

Bull pH Survey: Implications for the NZ meat industry

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Farming, Food and Health. **First**

Te Ahuwhenua, Te Kai me te Whai Ora. Tuatahi

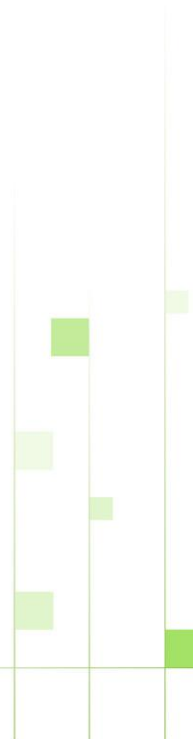


Acknowledgement

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AgResearch Meat Science team: For conducting the survey
Eva Wiklund, Pete Dobbie, Debbie Frost, Adam Stuart and
Dominic Lomiwes

Meat Industry: For the use of their facilities and for the
samples collected

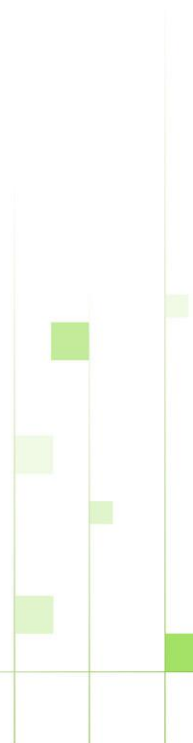


Aim of the survey



To determine the intermediate pH status of NZ bulls

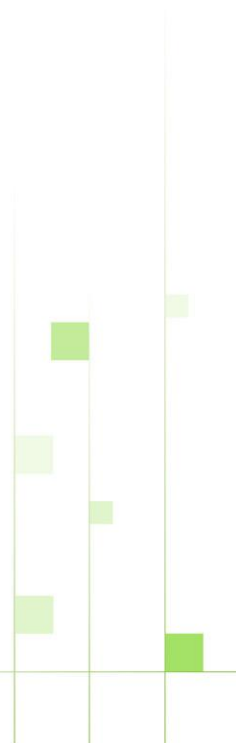
...for the purpose of developing a suite of tools to improve the quality and consistency of beef from these bulls and make it available to the New Zealand meat industry



Outcomes of previous pH surveys

- **Purchas (1990)**
 - Mean ultimate pH for bulls (n = 80) = 6.35

- **Graafhuis and Devine (1994)**
 - Mean ultimate pH for all cattle (n = 2969) = 5.79
 - Mean ultimate pH of bulls (n = 766) = 6.16
 - 60% of bulls have pH greater than 6.0
 - Ultimate pH was higher (5.77) in autumn than in spring (5.63)



pH and Tenderness

pH value

5.5 - 5.8
(normal pH value)

Tender meat



5.8 - 6.2
(intermediate pH)

Tougher meat
Inconsistent quality

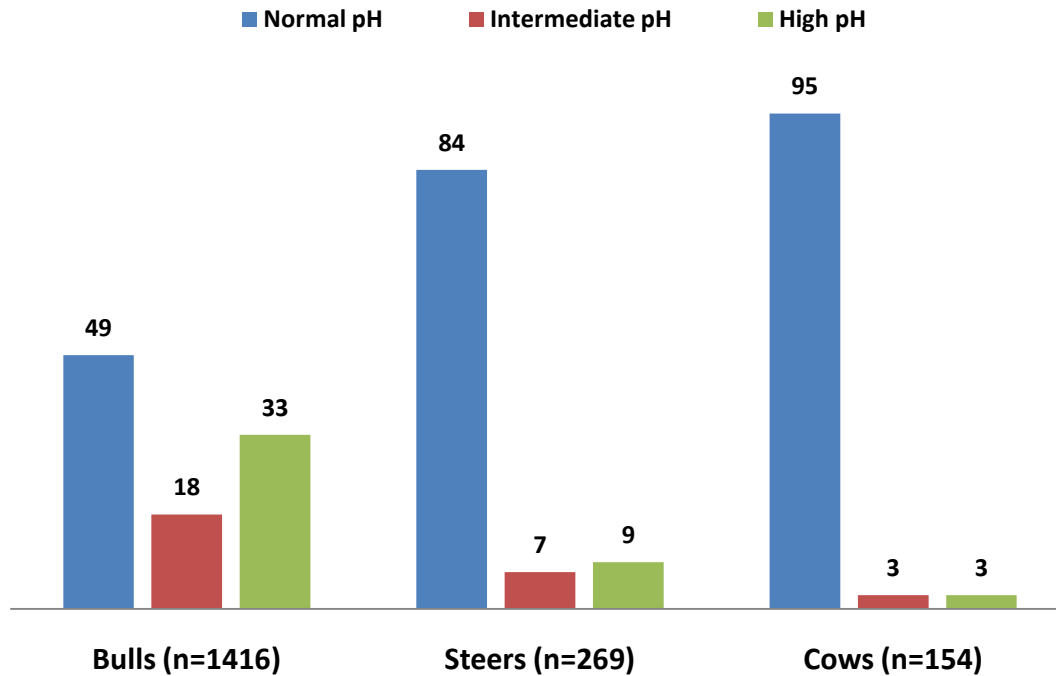
> 6.2
(high pH, DFD meat)

