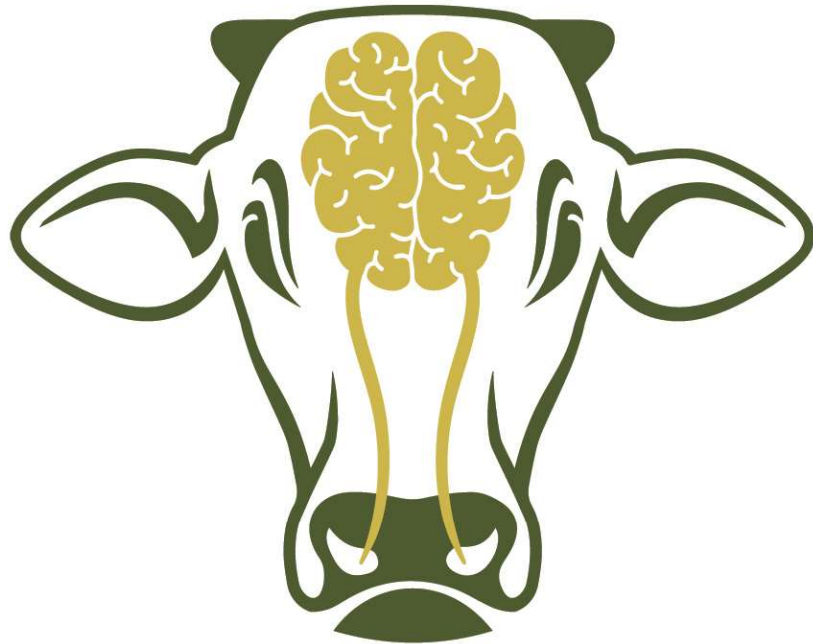


# ***FerAppease***<sup>®</sup>

Maternal Bovine Appeasing Substance

 **FERA** | Diagnostics  
and Biologicals

# What is *FerAppease*<sup>®</sup>?



- Naturally occurring substance captured in a bottle which reduces stress and its negative consequences in cattle.
- The active ingredient of *FerAppease*<sup>®</sup> is a synthetic analogue of the Maternal Bovine Appeasing Substance (MBAS). MBAS is naturally secreted by the skin of the mammary gland of lactating animals.
- *FerAppease*<sup>®</sup> has the unique function of reducing fear/stress and its negative effects in cattle of all ages.

