



## **Does frequency of supplementation before calving impact cow and calf performance?**

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Since 2016, the Range Cattle REC (Ona, FL) has conducted multiple studies demonstrating that precalving supplementation of protein and energy (*2.2 lb of molasses/urea or dried distillers grains per cow per day for the last 70 days before calving*) could be implemented to increase cow body condition score (BCS) and pregnancy rates of thin cows (BCS < 5). These studies also observed that **precalving supplementation of protein and energy increased calf body weight at weaning by 25 lb** regardless of cow BCS at the time of calving (see Table 1). Recently, we discovered that a longer period of precalving supplementation of protein and energy (entire vs. half of third trimester of gestation) was required to maximize calf weaning weight.

Decreasing the supplementation frequency (1 or 3 times weekly vs. daily) is a common strategy that reduces labor and feeding costs when longer periods of supplementation are needed, but it may also impact blood concentrations of hormones and metabolites that are important for cow reproductive performance and fetal development. The following study was designed to identify the lowest frequency of precalving supplementation that could be implemented without reducing the performance of cows and calves. Treatments started in September (80 days before calving) and consisted of cows receiving no precalving supplementation, and cows fed 2.2 lb of dried distillers grains (DDG) every day until calving (**7X cows**; total of 176 lb per cow), 5.13 lb of DDG every Monday, Wednesday, and Friday until calving (**3X cows**; total of 176 lb per cow), or 15.4 lb of DDG every Monday until calving (**1X cows**; total of 176 lb per cow). All cows and calves were managed similarly from calving until weaning.

All cows started the study with a BCS of 5.5. As expected, cows not offered precalving supplementation lost BCS and calved at a BCS of 4.75, whereas all cows that received precalving supplementation gained BCS. More importantly, frequency of precalving supplementation did not impact cow BCS at calving (*5.34 for 1X cows, 5.36 for 3X cows, and 5.45 for 7X cows*), indicating that frequency of supplementation could be reduced to 1 or 3 times weekly without sacrificing cow BCS at calving.

Calf body weight at weaning was less for calves born from cows that did not receive

precalving supplementation (557 lb). However, **calf body weight at weaning decreased as we reduced the frequency of precalving supplementation (575 lb for calves born from 1X and 3X cows, and 593 lb for calves born from 7X cows)**. Although cow performance was not impacted, decreasing the frequency of precalving supplementation was harmful to calf weaning weight. This study provided additional information on how to properly supplement pregnant beef cows in Florida. So far, we learned that cows need to be supplemented for the entire third trimester of gestation and more consistently (daily is better than 1 or 3 times weekly, which is better than offering no precalving supplementation) if the primary goal is to maximize calf body weight at weaning.

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### **Upcoming Events**

Visit our calendar online to view all our upcoming events and their registration links:

July 12, 11:00 – 11:45 a.m., Ona Highlight with guest speaker David Mason. David is a PhD Student advised by Dr. Marcus Lashley in the Wildlife Ecology and Conservation Department at UF. David will be discussing fire disturbance. You are welcome to attend by webinar or in person. To attend in person, call 863-735-1314 ext. 204 to register.

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UF/IFAS Range Cattle REC - 3401 Experiment Station Rd., Ona - <http://rcrec-ona.ifas.ufl.edu/>

**Table 1** – Summary of 5 studies evaluating the cow-calf performance after cows received (Supp.) or not (No Supp.) supplementation of protein and energy during precalving period.

	Study 1		Study 2		Study 3		Study 4		Study 5	
	No Supp	Supp.	No Supp.	Supp.	No Supp.	Supp.	No Supp.	Supp.	No Supp.	Supp.
<i>Initial BCS (September)</i>	5.7	5.7	5.5	5.5	5.3	5.4	5.0	5.0	5.5	5.5
<i>Calving BCS (November)</i>	5.8 <sup>a</sup>	6.1 <sup>b</sup>	5.0 <sup>a</sup>	5.4 <sup>b</sup>	5.2 <sup>a</sup>	5.8 <sup>b</sup>	4.7 <sup>a</sup>	5.6 <sup>b</sup>	5.0 <sup>a</sup>	5.5 <sup>b</sup>
<i>Pregnancy, %</i>	91.7	94.4	78.5	75.8	96.2	96.3	82 <sup>a</sup>	95 <sup>b</sup>	93.3	86.8
<i>Calf weaning weight, lb</i>	275 <sup>a</sup>	295 <sup>b</sup>	579 <sup>a</sup>	597 <sup>b</sup>	561 <sup>a</sup>	591 <sup>b</sup>	535 <sup>a</sup>	563 <sup>b</sup>	557 <sup>a</sup>	581 <sup>b</sup>
<i>Response to vaccination, %</i>	56.1 <sup>a</sup>	81.5 <sup>b</sup>	-	-	21 <sup>a</sup>	54 <sup>b</sup>	-	-	-	-

<sup>ab</sup> Means without a common superscript differed ( $P < 0.05$ ). Study 1 = 0 or 2.2 lb/day of molasses + urea for 57 days before calving (Moriel *et al.*, 2020). [doi:10.1093/jas/skaa123](https://doi.org/10.1093/jas/skaa123); Study 2 = 0 or 2.2 lb/day of molasses + urea for 47 days before calving (Palmer *et al.*, 2020). [doi:10.1016/j.livsci.2020.104176](https://doi.org/10.1016/j.livsci.2020.104176); Study 3 = 0 or 2.2 lb/day of dried distillers grains for 90 days before calving (Palmer *et al.*, 2022). [doi:10.1093/jas/skac022](https://doi.org/10.1093/jas/skac022); Study 4 = 0 or 2.2 lb/day dried distillers grains for 70 days before calving (Izquierdo *et al.*, 2022). In review; Study 5 = 0 or 2.2 lb/day dried distillers grains for 77 days before calving (Vedovatto *et al.*, 2022). In review; In all studies, cows and their calves were managed similarly from calving until calf weaning. Calves were early weaned at 2 to 3 months of age in Study 1 and normally weaned at 8 to 9 months of age in Studies 2, 3, 4, and 5.