# Questions?