



Sprayfo Technical bulletin

A LifeStart feeding schedule with Sprayfo Delta improves pre-weaning growth and results in earlier breeding

LIFESTART
SETS LIFE PERFORMANCE

 **trouw nutrition**
a Nutreco company



Introduction

The quality of early life nutrition in dairy calves has a big impact on pre-weaning daily gain^{1,2,3,4,5,6,7,8,9,10} preparing heifers for optimal lifetime production. Several authors have shown that LifeStart feeding schedules improve fertility^{5,9,10} making it one of the drivers of an increase in average life-time daily gain.

Sprayfo Delta is an energised calf milk with an elevated level of fat, designed with wholemilk as the reference. The effect of a LifeStart feeding schedule with Sprayfo Delta on growth and fertility was compared to a restricted feeding schedule with a traditional calf milk replacer.

Study design

A group of 60 calves was fed Sprayfo Delta from birth until they were weaned at 63 days of age. The amount of Sprayfo Delta fed over the entire period of 63 days was 43.6 kg. A control group was fed an amount of 34.1 kg of traditional calf milk replacer with 18% fat and weaned at 56 days of age.

Both groups had ad libitum access to starter feed. Calves were weighed at 63 days and 91 days of age and intake of starter feed and fertility parameters were recorded.

Results

Starter intake was not different between the 2 groups with an intake of 20.6 kg for the calves in the Sprayfo Delta group vs. 19.6 kg for the control calves fed the traditional CMR.

Average daily gain of both groups from birth to day 63 and from birth to day 91 is presented in figure 1. At day 63 calves in the Sprayfo Delta group weighed 6,7 kg more than the calves in the group fed the traditional CMR. By day 91, this difference had increased to 8.1 kg.

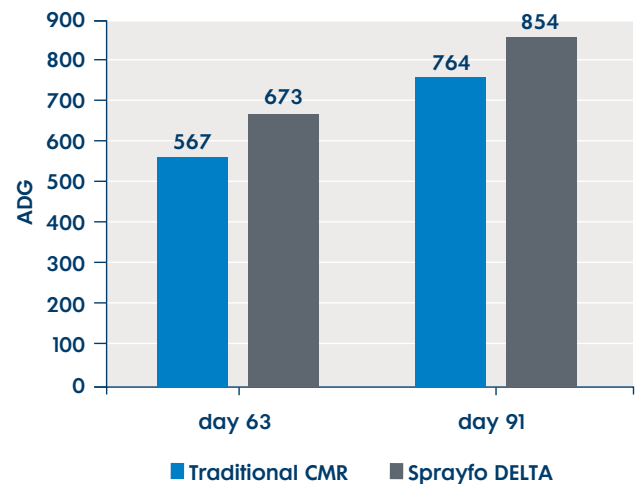


Figure 1: Average daily gain at day 63 and at day 91 of calves fed Sprayfo Delta or a traditional CMR.



The age at 1st insemination went down from 13.7 months for the controls to 12.4 months for the ECM group, with a conception rate at 1st insemination of 73.4% for the ECM group vs. 62.0% for the controls.

	Sprayfo Delta	Traditional CMR
Age at 1st insemination	12.4 months	13.7 months
Conception rate at 1st insemination	73.4%	62.0%

Figure 2: Fertility parameters

Conclusion

The amount of energy fed in a LifeStart feeding program can be elevated by increasing the level of fat in a calf milk replacer. Sprayfo Delta is a calf milk replacer with an increased level of fat. A LifeStart feeding schedule with Sprayfo Delta resulted in an increase of average daily gain which in term resulted in an improvement of fertility.

References

1. Shamay, A., D. Werner, U. Moallem, H. Barash, and I. Bruckental. 2005. Effect of nursing management and skeletal size at weaning on puberty, skeletal growth rate, and milk production during first lactation of dairy heifers. *J. Dairy Sci.* 88:1460–1469.
2. Faber, S. N., N. E. Faber, T. C. McCauley, and R. L. Ax. 2005. Case study: Effects of colostrum ingestion on lactational performance. *Prof. Anim. Sci.* 21:420–425.
3. Davis Rincker LE, VandeHaar MJ, Wolf CA, Liesman JS, Chapin LT and Weber Nielsen MS, Effect of intensified feeding of heifer calves on growth, pubertal age, calving age, milk yield, and economics. *J. Dairy Sci* 94:3554-3567 (2011).
4. Moallem, U., D. Werner, H. Lehrer, M. Zachut, L. Livshitz, S. Yakoby, and A. Shamay. 2010. Long-term effects of ad libitum whole milk prior to weaning and prepubertal protein supplementation on skeletal growth rate and first-lactation milk production. *J. Dairy Sci.* 93:2639–2650.
5. Raeth-Knight, M., H. Chester-Jones, S. Hayes, J. Linn, R. Larson, D. Ziegler, B. Ziegler, and N. Broadwater. 2009. Impact of conventional or intensive milk replacer programs on Holstein heifer performance through six months of age and during first lactation. *J. Dairy Sci.* 92:799–809.
6. Drackley, J. K., B. C. Pollard, H. M. Dann, and J. A. Stamey. 2007. First-lactation milk production for cows fed control or intensified milk replacer programs as calves. *J. Dairy Sci.* 90(Suppl. 1):614.
7. Terré, M., C. Tejero, and A. Bach. 2009. Long-term effects on heifer performance of an enhanced growth feeding programme applied during the pre-weaning period. *J. Dairy Res.* 76:331–339.
8. Soberon F, Raffrenato E, Everett RW and Van Amburgh ME. 2012. Preweaning milk replacer intake and effects on long-term productivity of dairy calves. *J. Dairy Sci.* 95:783-793.
9. Bar-Peled et al., 1997. Increased weight gain and effects on production parameters of Holstein heifer calves that were allowed to suckle from birth to six weeks of age. *J. Dairy Sci.* 80:2523-8.
10. Bolt, A. 2019, Meta-analysis to calculate the effect of rearing intensity on functionality of dairy cows, Research paper Mecklenburg Vorpommern Landesforschungsanstalt für Landwirtschaft und Fischerei.
11. Heras Sanchez, J, personal communication.



For more information

about the science
behind Sprayfo visit:
ruminants.lifestartscience.com



about Sprayfo visit:
www.sprayfo.com



Sprayfo is a brand of Trouw Nutrition, a global leader in animal nutrition, specialising in the development of innovative feed technologies, premixes and unique software solutions. Quality, innovation and sustainability are the guiding principles behind what we do – from research and raw material procurement, to the delivery of cutting-edge products and services designed to increase animal production efficiencies.