Tender meat
Dark, Firm, Dry



Survey results; categories

All categories and seasons Total survey



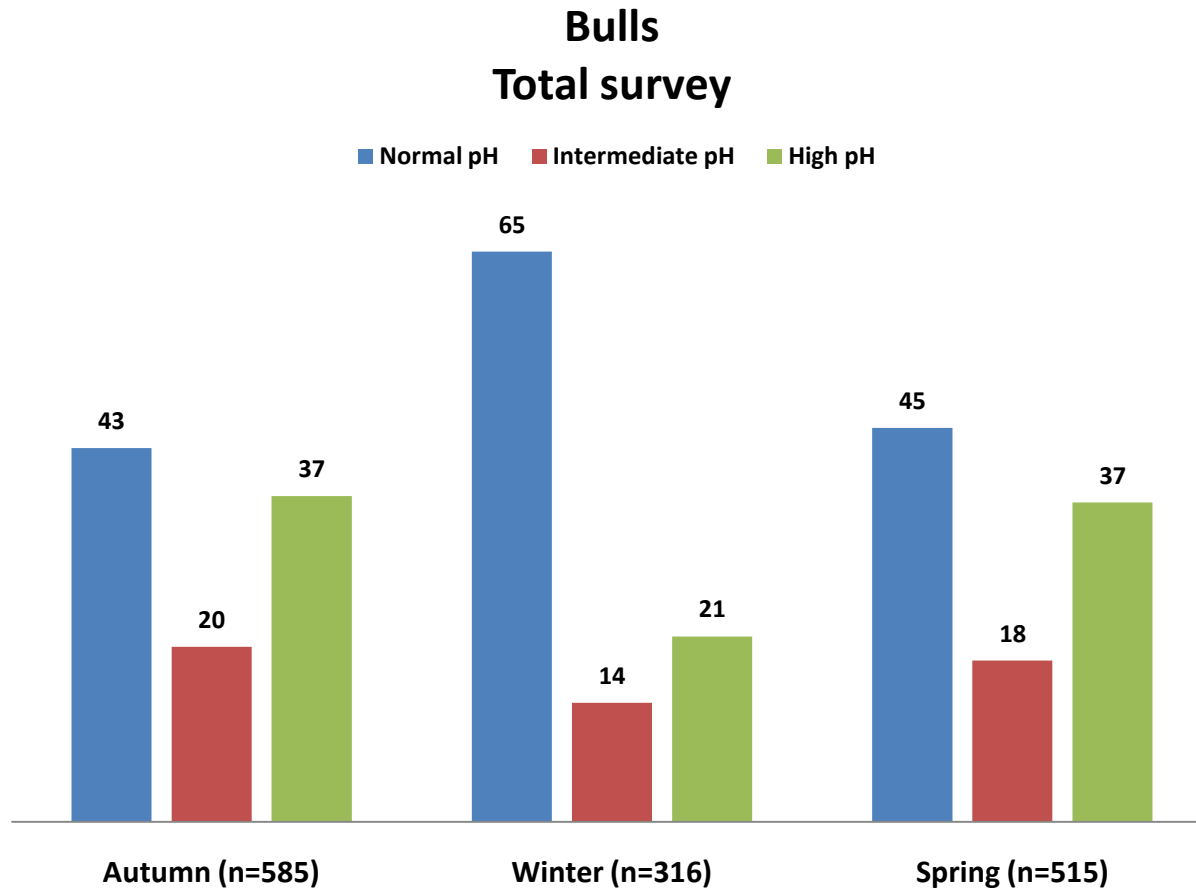
Mean pH:

