



BEEF CATTLE RESEARCH UPDATE

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Pasture vs. Drylot Backgrounding

Numerous studies have shown that backgrounding weaned calves for 45 days prior to feedyard placement can improve performance and reduce morbidity. Recent New Mexico State University research used 250 weaned calves (519 lb average initial weight; 133 steers and 117 heifers) over three years to compare a low-input pasture backgrounding system with a high-input drylot system (42 to 45 day backgrounding periods).¹ The drylot calves were fed a corn/wheat midds based pelleted ration (maximum intake of 3% of bodyweight) plus 1.5 to 2.5 lb/day of alfalfa hay. The pasture calves were supplemented with 1.25 lb/day of a 32% protein cube (3 times per week). During backgrounding, drylot calves gained more weight than pasture calves but feed and total cost was four times greater, resulting in \$45 greater net income for pasture calves. After backgrounding, only steers were finished at a commercial feedlot as a single group. During the finishing phase, drylot steers had lower daily gains than pasture steers for the first 74 to 94 days of the feeding period but subsequent gains were similar for the two backgrounding groups. No differences in total daily gains, carcass characteristics, or the proportion of steers treated for sickness were reported. However, drylot steers had a greater death loss than pasture steers (7.3 vs 0%). Pasture steers had a net return advantage of \$103/head. In summary, these researchers concluded that the low-input pasture backgrounding system was more profitable than the drylot system during both the backgrounding and finishing phases.

Effects of Weaning Management Strategies on Calves during Feedlot Receiving

Ohio State University researchers investigated the effect of three weaning strategies on the performance and health of calves during a 28-day feedlot receiving period.² The three strategies were: 1) weaned at trucking (calves were shipped to feedlot on day of weaning), 2) weaned 30 days before shipping and confined in drylot, and 3) weaned 30 days before shipping and pastured with fence-line contact between cows and calves (first 7 days after weaning). The fence used to separate the calves and cows was woven wire with a top strand of barbed wire or electric fence. The researchers reported that this fence proved to be effective in keeping the animals separated.

Two hundred eighty spring-born crossbred beef steer calves (average age of 175 days and average weight of 466 lb) were used in this two year study. Calves in the pasture group grazed on a mixed grass species pasture and were fed 4 lb/day of a 16% crude protein corn-based supplement in year 1 and 5.3 lb/day in year 2. Drylot calves were housed in partially enclosed pens and fed the same weaning supplement at equivalent levels as the pasture calves and had ad libitum access to grass hay (10.3% crude protein). All calves were fed a 16% crude protein corn silage based receiving diet for 28 days after arrival at the research feedlot.

At trucking, steers on the three treatments weighed approximately 557 lb. During the first week of the feedlot receiving period, steers from the drylot weaning strategy lost 1.32 lb/day, whereas steers from the truck weaning and pasture weaning treatments gained 1.10 and 0.88 lb/day, respectively. Gains during the subsequent three weeks were similar among all

treatments. Over the entire 28-day period, truck and pastured weaned steers gained faster than drylot weaned steers (3.08, 2.86, and 1.98 lb/day, respectively). Feed intake during the 28-day receiving period was greater for pasture and drylot weaned steers than truck weaned steers (12.77, 12.54, and 11.66 lb/day, respectively). Gain to feed ratio over the entire 28-day period was 0.3, 0.2, and 0.1 for truck, pasture, and drylot weaned steers, respectively. Weaning effects on the incidence of morbidity were also observed. These researchers noted that only 15% of pasture weaned calves required treatment for respiratory disease. In contrast, 28 and 38% of truck and drylot weaned calves, respectively, were treated.

These researchers concluded that all three weaning strategies resulted in satisfactory cattle performance during both weaning and feedlot receiving phases. They also noted that the lack of increases in body weight may not provide motivation for calf producers to invest labor and resources to implement pre-shipment weaning strategies unless they are part of a specialty-marketing program or retain ownership of the calves. However, the lower incidence of morbidity observed for pasture weaned calves with fence-line contact with their dams might make this weaning strategy more desirable in specialty marketing programs or with retained ownership.

¹ Mathis, C. P., S. H. Cox, M. K. Petersen, C. L. Löest, R. L. Endecott, and M. Encinias. 2007. Low-input pasture backgrounding system is more profitable through harvest than high-input drylot system. *J. Anim. Sci.* 85 (Suppl. 2):167.

² Boyles, S. L., S. C. Loerch, and G. D. Lowe. 2007. Effects of weaning management strategies on performance and health of calves during feedlot receiving. *Prof. Anim. Sci.* 23:637-641.