

BeefTalk 497: No Sun, No Fun

Many functions in life depend on a clear seasonal signal through sunshine.

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When the sun is out, the calves, cows and horses are happy. The rancher, farmer and family are happy.

A long period without sunny days definitely turns the tide away from happiness. Perhaps that is why the saying “a cloudy day” has so many meanings.

Sunlight impacts living things because they need sunlight to survive.

The biological pathways of living things depend on sunshine. Sunlight is converted into biological compounds that exist within the bodies of living things.

Photoreceptors in the retina of the eye can be activated by light. These receptor cells send neural impulses deep into the brain to sites such as the hypothalamus.

The hypothalamus passes these impulses through an assortment of pathways that end up in the pineal gland, which also is deep within the brain. The pineal gland converts the neural signals into hormonal outputs that tell the various parts of the body what is going on in the bigger picture.

Only in recent times has the intricate pathway been fully appreciated through the link between the external environment and the internal regulation of seasonal responses. Yes, every cell within living things knows what season is active.

Many functions in life depend on a clear seasonal signal through sunshine. An obvious example is fertility. Seasonal fertility is represented by two broad classifications, which are short daylight length (fall to winter) and long daylight length (spring to summer).

Short daylight length breeders include common sheep and most wild deer species. Long daylight length breeders include horses and the common hamster.

Domestic cattle (the ones scattered around our farms and ranches) are not known to have a significant response to daylight length when it comes to fertility. Interestingly, some of their wild cousins do.

The bottom line is that there are real reasons that sunlight is good. Sunlight allows us to better navigate the day by helping regulate daily body functions.

For a better appreciation, animals need to give birth when the environment is best suited for the survival of their offspring. This happens naturally.

Natural selection only allows those animals that have the correct settings to their respective reproductive systems in place to survive. This allows for the offspring to be born when the weather is suited to their needs and forage is available for the production of mother's milk and animal growth.

Our domestication and subsequent attempts at utilizing beef cattle for efficient food production needs to constantly strive to increase efficiency. At the same time, beef production needs to stay in balance with the many complicated biological processes that keep living systems alive and in sync with Mother Nature.

As producers, we cannot take credit for the biochemical, physiological or genetic makeup of domestic cattle. However, we can recognize that beef cattle are products of a natural selection process that cannot be altered very easily.

Forces of natural selection that were present when beef cattle were domesticated several thousand years ago still are present today. Many attempts at modifying cattle biology have failed because we do not fully understand the complex mechanisms that regulate the physiological processes that sustain life.

By increasing our understanding of biological processes, there may be more successes at improving beef production. However, for today, no sun, so no fun because we do know there is a link between sunlight and how we feel.

For the people who take care of the cows and calves, a cloudy day is still a cloudy day, even with all that we have learned about cattle production. These sunless days mean more bedding for fresh calves, keeping a more watchful eye on yesterday's calves and a little more time to remind ourselves that the sun really is there. We just have to wait for its full effects.

Keep warm and remember that the spring sun will come soon.

May you find all your ear tags.

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