

Nutritional evaluation of new forage barley and oat varieties as silage sources in high-producing dairy cows

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Outline:

Background

Objectives

Experimental Design

Data and Results

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Questions



Background

- Importance of forages in dairy cattle diets
 - Maintaining rumen function – chewing and rumination
 - Supply 40% of net energy of lactation
- Forage quality
 - To promote high DMI,
 - milk production,
 - animal health, and
 - farm profitability



Picture: Jensen Jean

Background

- Barley is the most common forage used across western Canada
- Other forages can be used to increase farm diversity; ie. Oat silage
- The Crop Development Centre (CDC) has developed 2 new varieties;
 - CDC Renegade → Barley
 - CDC Arborg → Oat

Objectives

1. To determine the ensiling characteristics of new silage varieties
2. To compare the effects of feeding new silage varieties on feed intake, milk production and composition

Experimental Design

- Housed at the Rayner Dairy Research and Teaching Facility
- 4 test silages: Conlon, Rosser, CDC Renegade, CDC Arborg
- 8 multi-parous cows
 - Approximately 50 DIM
 - ≥ 50 kg/d milk yield
- Diets formulated at a 50:50 forage to concentrate ratio
- Cows fed 1x daily, and milked 3x daily

Diet Ingredient Composition, % of DM

Ingredient	Conlon	Rosser	Renegade	Arborg
Conlon Barley Silage	29.12	-	-	-
Rosser Barley Silage	-	29.12	-	-
CDC Renegade Barley Silage	-	-	29.12	-
CDC Arborg Oat Silage	-	-	-	29.12
Rayner Mineral	2.57	2.57	2.57	2.57
Rayner Protein Mix	13.52	13.52	13.52	13.52
Canola Meal Crush	7.48	7.48	7.48	7.48
Beet Pulp	2.68	2.68	2.68	2.68
Dry Rolled Corn	18.95	18.95	18.95	18.95
Oat/Pea Greenfield Pellet	25.67	25.67	25.67	25.67

Diet Chemical Composition, % DM

	Conlon	Rosser	Renegade	Arborg
DM, %	55.1	55.0	51.3	54.0
CP, % DM	18.56	18.61	18.92	18.30
EE, % DM	4.81	4.65	4.74	4.52
ADF, % DM	21.32	21.58	22.44	22.60
NDF, % DM	35.18	35.64	36.30	37.30
Starch, % DM	18.07	17.30	16.32	16.40
Net Energy of Lactation, Mcal/kg	1.50	1.46	1.47	1.47

