Agrarian SOLUTIONS

The Effect of Cow Start™ Complete on Milk Production and Reproduction

Dairy cows experience multiple sources of inflammation during the transition period associated with calving. Recent research suggests that resolving inflammation in transition cows may result in greater milk production and reproductive success than calcium supplementation. A study was conducted from 2024 to 2025 at a large dairy in the United Kingdom to evaluate the ability of Cow Start™ Complete administered at calving to improve milk production and reproductive success.

PROCEDURES

The study was conducted on a well-managed 5,000 cow commercial dairy farm from calving to 200 days in milk. The pre-fresh diet utilized a negative-DCAD strategy. Before calving 140 3rd-lactation and greater Holstein cows were assigned one of two treatments to be given at calving. Groups were balanced for parity and previous lactation milk yield. Treatments were two oral calcium products provided at calving (1 kg Farm-O-San Reviva and one Bovikalc® bolus per cow (OC2)) or two Cow Start Complete boluses at calving (CSC)(Figure 1). Characteristics of the two research groups are listed in Table 1. The OC2 and CSC cows were housed, fed and managed identically from calving through completion of the study.

Figure 1. Description of Research Treatments

OC2

Farm-O-San Reviva
- Powder mixed with 5 gallons of water offered as a drink immediately after calving
- Contains ~1lb of sugar
- Delivers large amounts of Vit A and Vit E
- Provides some Vit D3
- Also contains small amounts of Iron, Mn, Se, and yeast

Bovikalc®
- One bolus given at calving
- Poured bolus that quickly dissolves in the rumen
- Source of rapidly available calcium chloride and calcium sulfate

CSC

Cow Start™ Complete
- Two boluses given at calving
- Pressed bolus that dissolves over 48hr providing sustained release of nutrients
- Seaweed derived source of over 70 minerals including Ca
- Includes Vit D3 for optimal Ca absorption
- Provides immune system support with Vit E and Se yeast

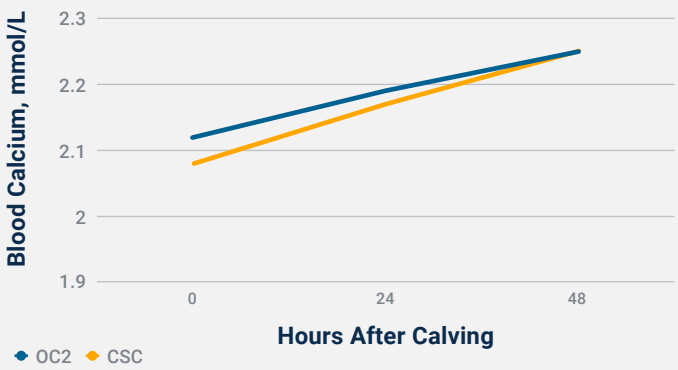
Table 1. Descriptions of Research Treatment Groups		
Item	OC2	CSC
Number of cows	70	70
Lactation number	3.8	3.9
Previous 305d milk yield, lb	30,072	30,505
Previous average daily milk yield, lb	96.4	96.8
Products administered at calving, per cow	1 kg Farm-O-San Reviva and 1 Bovikalc® bolus	2 Cow Start™ Complete boluses

Blood samples were taken before the OCS and CSC treatments were given at calving, 24 and 48-hr post-calving and were assayed for total calcium at Axiom Veterinary Labs (Devon, UK). Health events were recorded by trained farm employees and a staff veterinarian. Body condition score was determined by visual imagery weekly. Daily rumination minutes were recorded with a cow activity system. Cows were milked 3X/d and individual daily milk weights recorded. Cows were bred off natural heats after a 50-d waiting period, and cows not ready to breed were enrolled in an Ovsynch program. The Ovsynch enrollment, days to first service, days to conception and % pregnant after first service were documented.