# Threat Perception and FerAppease®





# Effect of FerAppease applied at time of calving in fresh heifers

Dr. Thomas Smith

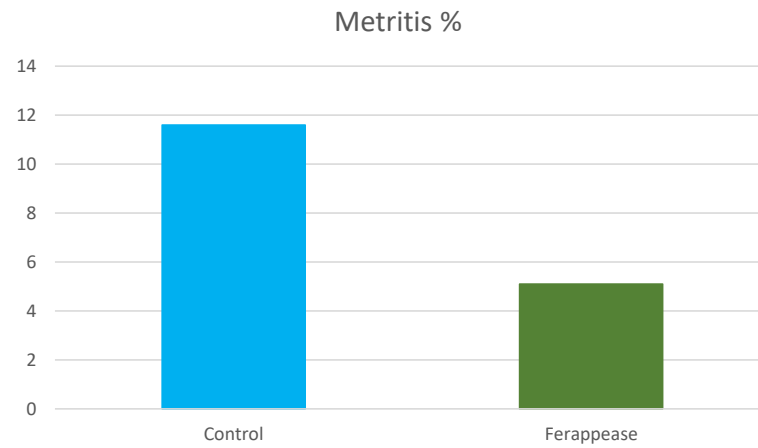
04/2023-01/2024

# Effect of FerAppease applied at time of calving

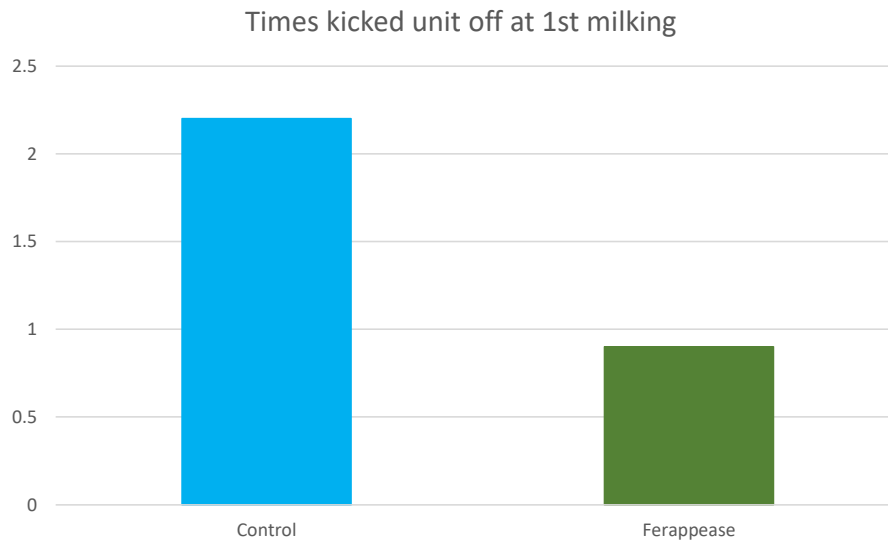
Sample size: 172 control, 173 FerAppease

- Animals: L1, fresh heifers treated at time of movement in just in time calving system
- Treatment protocol: FerAppease group received a single treatment of 10 ml (5ml behind the head and 5ml above the muzzle) when moving into the calving box. Alter treatment and control by week.
- Outcomes
  - Metritis
  - Behavior in the parlor
  - Milk Production

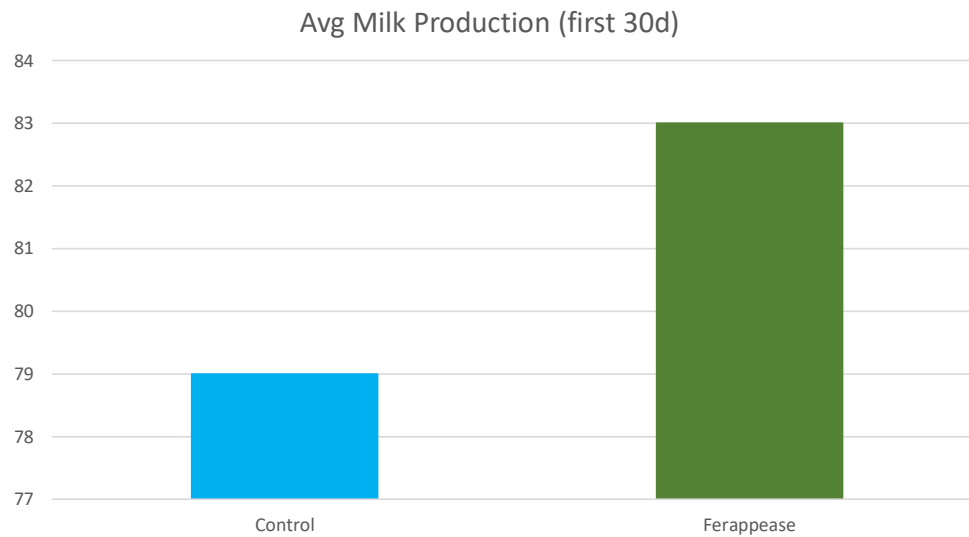
# FerAppease significantly reduced metritis



# FerAppease improves behavior at first milking (subset measured)



# FerAppease treatment at calving improved milk production





## Study Conclusions

- Reducing Cortisol should lead to improved oxytocin release and more complete milkout
- Less pressure necrosis leads to improved milk production for entire lactation?
- Significantly reduced metritis
- Worker safety improved and better cow welfare – fewer broken tails
- More/university studies needed but big opportunity

# Catabolism Strikes Again

- Glycogen (muscle) = 4 glucose molecules stored in chains ( $C_{24}H_{48}O_{21}$ )
- Lactose (milk) = Glucose + Galactose
- Lactose is leading driver in Milk Production (again water follows sugar)
- Induced Hyperglycemia at calving shunts glucose uptake away from mammary gland Hartmann and Kronfeld (1973)

# Prolactin

- Prolactin is the hormone of milk production – also plays a large role in reproductive functions esp ovulation in females and sperm production in males
- Very similar in structure to growth hormones (also inhibited by glucocorticoids)
- Ponchon et al. (2017) proved glucocorticoids reduce prolactin concentrations and milk yields