Table 1. Silage Characteristics

Conlon Rosser Renegade Arborg

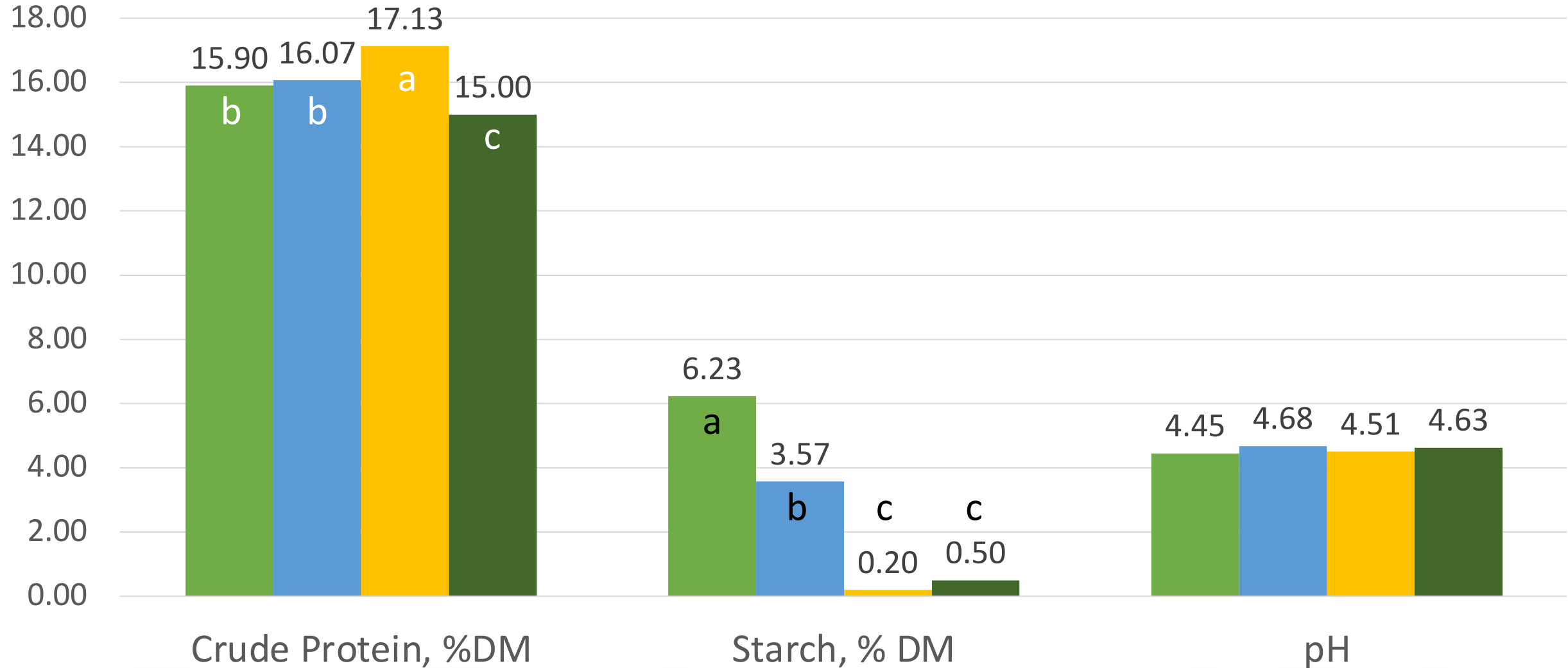


Table 1: Silage Characteristics Continued

■ Conlon ■ Rosser ■ Renegade ■ Arborg

