



CEDAR GROVE VETERINARY SERVICE NEWSLETTER



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CAFFEINE MAY NOT BE JUST FOR THE FARMER ANYMORE

Many farmers (and veterinarians) would not dream of starting their day without their caffeine in the morning. It may be in the form of Mountain Dew, Pepsi, or a cup of coffee (or three). Well, new research has indicated that the same jolt that gets farmers going in the morning may also help newborn calves get a jolt into life.

Caffeine and coffee have been around for many centuries, but it is only until more recently that scientists and doctors have understood why it acts as a stimulant. It all started with a condition called apnea which is a disorder when a person will stop breathing for anywhere from 20 seconds to several minutes. Sleep apnea in adults is most commonly the first condition that comes to mind, but it is often observed in premature infants. In 1977, a ground-breaking paper was published that indicated an 85% reduction in premature infant apnea by treating with caffeine.

Caffeine works to stimulate receptors that regulate a compound called adenosine in the brain. If adenosine levels are elevated, breathing decreases and muscles don't

work properly. This leads to drowsiness and lethargy. Caffeine works to clear excess adenosine from the system. In turn, caffeine will cause increase in respiratory rates, blood flow, and basal metabolic rate. Moreover, the ability of caffeine to stimulate occurs minutes after oral administration.

So, what does this all have to do with dairy farming? Well, just as human neonates can struggle to breath when first born, calves can also have a hard time with those first few breaths after calving. It can often be a very helpless time for those that work with newborn calves.

According to a Colorado State study from the mid 1990's, dystocia (difficult births) rates in beef and dairy heifers were very close to 16%. Mature cows were less problematic with an average dystocia rate less than 3%. The shocking finding was the 30% of calves that have a difficult birth will die as a result of dystocia, or from associated complications. When those numbers are applied, based on US herd sizes, the number of affected calves can creep to over a million with economic losses greater yet.

TEST YOUR DAIRY FARMING KNOWLEDGE

- 1) Approximately, how many pounds of milk are needed to make one 50-pound bag of 20:20 milk replacer?
 - a) 859 lbs
 - b) 1,008 lbs
 - c) 2,016 lbs
 - d) 3,426 lbs
- 2) What is the current estimated cost of raising a heifer from birth to springing?
 - a) \$1200
 - b) \$1550
 - c) \$1950
 - d) \$2200
- 3) What is the minimum number of grams of immunoglobulins that should be in a high-quality colostrum replacement product?
 - a) 50 g
 - b) 75 g
 - c) 100 g
 - d) 150 g

Answers on back

It is these losses that may be reduced by using caffeine in dairy calves. Very similar to the human premature babies, caffeine could prove to be an important tool on farms for calves that have a rough birth and need a jolt to get going. Research into its use indicates that the following scenarios are situations where caffeine intervention may be useful in calves:

- Within a few hours of birth for calves with slow development (delayed standing attempts, slow to stand (> 1 hour), sluggish reflexes, low heart rate (< 80/min) or abnormal respiratory rate or pattern of breathing)
- Following transport – upon arrival for calves that are cold, sluggish, unwilling to eat or drink
- For calves that have apparently recovered from a disease problem like scours or another digestive upset but remain sluggish, depressed, and have no

- (or reduced) appetite for milk
- Hypothermic calves to temporarily elevate body temperature and stimulate the central nervous system

Caffeine does come with risks and can be overdosed, so it does need to be only used in scenarios like those described above. Dr. McGuirk from the University of Wisconsin-Madison recommends an initial dose of 200 mg by mouth. A product that can be used with approximately the right dose is 5-Hour Energy. A 5-Hour Energy shot usually contains 100-200 mg of caffeine. McGuirk says calves can receive a single dose followed by a possible second dose within that same 24-hour period. After those two initial doses, a farmer should wait another 24 hours before a potential re-dosing.

Another product specifically designed for calves has recently reached the market that also contains

caffeine. The product is Calf Perk from TechMix (www.TechMixGlobal.com). Calf Perk, is designed and formulated to absorb when applied across the tongue. This way, even if the calf is non-responsive the active ingredients can still be absorbed and effectively help.

Even if caffeine is not adopted into the normal farm protocol, it is worth noting how important it is to get a calf taking good, deep breaths right away after birth. Methods such as dumping cold water in the ear, sticking straw into the nose for stimulation, or using the acupuncture point on the nose are all methods that have been used for decades to get calves to take that initial deep breath to really open up the lungs. If you have any questions or concerns about dystocia losses or the use of caffeine into a calf management program, make sure to ask a veterinarian.

Congratulations!

The winners of the Cedar Grove Veterinary Services sweatshirts from the Buying Show raffle are Roy and Gloria Teunissen. Congratulations to them and thank you to everyone that came that day.



Dairy Knowledge Answers

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A Famous Cow from History

Pauline Wayne—Many presidents of the White House maintained some livestock on the premises, like Pauline Wayne, who supplied President Taft with milk from 1910-1913 when previous First Cow Mooley Wooly wasn't up to the task anymore. Pauline was allowed to freely roam the White House grounds and became a common sight and press favorite; notably, she was the last official White House cow.



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