



# Beef Briefs

## The Latest Information on Beef Cattle Nutrition



### Vitamin E and Selenium Make a Great Defensive Team

By: Laura Martin, M. Sc

Modern genetics have pushed for better production in cattle, from higher birth weights, to more milk production to support these bigger calves, to increased gains expected of finishing cattle. This push for production can put a strain on different systems in the animal and can cause a chain reaction of consequences. Vitamin E and selenium supplementation is often recommended by veterinarians and nutritionists to give cattle a boost when performance isn't 100%.

Vitamin E is found naturally in plants and cattle on fresh pasture typically get enough from the plants they consume to support production, reproduction and health. As plants age, or spend time in storage the levels of vitamin E decrease. Typical beef cows with access to fermented feeds and dry hay may not be receiving enough vitamin E without additional supplementation.

Selenium can also be taken up from soil and stored in plants; however Ontario soil is selenium-deficient and produces selenium-deficient plants. NRC (1996) recommends 0.3 ppm supplemental selenium in the complete diet. This level is also the legal limit for supplemental se-

lenium according to the CFIA.

Cattle deficient in vitamin E and selenium may show a variety of symptoms, ranging from hair loss, reproductive failure, and poor growth. Calves born to mothers that are

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#### Inside this Issue:

Vitamin E and Selenium Make a Great Defensive Team

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### KENPAL'S BEEF NURSE COW

DEVELOPED SPECIFICALLY FOR  
COWS THAT ARE NURSING



- **Contains a high fortification of trace minerals and vitamins, including Vitamin E and Selenium.**
- **Cows like the taste, and will readily eat it free choice.**
- **Economical to use.**

**IT PAYS TO USE TOP  
NUTRITION!**

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deficient in selenium and vitamin E are at risk for white muscle disease which can be fatal to calves. White Muscle Disease signs in calves are weak leg muscle, cross-over walking, impaired suckling, paralysis and eventually death. While most farmers are familiar with this version of selenium/vitamin E deficiency it is also thought that a deficiency may also cause stupid calf syndrome. Calves with this illness are slow to stand after calving and may have trouble sucking even when assisted. They are also more susceptible to scours and pneumonia.

Adding Selenium and Vitamin E to the diet 30 days before calving and during the breeding season can help both cow and calf through these stressful times. By supplementing the cow while she's carrying the calf you are also protecting the calf before it is born. Often it is too late to inject selenium and vitamin E after the symptoms of stupid calf are noticed. Dr. Lance Vales noted that most vets would recommend

between 1000 – 1500 IU of vitamin E per day and to max out the selenium before calving to keep everyone healthy.



## SILO GUARD® II

FORAGE ADDITIVE FOR ALFALFA,  
CORN SILAGES AND BALED HAY



***“SEEING THESE RESULTS MAKE YOU A BELIEVER IN THE PRODUCT, I JUST WISH I HAD STARTED APPLYING SILO GUARD® II YEARS EARLIER!”***



*“2012 was my first season using Silo Guard® II; we went with the dry granular formulation with a blower applicator mounted on my round baler. We applied Silo Guard® II to dry first cut hay, second cut balage and baled corn stover. The results have been great feed, with no visual signs of moulding or heating in any of the bales made.*”

*Seeing these results make you a believer in the product, I just wish I had started applying Silo Guard® II years earlier. Prior to using Silo Guard® II it was always a struggle to get the hay consistently dry enough to keep properly in my hard core bales. There would always be a bale that was dusty or caramelized from heating. Even the bales made at 9:30 at night, as a challenge for the Silo Guard® II, kept fine.*

*The benefits sure outweigh the cost. I now feel confident to go to the field on an overcast day when the hay is just barely ready and the weatherman is calling for rain the next day. The harvest risk due to weather has been reduced. Higher hay moisture content has reduced the leaf loss in the field. The result is higher quality feed with more nutrient content. We plan on starting baling earlier in the day now and will go longer into the evening.*

