

Are Seasonal Effects on Birth Weight Real?

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Birth weight is always a topic of discussion. At breeding time, calving time and at other opportune moments within the daily passing of the cattle business, birth weight discussions will consume time.

Recently a producer asked, "Does a calf's birth weight depend on the season of birth?" The answer is not simple. Research has shown that several factors are known to affect calf birth weight so, to keep the answer straightforward, a general principle does exist in all living things. As the external temperature increases, the body shifts the flow of blood to the surface to allow for more cooling. When the temperature gets cooler, blood flow tends to move to the body's core to conserve heat.

Mammals, such as beef cows, must maintain a constant body temperature, so changing blood flow is an excellent way to achieve it. One side effect, generally nominal in the normal variant of environmental temperatures, is a tendency to produce heavier birth weights when the temperature is cold and lighter birth weights when the temperature is hot.

In reviewing calf records for herds involved with the North Dakota Beef Cattle Improvement Association, this trend is small, but is still evident within the data. James Clement, veterinarian from Mandan and Chip Poland, livestock specialist working at the Dickinson Research Extension Center, split the NDBCIA data into two calving seasons. The late winter calving herds started calving February 13, with a mean calving date of March 7 and the spring herds started calving March 12, with a mean calving date of April 5.

The late winter calves weighed almost 90 pounds at birth and the spring calves averaged just over 86 pounds at birth. So, the tendency for heavier calves is there and if one reviews other data, similar effects can be found. Data from the southern United States is similar. Data from Glenn Selk and David Buchanan at Oklahoma State University showed fall calving cows delivered smaller birth weight calves (just under 78 pounds) than did spring calving cows (just over 82 pounds).

Without an extensive literature review to fill-in the appropriate decimal places, examples of heavier calves in the

winter versus spring, and lighter calves in the spring versus fall can be found. Does the three to four pound variance in birth weight across seasons in these two examples impact management? Yes, it does. To what degree is really unknown.

At least in the North Dakota data, the average birth weight across the six years was of a similar magnitude. The heaviest year averaged 89.5 pounds and the lightest year 85.4 pounds, just over a 4-pound spread. Many table discussions have been held, with the end result, "the calves seem heavier this year," a true statement. However, the real reason for such a statement, still makes for good debate, with no referee to wave the checkered flag.

The answer to the question "does this seasonal variation change how a producer selects bulls?" rests in the utilization of breed association Expected Progeny Differences (EPDs), both for calving ease and birth weight. The breed associations go to great lengths to adjust the EPD values of bulls to enable producers to make the most accurate selections available.

As most producers sit and select yearling bulls, producers can't help but glance over the printed actual birth weight. However, it is still important for producers to keep in mind that the unadjusted birth weight has huge environmental effects including season of birth, age of dam, year of birth, region of birth and other factors common to the problems of selecting bulls.

More next time, but for now, set some EPD thresholds and stick to them.

May you find all your USAIP ear tags.

Your comments are always welcome at www.BeefTalk.com. For more information, contact the North Dakota Beef Cattle Improvement Association, 1133 State Avenue, Dickinson, ND 58601 or go to www.CHAPS2000.com on the Internet. In correspondence about this column, refer to BT0195.

Seasonal Effects on Birth Weight

	Late Winter Calving	Spring Calving
Beginning of the calving season	February 13	March 12
Average birth date	March 7	April 5
Birth weight	89.7 lbs.	86.0 lbs.

Birth weights of calves enrolled in the CHAPS program.

Dickinson Research Extension Center 2003 Annual report - Effect of calving season on cow/calf production in the Northern Great Plains - calf performance *J.C. Clement, W.W. Poland, and K. Ringwall*