January 2001

June versus March Calving for the Nebraska Sandhills: Economic Comparisons

Gordon Carriker
University of Nebraska-Lincoln

Dick Clark
University of Nebraska-Lincoln

Don C. Adams
University of Nebraska-Lincoln, dadams1@unl.edu

Russ Sandberg
University of Nebraska-Lincoln

June versus March Calving for the Nebraska Sandhills: Economic Comparisons

Gordon Carriker
Dick Clark
Don Adams
Russ Sandberg[1]

A June calving system extended grazing, reduced feed costs, reduced labor inputs and had higher net returns than a March calving system.

Summary

Costs and returns of June and March calving systems were compared at four production phases. Financial costs of the June system were lowest, due primarily to lower costs of producing a weaned calf. Post-weaning financial and economic costs at each phase were nearly identical. Selling June-born steer calves at January weaning would double net returns compared to selling March-born steer calves at October weaning due to lower costs and higher market prices. Net returns for June-born steer calves retained beyond weaning are highest if calves are retained as yearlings and finished. Calves finished as calf-feds provided the highest net returns for the March calving system.

Introduction

Input requirements for the June system are lower at some phases than those for the March system as described in the previous article, "June versus March Calving for the Nebraska Sandhills: Production Traits." The objectives of this research were to: 1) develop cost budgets for each system and compare the costs at several production phases in the two systems; and 2) develop net returns budgets for each system and compare the net returns at several production phases in the two systems. We hypothesized that the June system costs would be lower and net returns higher than those for the March system.

Procedure

Financial cost budgets were developed for each system through weaning. Economic and financial cost budgets were then developed for each production phase after weaning. Budgets were based on the 4-year (1995-1998) average resource use during each phase and 1998 input prices. All budgets include costs for harvesting hay and purchased feed, grazing (fence and water maintenance, livestock checking, etc.), labor, operating interest, management, overhead and heifer replacement. The budgets do not include charges for land, property taxes, insurance, or buildings. Ownership costs for hay harvesting and feeding equipment, but not other equipment, are included. Based on other research at GSL it was determined that the same land base (about 90% upland and 10% subirrigated meadows) could support equivalent numbers of cows year around for either system. Therefore, land charges and taxes would be the same. The March calving system would use the meadows for hay production while the June calving system would use them for summer and some spring and fall grazing . The economic costs for all phases beyond weaning reflect the opportunity costs of growing the steer calf during a production phase by also including the value of the incoming animal as if it was purchased at market. Valuing the steer calf at the beginning of each phase of production permits each phase to be evaluated independently, as if each phase was an independent enterprise. The financial costs reflect the accumulated cash costs of growing the steer calf through a particular production phase.

Annual net returns budgets were developed using the cost budgets, average annual steer weights at the end of each production phase, and 1992 through 1998 real (deflated market prices) prices received at western-Nebraska and eastern-Wyoming auctions. Potential selling strategies for the calf crops were determined based on the various production phases. The economic net returns at each production phase are calculated as the difference between gross revenue per calf and the opportunity cost of growing the calf and reflect the ability of each production phase to generate a return on investment, i.e., make profit. The financial net returns are calculated as the difference between gross revenue per calf and the accumulated costs of growing the calf and reflect the ability of each production phase to generate a cash flow.

The major costs for a weaned calf are those necessary to support the cow enterprise. As indicated, only budgets for financial costs were calculated through weaning. The hay cost, $40/t, was based on budget estimates for harvesting ($30/t) and feeding ($10/t) excluding labor. These costs included ownership costs for interest and depreciation on the equipment. Labor costs included in the budgets were based on actual labor for feeding and calving as recorded by the University staff at GSL. We charged labor at the rate of $7.50/hr except calving labor which was charged at time and a half since we believe calving to require more skilled labor and often occurs at night. No other labor was included in cow budgets since we assumed that other labor would be similar between systems. Purchased feeds such as protein supplement and salt and mineral were charged at actual costs based on 1998 prices. Interest on the value of cows and bulls was charged at 7.5%. Following Standardized Performance Analysis guidelines, replacement heifer costs were estimated from the net cost to produce a weaned calf. We used an initial selection rate of 20% of the heifer calves with 16% of these heifers ending up in the cow herd. We did not include the additional costs to take the heifer from calf to cow status. Based on preliminary research, it appears the first calf heifers can be developed for similar costs in the two systems. Costs for ensuring that the first calf heifer is bred for the second calf may be higher for the June system, but research is incomplete at this time. It is not likely that costs for the second calf will be different enough between the two systems to alter the conclusions of this paper. Each cow cost budget was credited with cull income for sale of cull cows, bulls and heifers minus death loss. We assumed the same cull weight of 1,100 pounds for both (March and June) cow herds. Cull prices varied from year to year and between systems since culls are usually available at different times of the year in the two systems. Grazing costs were estimated at $4/cow/month when grazing upland and $6/cow/month while grazing meadow. These are financial costs only and cover such items as repair and upkeep on fence and water and operating costs for checking cattle. To properly graze meadows, more fencing and water is required than with upland. The costs do not include the value of the forage. Animal health was not greatly different between the two systems; however, we did include $15/cow veterinary and medicine costs in both systems.