*This balage was a first for this baler. Among my concerns when baling were whether the bales were tight enough and how variable the moisture content of the second cut was. We've been feeding the balage with great results, no signs of mould or heating and the cattle love the feed.*

*The corn stover was baled with two different balers; one applying Silo Guard® II and one not. The untreated bales heated and moulded in the centres. The treated bales did not heat and blew apart nicely for my beef cows to chew on. This year's supply of Silo Guard® II is already on order.”*



Vitamin E and selenium each work on different systems in the body but when it comes to cell protection they work together as a team. Free radicals form during normal metabolism in each cell, but periods of stress, disease, or injury create more free radicals than the body can handle. These free radicals can cause a lot of damage if left unchecked, resulting in poor performance. Selenium is a key component in glutathione peroxidase (GSH-PX), an antioxidant that protects cell membranes from these free radicals. Without selenium the body can't make this antioxidant. Vitamin E is embedded in the cell membrane and helps to protect the cell from any free radicals that escape the glutathione peroxidase (Figure 1).





# Kenpal Beef Products

## BEEF NURSE COW PRODUCTS

- Contains a high fortification of trace minerals and vitamins.
- Specially designed supplement to provide beef nurse cows with a nutritionally correct formula.
- Economical to use.
- Very palatable, with various appetite-enhancing ingredients.
- May be fed free choice.

Product Name	Feeding Rate
Beef Nurse Cow Vitamin/Mineral Supplement	150 grams/head/day
Beef Cow Ration	2.0 kg/head/day
Beef Nurse Cow (BP) Vitamin/Mineral Supplement	250 grams/head/day
Beef Nurse Cow (BP) Ration	2.0 kg/head/day

## KING OF CREEP PRODUCTS

*To be fed while calves are still nursing the cow.*

- Specifically balanced creep feed for calves that are still nursing mother's milk.
- Highly palatable (calves like it).
- Contains a highly available fibre source.
- This product is available as a Premix, Protein Supplement or Complete Ration.

Product Name	Feeding Rate
King of Creep 75 Premix	187.5 grams/head/day <b>*DO NOT FEED FREE CHOICE</b>
King of Creep Protein Supplement	1.0 kg/head/day
King of Creep Ration	2.5 kg/head/day

## BEEF CALF RECEIVING PRODUCTS

*To be fed to calves right after weaning.*

- Specifically designed to help reduce weaning and shipping stress in newly weaned calves.
- Contains B-Vitamins, Yeasts and flavours to help increase intakes and re-hydrate calves at weaning.
- Highly fortified with trace minerals and vitamins including thiamine to help strengthen the calves' immune system.
- This product is available as a Vitamin/Mineral Premix, Protein Supplement or Ration.

Product Name	Feeding Rate
Beef Calf Receiving 75 Premix	187.5 grams/head/day <b>*DO NOT FEED FREE CHOICE</b>
Beef Calf Receiving Protein Supplement	1.0 kg/head/day
Beef Calf Receiving Ration	2.5 kg/head/day

## BEEF BACKGROUNDER PRODUCTS

- Specially designed for backgrounding (growing and developing) beef cattle.
- Contain optimum levels of trace minerals and vitamins, including Thiamine.
- Should be mixed in grain mix or total mixed ration (TMR).
- This product is available as a Vitamin/Mineral Supplement, Protein Supplement or Ration.

