A pool of 2 studies confirms that XTRACT® Ruminant increases performance of dairy cows

INTRODUCTION AND OBJECTIVES

The use of XTRACT® Ruminant, code X60-7065, for dairy cows has raised more and more interest over the last years, due to its potential to improve feed efficiency as it does in beef cattle, and to minimize performance reduction during the summer season. To validate this, two consecutive trials have been set up. The objective of the present Technical Bulletin is to assess the effect of XTRACT® Ruminant on performance of dairy cows through a pool of these 2 studies.

MATERIALS AND METHODS

Two similar trials were conducted on a commercial dairy farm in Israel: the first one was set up in 2011, the second in 2013. More details on these 2 trials are available in Technical Bulletins 711 and 725. The characteristics of adapted data used from both studies are detailed in the table.

	TRIAL 1	TRIAL 2
Number of cows (Israeli Holstein)	60	140
Average parity	3.7	3.5
Average days in milk at start	157	138
Average THI[1]	90.2	80.1

In both trials, cows were assigned to one of the two following treatments (treatment groups were housed in two separate pens):

- Control: unsupplemented basal TMR
- XTRACT®: basal TMR +1 g/hd/d XTRACT® Ruminant, code X60-7065. The product was blended into the ration at each feeding.

Measurements

Performance parameters were measured per pen and per month: dry matter intake, milk yield, milk composition (fat %, protein%, somatic cell count – SCC).

Energy corrected milk was calculated using the following equation[2]:

$$ECM = \frac{(0.0929 * \text{fat\%} + 0.0563 * \text{true protein\%} + 0.192) * \text{kg milk}}{0.68605}$$

Feed efficiency was calculated as the ratio between milk production and DM intake

Statistical analysis

Analyses included only the cows that were present during the whole trial duration, and data from June until September were considered. Monthly data per pen and per experiment were analyzed by ANOVA with repeated measures using pen as the experimental unit and trial as a random variable.

1 Temperature Humidity index (a THI of 72 or greater is considered heat stress for dairy cows)

2 Energy density of milk containing 3.5% fat and 3.0% protein; Nutrient Requirements of Dairy Cattle. 2001. 7th rev. ed. National Academy Press, Washington, D.C

Voie-des-Traz 6, CH-1218 Le Grand-Saconnex (Geneva) - Switzerland - Tel: +41 22 929 84 84 - Fax: +41 22 929 84 95
Zone Industrielle d'Arlod, F-01200 Bellegarde s/Valserine - France - Tel: +33 450 48 52 11 - Fax: +33 450 48 60 40
1504 Rue Michaud, Drummondville QC –J2C 2Z5 - Canada - Tel: +1 819 474 99 44 - Fax: +1 819 474 99 55
Agreement N°: France, α FR 01 033 03 / FR 01 033 04 - Switzerland, α CH 31346 - Canada, α CA 00A 052 FR

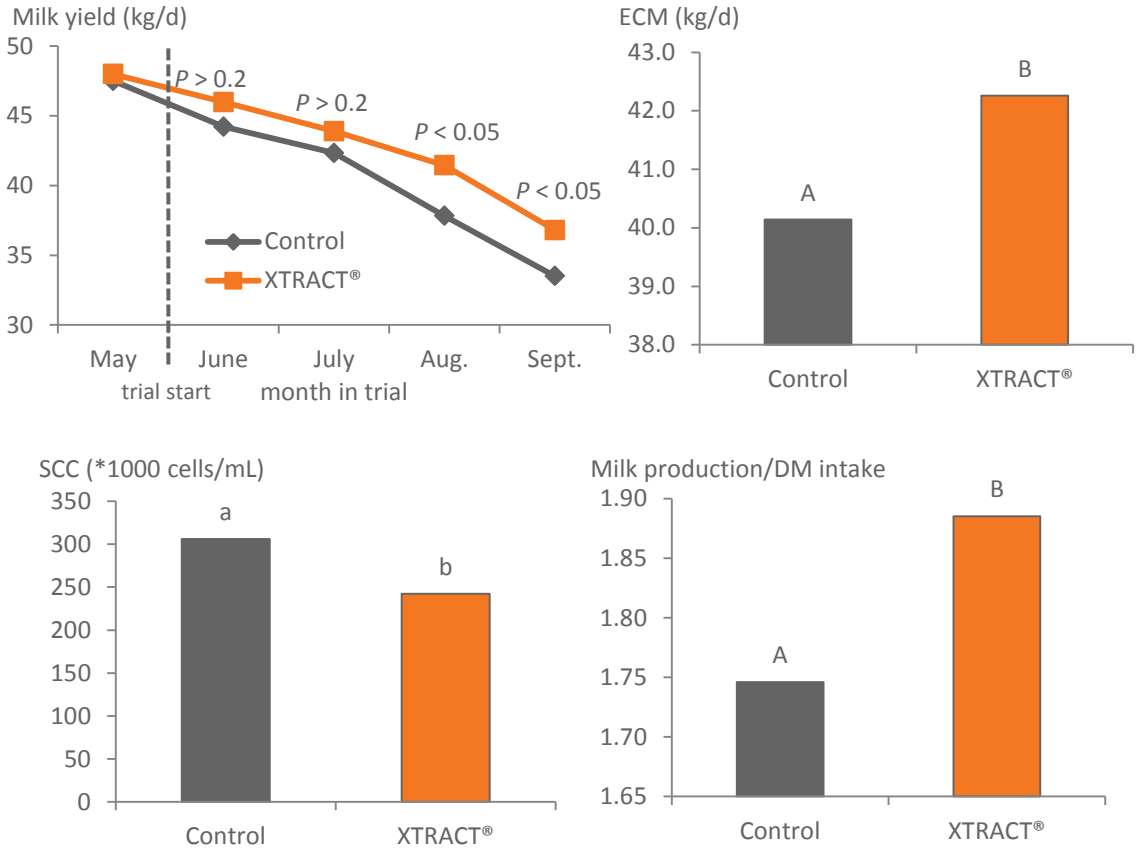
RESULTS AND CONCLUSION

Milk production, ECM, DM intake, and apparent feed efficiency were significantly affected by the month ($P < 0.05$). More specifically, milk production decreased over time. However, there was no significant interaction between the month and XTRACT® supplementation ($P > 0.30$), suggesting that the month in trial did not affect the cows' response to XTRACT®.

The supplementation of XTRACT® significantly increased milk yield by 6.5% (39.4 vs 42.2 kg/hd/d respectively for control and XTRACT®, $P = 0.01$), especially in August and September (see figure). This suggests that XTRACT® enhanced lactation persistency. In parallel, XTRACT® affected neither milk fat % (mean of 3.45%, $P = 0.89$) nor milk protein level (mean of 3.15%, $P = 0.29$). As a result, cows fed XTRACT® exhibited a higher ECM production compared to un-supplemented cows (+5.3%, $P< 0.01$). In addition, XTRACT® reduced SCC by 20.8% ($P = 0.04$).

EFFECT OF XTRACT® ON PERFORMANCE OF DAIRY COWS

(A, B, $P < 0.01$; a, b, $P < 0.05$)



Finally, XTRACT® did not affect DM intake of the cows (mean: 22.6 kg/hd/d, $P = 0.72$). Combined with the increase of milk production, XTRACT® enhanced therefore apparent feed efficiency of the cows by 8.0% ($P < 0.01$).

XTRACT® Ruminant improves milk yield, milk quality and apparent feed efficiency of dairy cows