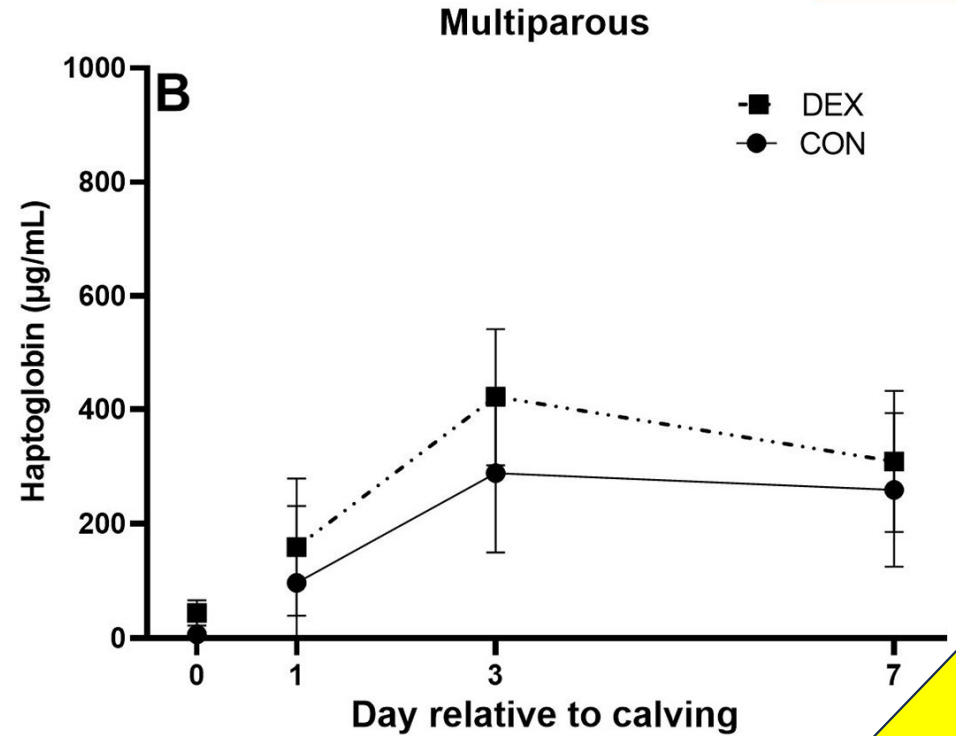
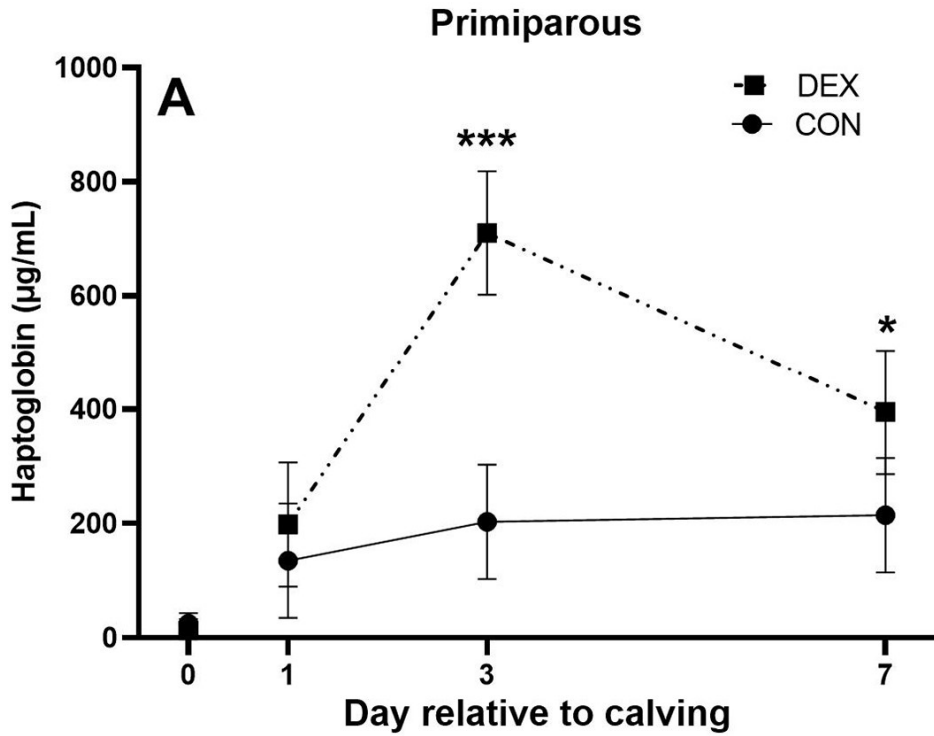
# Dexamethasone Study