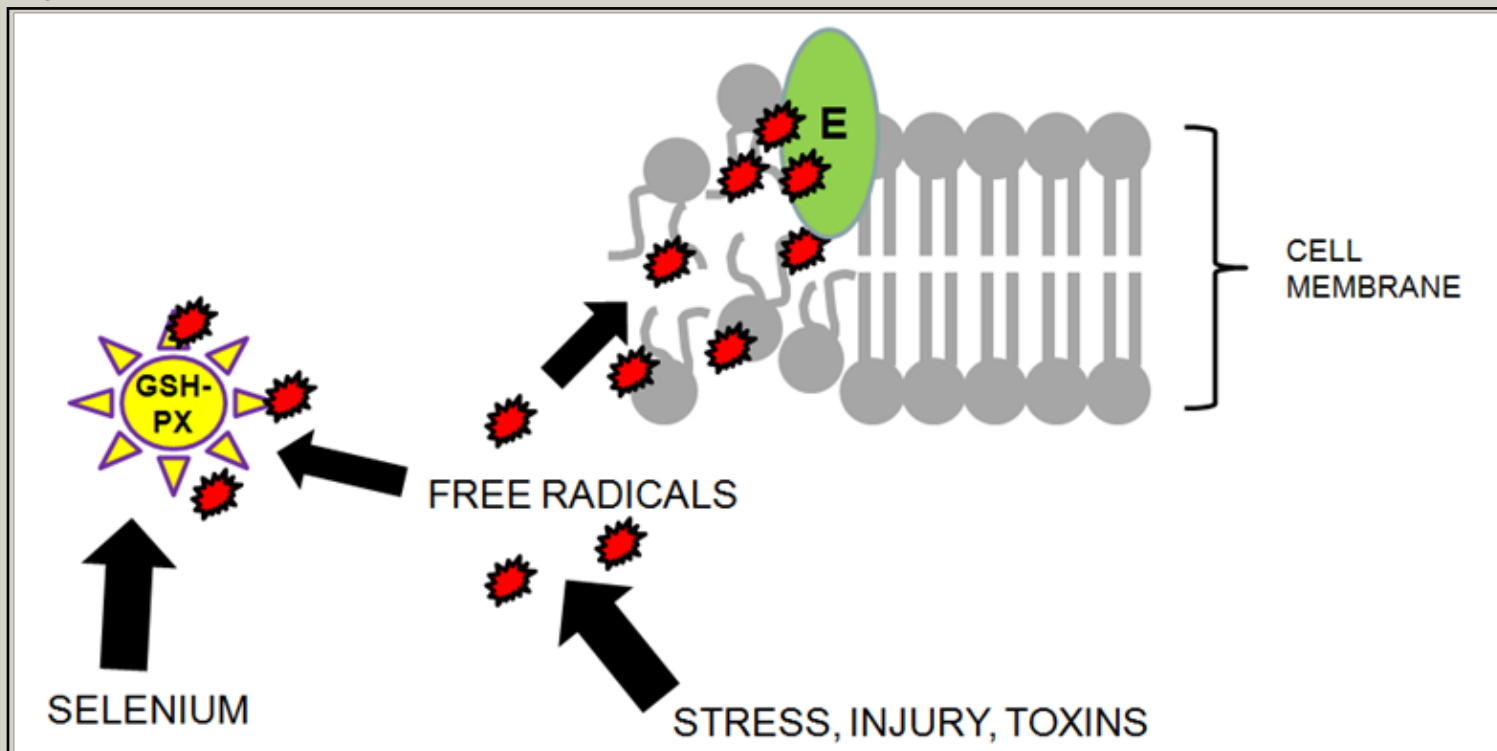
Product Name	Feeding Rate
Beef Backgrounder Vitamin/Mineral Supplement	227 grams/head/day <b>*DO NOT FEED FREE CHOICE</b>
Beef Backgrounder Protein Supplement	1.0 kg/head/day
Beef Backgrounder Ration	3.0-4.5 kg/head/day

## BEEF FEEDLOT PRODUCTS

- Specially designed with optimum levels of trace minerals and vitamins, including Thiamine, to meet the requirements of finishing beef cattle.
- Should be mixed in grain mix or total mixed ration (TMR).
- This product is available as a Vitamin/Mineral Supplement or Protein Supplement.