RESULTS AND DISCUSSION

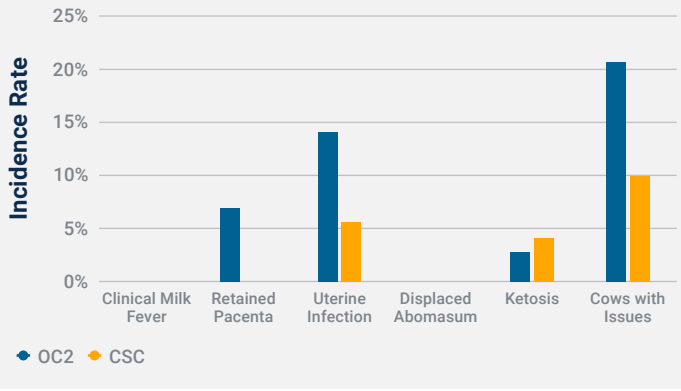
Blood Ca concentrations did not differ between the research groups (Figure 2) after calving and were >2.00 mmol/L or normo-calcemic at 0h, 24h and 48h after calving. Due to similar blood Ca concentrations, all further differences in the trial are due to factors other than Ca.

Figure 2. Blood Calcium



The number of cows per research group precludes statistical differences being detected for health events; however, the CSC cows generally exhibited fewer transition health events (Figure 3).

Figure 3. Metabolic Challenges



The CSC cows ruminated more (P<0.05) minutes daily than the OC2 cows during the first 14 d post-calving (488 vs 473 min/d) (Figure 4). This may correspond to slightly higher feed intakes in CSC, but individual dry matter intake was not measured in this study due to both research groups being housed together. The OC2 cows lost more (P<0.001) body condition score the first 12 weeks after calving than CSC (-0.13 vs -0.29)(Figure 5). Over the first 100 DIM CSC cows made 5.3 lb more (P<0.001) milk per day (116.5 lb vs 111.2 lb) than the OC2 cows (Figure 6).