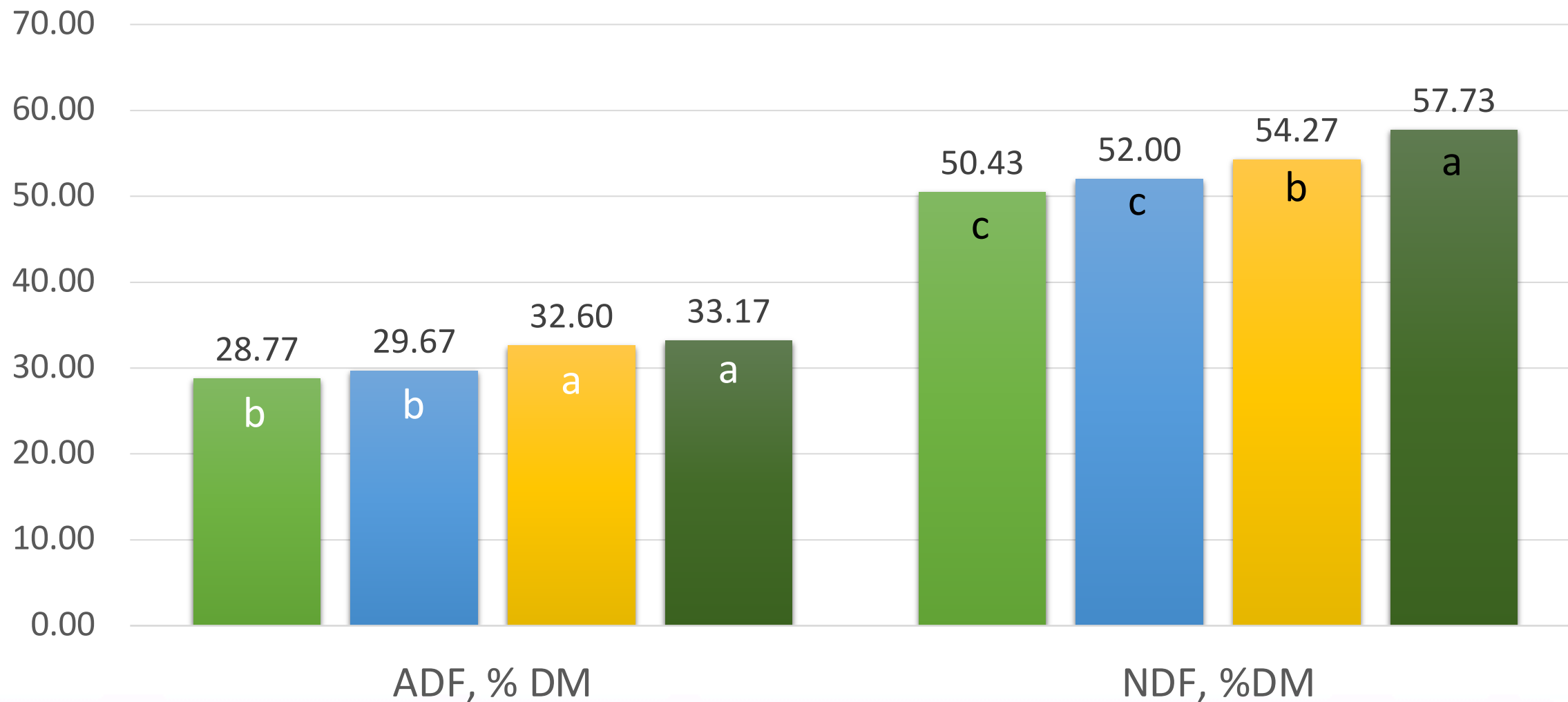


Table 2. Treatment effect on dry matter intake and milk production

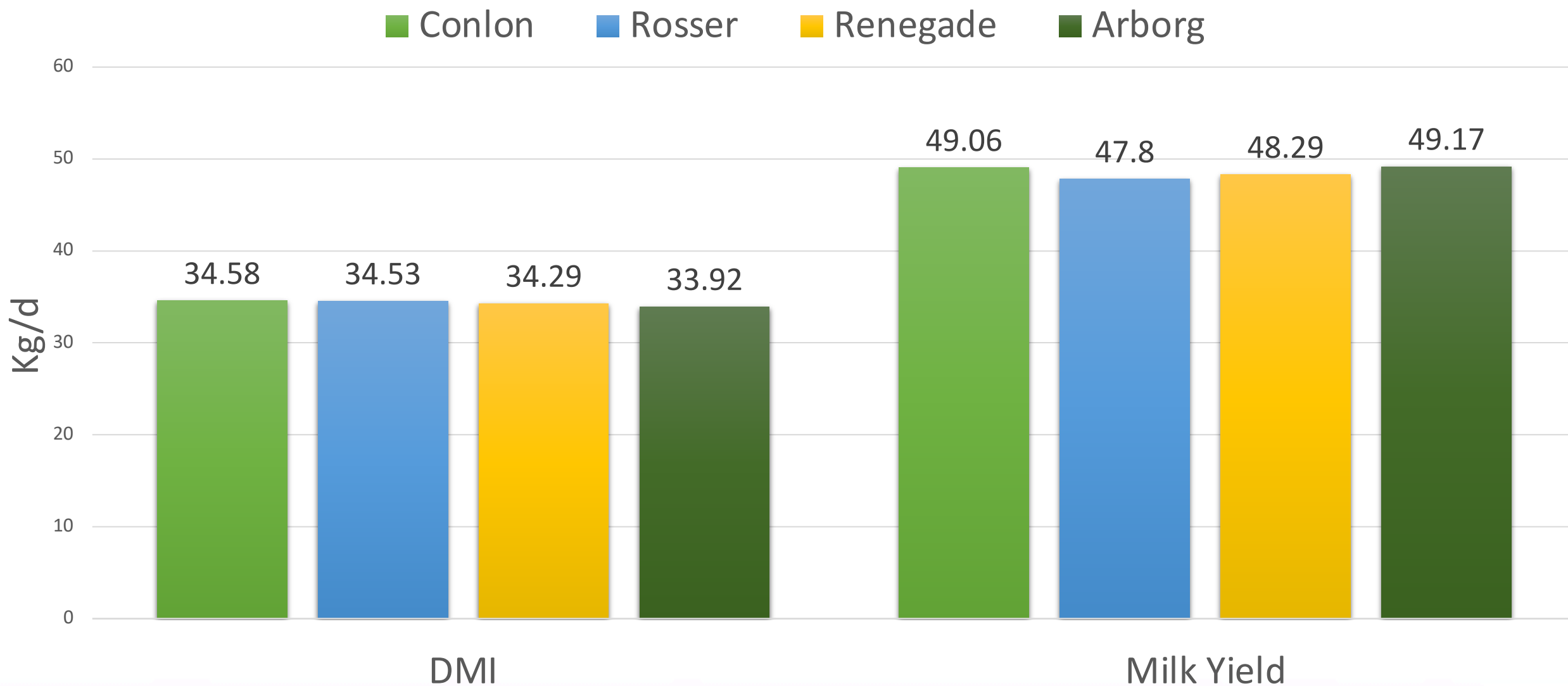