Product Name	Feeding Rate
Beef Feedlot Vitamin/Mineral Supplement	155-200 grams/head/day <b>*DO NOT FEED FREE CHOICE</b>
Beef Gluten/Distillers Finisher Vitamin/Mineral Supplement	227 grams/head/day <b>*DO NOT FEED FREE CHOICE</b>
Beef Gluten/Distillers Finisher Protein Supplement	1.0 kg/head/day
Whole Corn Protein Supplement	1.0 kg/head/day

**Figure 1. Role of Vitamin E and Selenium in Cell Protection**



*Adapted from Christensen, 2006.*

Well that all sounds quite technical, so let me relate it to something most Canadians understand – hockey! The selenium rich enzymes (GSH-PX) are the defensemen. They try to catch the free radicals before they reach the goal (the cell membrane). Any free radicals that make it past these defensemen are up to the goalie (vitamin E) to stop. If the goalie gets pulled (the diet is low in vitamin E) the defensemen can still stop a lot of free radicals from getting through. If it's a shoot-out and there are no defensemen (low selenium diet) the goalie still has a chance to stop the free radicals. However, the game works much better if the defensemen and goalie can work together.

With beef prices where they are it is worth spending extra money on mineral to make sure your calves are born healthy and strong and your cows are ready to get bred again when you need them. Talk to your nutritionist to make sure that you are getting enough vitamin E and selenium into your cows to keep them healthy and productive while under the stress.

#### References

Christensen, K. 2006. Selenium – The Essential Trace Mineral. The Goat Magazine.

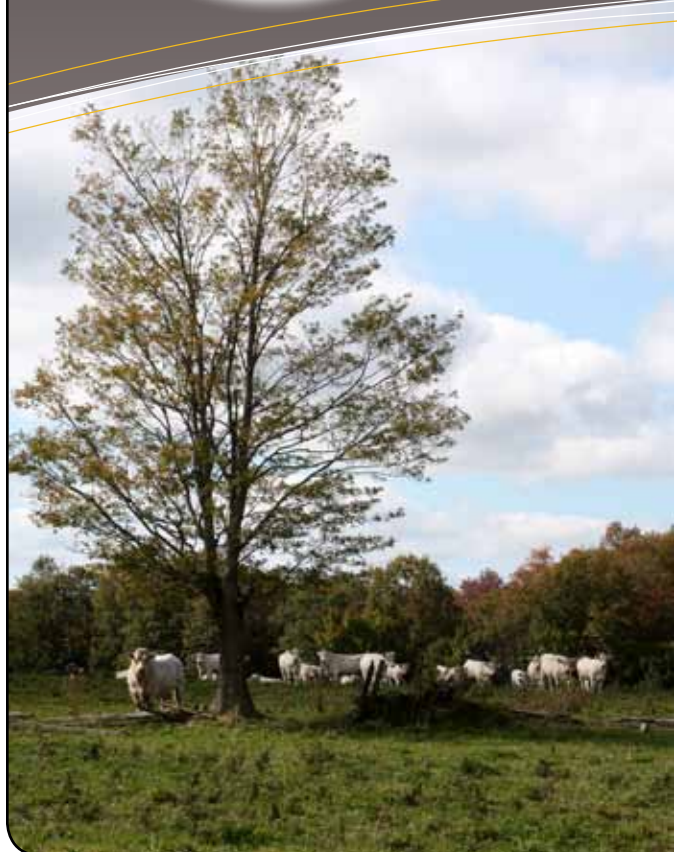


# MINERAL MATTERS!

## GET YOUR CALVES OFF TO THE RIGHT START WITH KENPAL'S BEEF NURSE COW

Chester Patton of Patton Charolais says "We feed a bag a day of Kenpal Beef Nurse Cow mineral and we have done that for the past couple years. We have had the best and healthiest calving season ever. A good mineral program is a must"!

Chester Patton  
Patton Charolais  
Shelburne, ON



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