



# Finding the right match: A comparative study between male line and diet

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## Problem

- Feed costs are the largest cost in broiler production it is important to determine ways to decrease costs and increase overall profitability
- Substitution of wheat in Canadian commercial broiler rations is frequently done to reduce feed costs

## Introduction

- Significant strain differences in feed conversion rate (FCR) and growth have been shown between different cereal diets [1]
- The inclusion rate of wheat in broiler diets can vary substantially among regions
- When making male line selections it is important to fully understand the cereal effect on overall growth, efficiency and yield.
- We hypothesized that birds from the European male line would perform better than the North American Male line on wheat based diets

## Objective

- To determine the growth, efficiency, and yield responses to corn and wheat based diets in Ross 708 chicks from North America and European male lines

## Materials and Methods

### Experimental Design

- Ross 708 x Two Broiler Male Lines
  - European Male Line (EU ML)
  - North American Male Line (NA ML)
- Diet
  - Corn
  - Wheat
- 3,200 broilers raised with a stocking density of 0.74 ft<sup>2</sup>/bird
- Group body weights and feed intake data were collected at placement, day 10, 25, and 35
- FCR was calculated
- At 36 days of age 288 broilers were processed at the ACPPTC
- In addition to individual body weights at processing, Pectoralis major and minor, thighs, drums, wings and fat-pad weights were collected

## Results

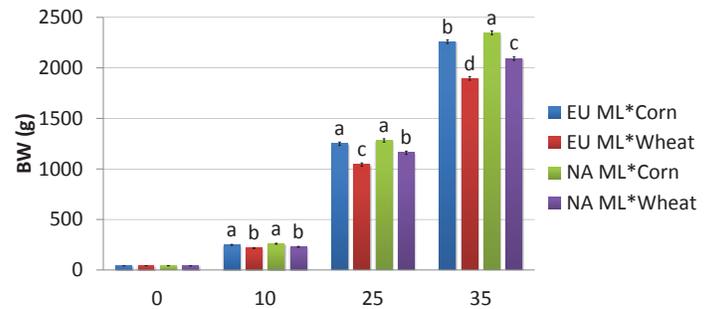
- Total breast muscle yield was high in the corn treatment compared to the wheat treatment (Figure 1)
- Thigh yield was lower in European male line fed corn than the other treatments (Figure 1)
- There was no statistical difference in FCR among treatments (Average = 1.84)

## Results



**Figure 1:** Strain and Cereal effects on total breast (P. Major & P. Minor), drum, thigh, and wing yield. Different letters show significant differences ( $P > 0.05$ )

- European male line on wheat had a lower overall BW, fat-pad and total breast yield, however the highest drum and wing yield (Figure 1, 2)
- Wheat treatments had a lighter overall body weight compared to corn treatments from 10 days of age until 35 days (Figure 2)



**Figure 2:** Average body weight by treatment at 0, 10, 25 and 35 days after hatch. Different letters show significant differences ( $P > 0.05$ )

## Conclusions

- Based on our data we conclude that the North American male line had a higher BW and breast muscle yield on corn and wheat diets than the European male line
- Yield increases were greater between the cereal treatments (corn and wheat) than the strain treatments (NA ML and EU ML).
- The North American male line appears to be better suited for growth in Alberta than the European male line

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## References

- 1 KORVER, D.R., ZUIDHOF, M. J., and LAWES, K. R. (2004) Performance Characteristics and Economic Comparison of Broiler Chickens Fed Wheat- and Triticale-Based Diets. *Poultry Science* 83: 716-725.