5.99

5.61

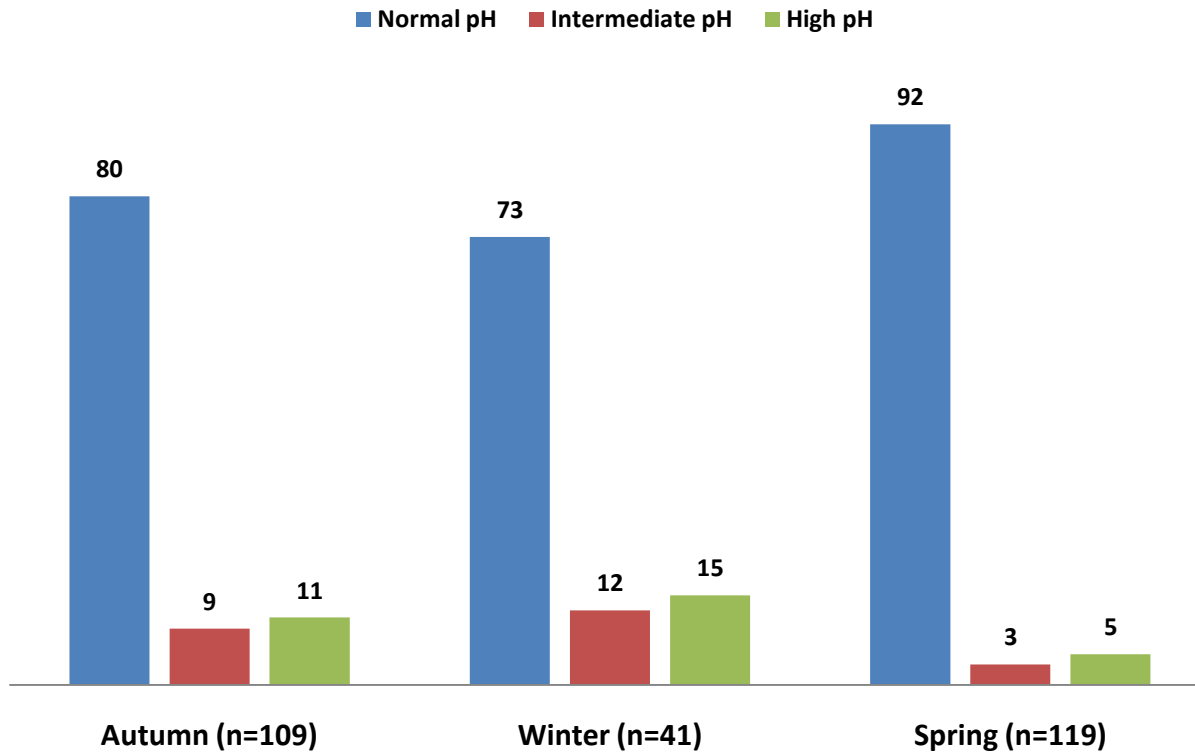
5.53

Survey results; seasons



Survey results; seasons

Steers Total survey



Conclusions

- The overall pH status (frequency of normal pH) of bull beef has improved from the last comprehensive survey in 1994 (49% now vs. 29% then)
- Incidence of normal pH bull beef is higher in winter relative to spring and summer
- A substantial number of bulls (51%) are still in the intermediate and high pH range
- Work within our wider research program will address the high proportions of intermediate and high pH values in bull beef