Table 3. Treatment effect on milk fat

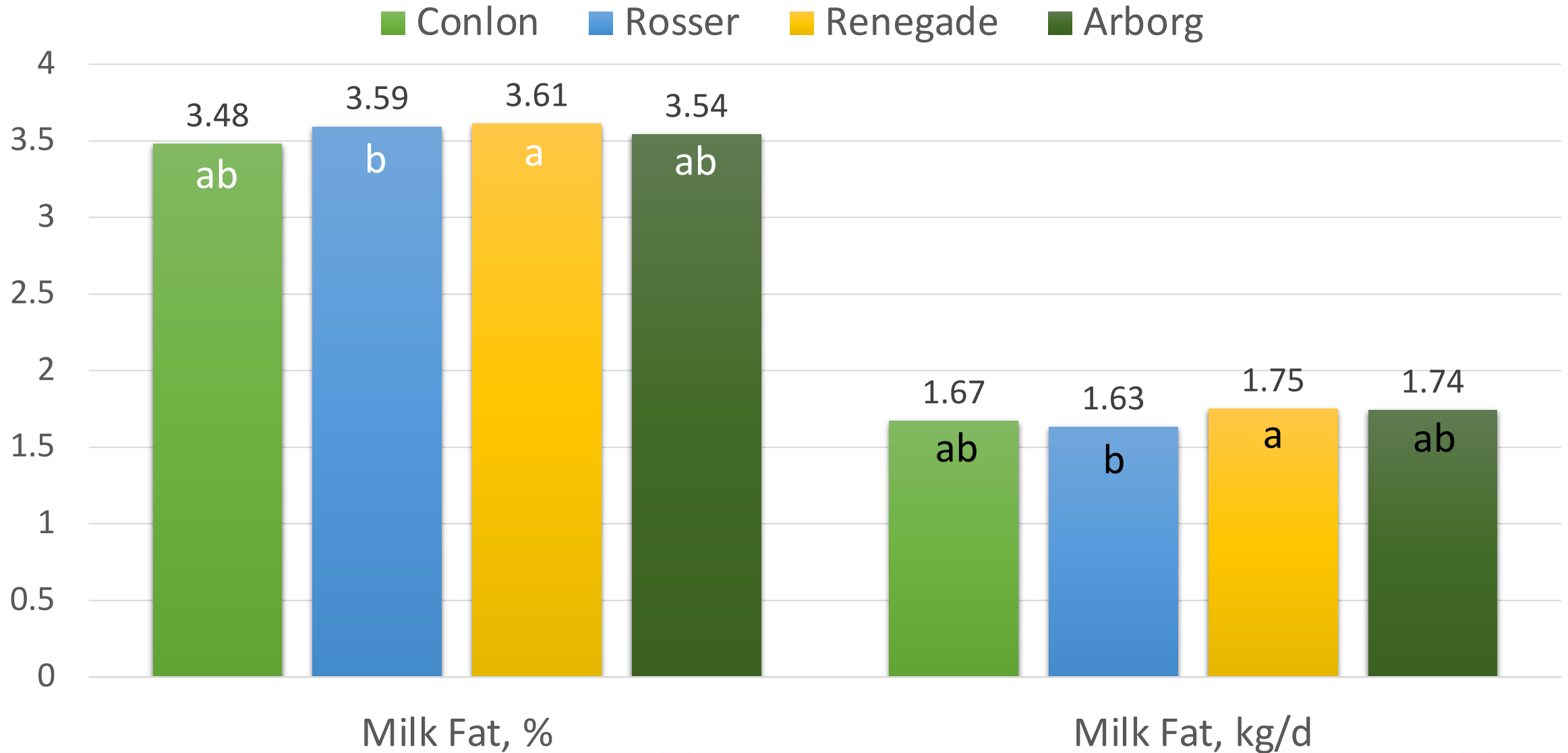
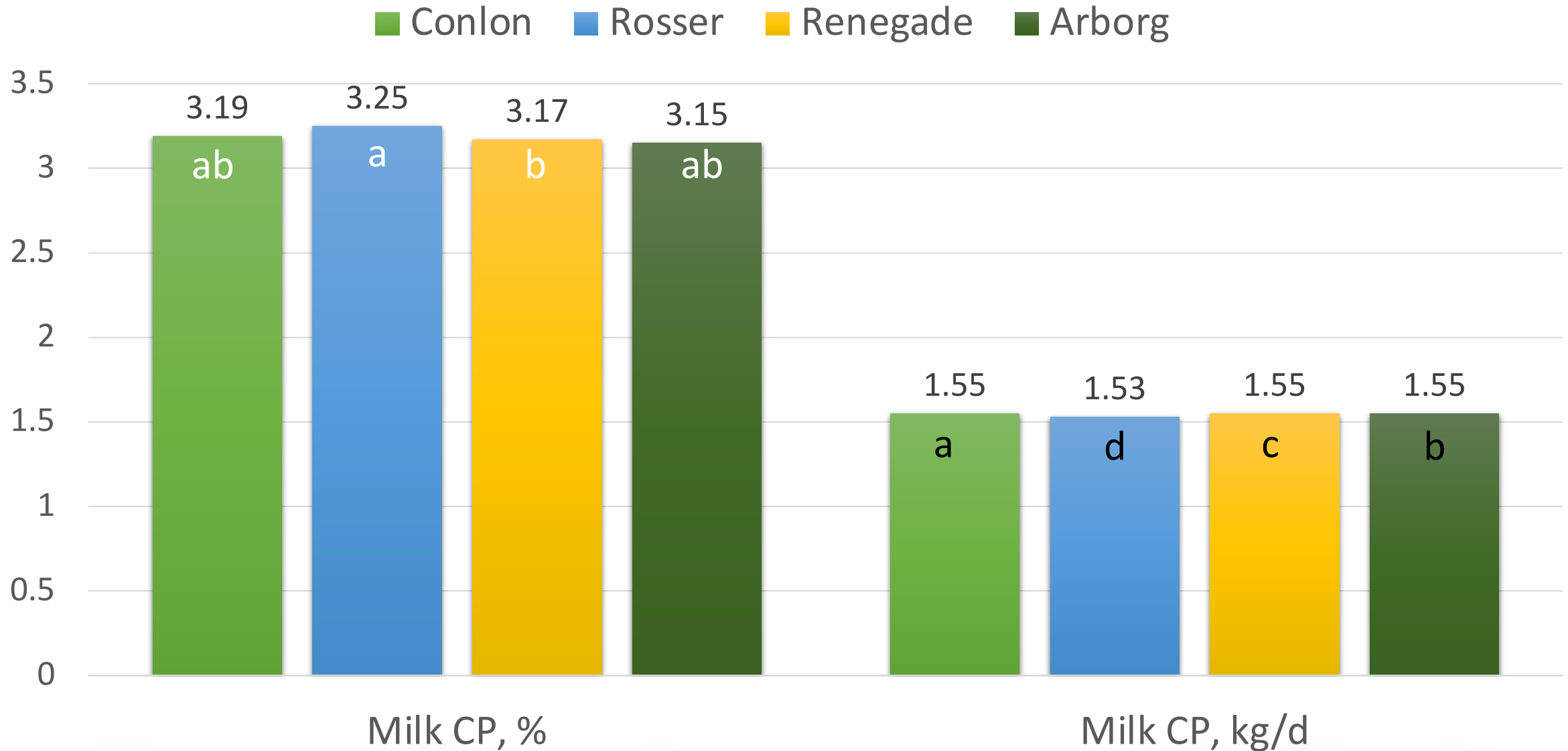


Table 4. Treatment effect on milk protein



Conclusions

CDC Renegade and CDC Arborg can compare to common barley varieties used today, Conlon and Rosser, and support similar intakes and production yields

Thank you!

Questions?

