



# CATTLE SENSE

Information that makes sense helping you make cents

May 2003

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## /// AVOIDING THE 'SOPHOMORE SLUMP': Focus on 2<sup>nd</sup>-Calf Heifers

Whether the replacement heifers in a herd are home-raised or purchased, they represent a significant expense. In order for them to deliver a positive return on this investment, they need to remain in the herd, producing marketable calves, for an extended number of years. Yet we often see a disproportionate number of these females failing to rebreed after their first calf, and having to be culled well before they have made the operation any money. Others may cycle--and breed--late in the season, setting themselves up for an entire lifetime of weaning younger, lighter calves. These cows often tend to lose an additional day or two each year, increasing the odds that sooner or later they won't get bred at all, either.

The explanation is fairly simple. We expect two-year-olds to breed back for their second calf while they are recovering from delivery of their first calf, are still growing, are supporting early lactation, and are probably competing with more dominant mature cows for supplemental feed. Remember that if we calve first-calf heifers at 80% of their mature body weight, and plan to be at 92% of mature body weight by the time the second calf is born, these animals need weight gains – *above pregnancy* – of about .4 lb per head per day throughout their third year of life. And if these heifers have the genetic ability to deliver high levels of milk, it is going to take elevated supplies of protein, energy and minerals to support this production, as well.

If cows are to produce a calf on a yearly basis, they must rebreed within about 80 days of calving. Their ability to do so hinges on the length of time from birth to the resumption of heat cycles, or PPI (Post Partum Interval). PPI is impacted by pre-calving nutrition (reflected in heifer body condition), post-calving nutrition, degree of calving difficulty (which can be minimized by good nutrition during late pregnancy), health status and presence of parasites, and suckling activity.

Keys to managing heifers for optimum second-calf performance are: **HAVING THE FIRST CALF EARLY; CALVING IN GOOD BODY CONDITION; and PROVIDING GOOD NUTRITION THROUGH THE SUBSEQUENT BREEDING SEASON.**

Classic work by Wiltbank (1969) clearly illustrated the practical difference in length of PPI between young and mature breeding females. Early calving of heifers can help compensate.

COW AGE:	DAYS AFTER CALVING						
	40	50	60	70	80	90	100
	----- % in heat -----						
≥ 5 years	55	70	80	90	90	95	100
2 or 3 years	15	30	40	65	80	80	90

Numerous other researchers have confirmed the importance of heifer body condition at calving on rebreeding performance. Winter feeding programs for bred heifers can have long lasting implications.

DAYS AFTER CALVING:	40	50	60	70	80	90
BODY CONDITION AT CALVING	----- % in heat -----					
Thin	19	34	46	55	62	66
Moderate	21	45	61	79	88	91
Good	31	42	91	96	98	100

Work published by Spitzer et al. in 1995 illustrates the importance of pre-breeding nutrition for second-calf heifers.

BEEF HEIFERS	% in Estrus by Indicated Day of Breeding Season			% Pregnant by Indicated Day of Breeding Season		
	20	40	60	20	40	60
Post-partum Weight Gain						
High ( ~ 2 lb/hd/day)	65	86	96	46	76	84
Low (~1 lb/hd/day)	41	69	79	27	56	70

**What is this worth?** Meek and co-workers, in 1999, calculated net present values for various-aged females in the breeding herd, based on prices at the time. They then determined various “shadow prices,” which are the breakeven cost of changing specific parameters. This gives the amount that can be profitably invested in additional management or inputs. They showed that each 1% increase in 3-year-old pregnancies was worth \$3.11 per head. If taking heifers from moderate to good condition for calving increases 80-day rebreeding rates 10% (see 2<sup>nd</sup> table above), the returns over the life of those heifers should be **over \$31 per head!**

Good feeding programs are obviously investments that give a good rate of return. And in practice, selection of supplementation programs will be the driving force behind heifer nutritional management. QLF offers a range of liquid supplements that can be matched to a wide range of situations, with nutrient levels to match a wide variety of forage bases, and several delivery options. Free-choice lick wheel feeders offer convenience and savings, while treated bales and mixed rations are better fits for some operations. Liquid supplements offer several unique advantages, while delivering quality sources of crude protein, sugars, minerals, vitamins, and in some cases, dietary fat. These are packages that can help carry a heifer to calving with the nutritional reserves needed to calve easily, milk effectively, and resume cycling quickly, and then on through a timely rebreeding.