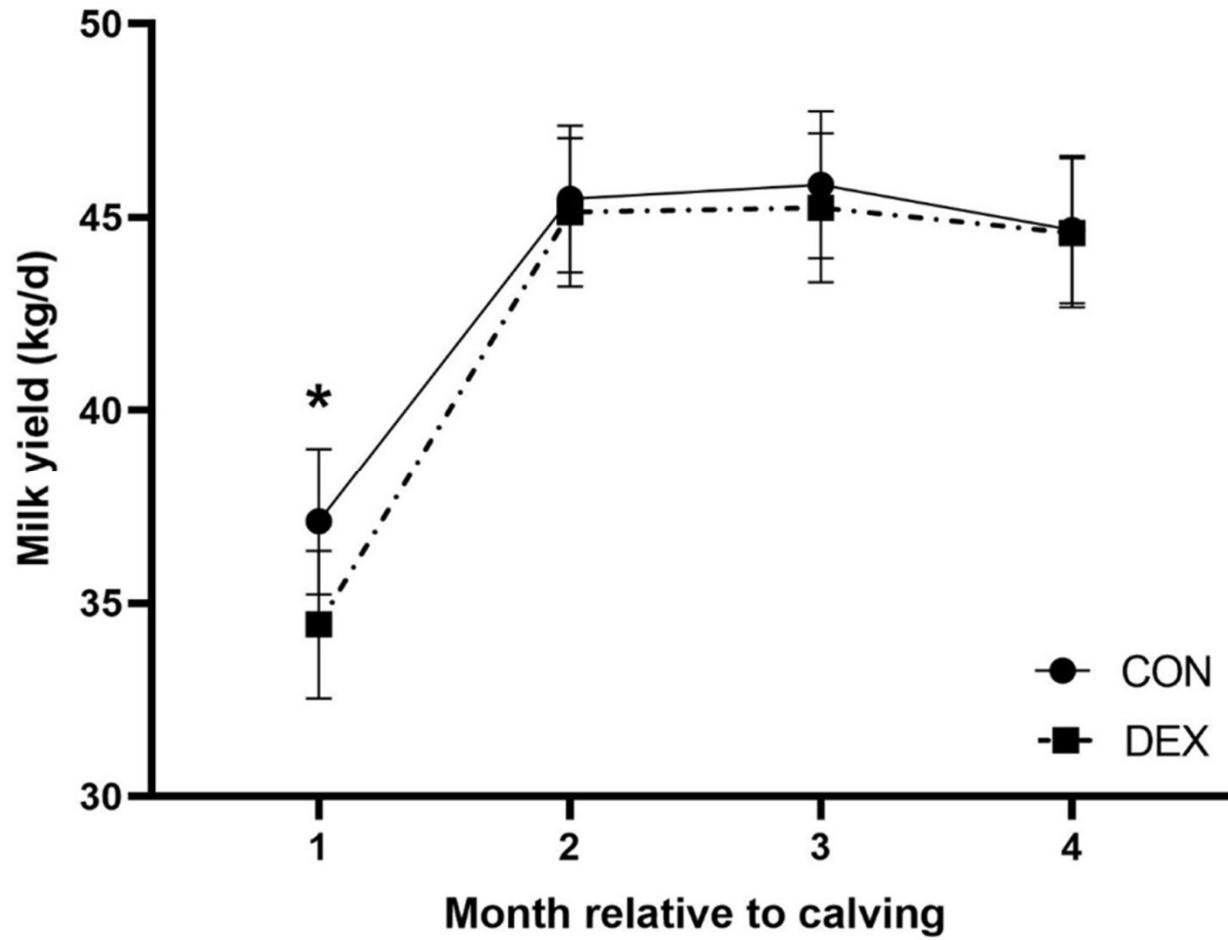
**The effects of dexamethasone administration on physiological, behavioral, and production parameters in dairy cows after a difficult calving**

**Swartz et al 2023**

**Virginia Tech 3 year trial**

- Decreased milk production
- Increased activity – restlessness
- Increased haptoglobin first 3 months
- Bigger effect on L1 than L2+







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