Figure 4. Rumination Time

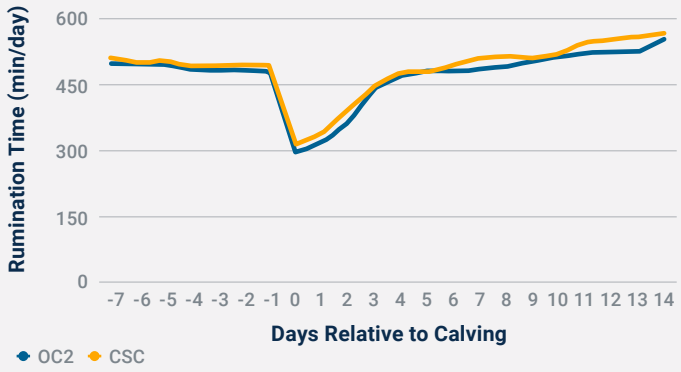


Figure 5. Body Condition Score

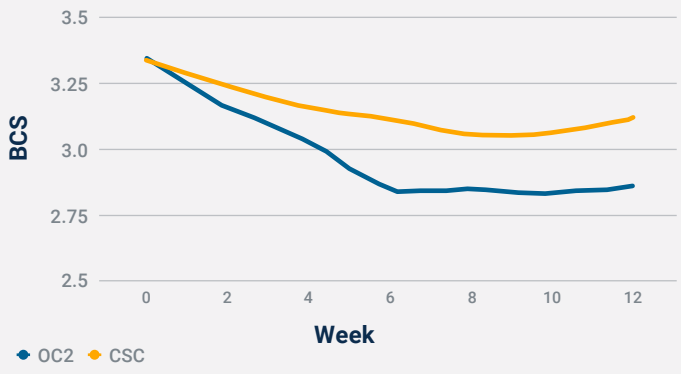


Figure 6. Daily Milk Production

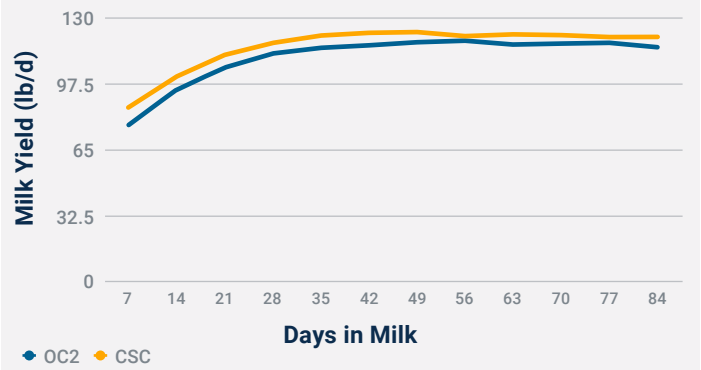
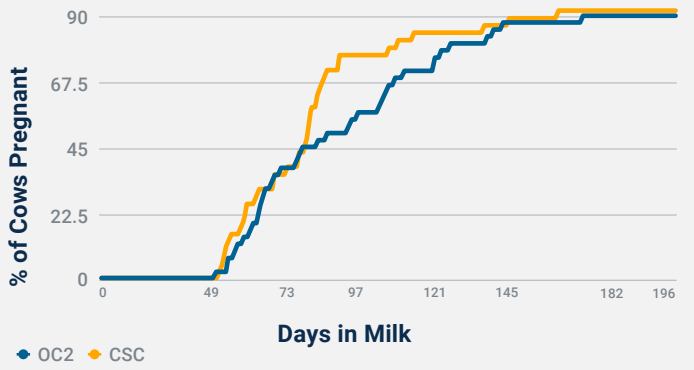


Figure 7. Figure 7. Total Percentage Cows Pregnant by Days in Milk



More OC2 cows needed to be enrolled in the Ovsynch program than CSC cows (26% vs 5%), and the CSC cows had fewer days to first service (67 d vs 69 d) and a greater % of cows pregnant after first service (63% vs 49%) than the OC2 cows (Table 2).

The CSC cows tended to get pregnant earlier in lactation than the OC2 cows as displayed in Figure 7 which graphs the total percentage of cows pregnant by DIM.

Table 2. Reproduction Data

Item	OC2[1]	CSC[2]
Number of Cows	70	70
Eligible for Breeding	43	40
Ovsynch Prog	26%	5%
Days to 1st Service	69	67
Days to Conception	89	83
Preg at 1st Service, % (n)	49% (21)	63% (25)
Serves/Conception	1.7	1.5
% Preg at 100 DIM	55.8%	75%
% Open at 200 DIM	11.6%	7.5%

[1] 1 kg Farm-O-San Reviva and 1 Boikalc bolus at calving.
[2] Two Cow Start Complete boluses at calving.

Administering the CSC boluses at calving may have helped the cows to better resolve inflammation, as evidenced by fewer health events, greater rumination minutes which could translate to higher feed intake and less body condition loss than the OC2 cows receiving two different Ca products. Better resolution of inflammation by the CSC cows would have allowed them to reallocate nutrients for improved body condition score, greater milk production and enhanced reproductive success than the OC2 cows. Interestingly, the OC2 cows would have received more vitamins A and E for immune support than the CSC cows, yet the antioxidant supplementation did not translate into improved immune function and inflammation resolution. The seaweed featured in the CSC boluses includes 70 minerals and trace minerals for immune support and to serve as co-factors for many physiological functions which may result in greater health, milk production and reproductive success observed in this study. Numerous studies in both humans and transition cows have shown that the seaweed elicits a natural anti-inflammatory response, demonstrated by lower level of inflammation markers such as SAA, TNFα and IL6. Importantly, the CSC boluses are manufactured utilizing pressure to assist in a slow, sustained release of nutrients in the rumen.

CONCLUSION

Providing two CSC boluses to Holstein cows at calving resulted in fewer transition health events, greater milk production and enhanced reproductive success compared to administering two different oral Ca products.

Agrarian SOLUTIONS 585 Shawnee St, Nappanee, IN 46550 • (574) 825-1224 • office@agrsol.com • **agrariansolutions.com**