Costs beyond weaning were based on the actual feeds fed and feeding labor. Grass for June-born calves that were summered on grass the second summer was charged at the rate of $0.50/hd/day. This cost is intended to cover the costs of renting additional grass where the landlord checks the calves and takes care of all pasture and water management.

Feedlot costs were actual charges from the University feedlot near Mead, Neb., which included a $0.30/hd/day yardage charge. The costs were based on 1998 ration ingredient cost plus $1/cwt trucking charge to and from the feedlot.

Table 1. Average annual costs for March-born calf-fed and June-born calf-fed and yearling steers.

	March	June			
		Calf-fed		Yearling	
Production phase	Calf-fed	Range	Meadow	Range	Meadow
Economic costs/steer calf[a]					
Cow cost/calf weaned	$252	$173	$178	$173	$178
Calf costs: wean to on grass or feedlot	$404	$397	$417	$466	$487
Yearling costs: on grass to feedlot	—	—	—	$543	$559
Feedlot costs	$653	$666	$671	$751	$751
Financial costs/steer calf[a]					
Cow cost/calf weaned	$252	$173	$178	$173	$178
Calf costs: wean to on grass or feedlot	$294	$219	$225	$283	$289
Yearling steer costs: wean to feedlot	—	—	—	$382	$389
Feedlot costs: wean to slaughter	$580	$505	$511	$636	$643

[a]Economic costs include the opportunity cost of the incoming animal, i.e., the value of the animal priced at market. Financial costs include the accumulated costs of producing the animal.

Table 2. Average annual net returns for March-born calf-fed and June-born calf-fed and yearling steers.

	March	June			
		Calf-fed		Yearling	
Production phase	Calf-fed	Range	Meadow	Range	Meadow
Economic net returns/steer calf					
Calving to weaning	$86	$151	$161	$151	$161
Weaning to on grass	($36)	($20)	($34)	($28)	($32)
On grass to in feedlot	—	—	—	($45)	($62)
In feedlot to slaughter	$27	($38)	($45)	$20	$34
Financial net returns/steer calf					
Calving to weaning	$86	$151	$161	$151	$161
Weaning to on grass	$74	$158	$158	$156	$165
On grass to in feedlot	—	—	—	$115	$108
In feedlot to slaughter	$100	$124	$117	$135	$141

Results

The economic and financial cost budgets are summarized in Table 1. Through weaning the costs for both the economic and financial budgets were treated the same since there is no opportunity cost of an incoming animal at weaning. The cost of producing a June-born weaned calf was $74 to $79 lower per calf than the cost of producing a March-born weaned calf due to reduced harvested forage and feeding and calving labor expenses. The additional financial costs to grow a steer calf past weaning were nearly the same for both the June- and March-born calf fed systems; therefore, the financial cost advantage remained with the June system through the feedlot. However, the post-wean economic costs for the March born, calf-feds were slightly lower into the feedlot compared to June born calves bred on meadow ($404/hd versus $417/hd) and slightly higher than June born calves bred on range (Table 2). The economic and financial costs for June-born yearlings reflect the higher incoming animal values as well as the higher costs of finishing the calves as yearlings.

The economic and financial net returns to the March- and June-born systems are summarized in Table 2. When evaluating the economic net

(Continued on next page)

returns, a negative value for a phase of production indicates that phase would not stand alone as an enterprise without being subsidized by earlier or later phases. The phase does not generate a profit. Similarly, a negative financial net return, though not experienced, would indicate that growing a steer calf to a production phase would not generate a positive cash flow. Selling a June-born weaned calf in January from either the range- or meadow-bred treatments provided $65 to $75 more net returns, on average, than a March-born weaned calf sold in September/October. This difference is due to two effects. First, it cost less to produce a June-born calf. Second, the price received for June born calves sold in January averaged nearly $10/cwt higher (real prices) compared to the price received for the March-born calf sold in September/October. The price differential is a real effect of changing systems and must be considered if changes such as this are contemplated by any producer. It comes from a typically higher seasonal price in January compared to September/October and the fact that the June-born calves are lighter so the price slide also gives these calves a price advantage. The net effect is that the gross sale value received for a June-born calf sold in January is about the same as a March-born calf sold in the September/October time frame. The post-wean economic net returns indicate the June system is only profitable if the weaned calf is finished as a yearling and the March system is profitable if the weaned calf is finished in the feedlot. From the financial (cash flow) standpoint, the June system always generated higher net returns than the March system. The greatest financial net returns were for the June-born yearling prior to being put on grass.

---

[1]Gordon Carriker, former research analyst; Dick Clark, professor, Agricultural Economics; Don Adams, professor, Animal Science; Russ Sandburg, research technologist; West Central Research and Extension Center, North Platte.