

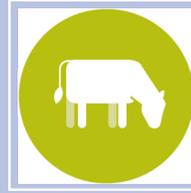


Hi-Range[®] Minerals

Options for Every Stage
of Production



Why do we Feed a Mineral?



Diets consist primarily of forages and these do not always meet the mineral and vitamin requirements of a cow's diet.



Mineral supplementation aids in the long-term productivity and health of the herd.



Finding the right balance between the 6 essential nutrients in a complete diet:

- Energy
- Protein
- Minerals
- Vitamins
- Fat
- Water

Mineral Components

- Minerals have three main components:

Macro

Calcium Sodium
Phosphorus
Potassium Sulfur
Magnesium

Micro

Copper Manganese
Zinc Selenium
Iodine Cobalt
Chromium

Vitamins

A D
 E



What Do Macro and Micro Minerals Do?

Macro Minerals

- Reproductive Efficiency
- Feed Intake
- Immunity
- Daily Gains
- Feed Efficiency

Micro Minerals

- Vitamin Synthesis
- Hormone Function
- Enzyme Activity
- Tissue Synthesis
- Energy Production

Knowing Your Forage and Pairing Your Mineral Accordingly

Grass and Cereal Forages



Higher in phosphorus and lower in calcium and magnesium

When looking at cereal forages, you would be considering oat or barley-based forages. These require a mineral that supplements higher values of calcium. This can be found in the Hi-Range Cereal Forage Mineral. Another option to consider with this type of forage diet, would be the Hi-Range Summer Mineral, as it is a 2:1 ratio of Calcium to Phosphorus.

Knowing Your Forage and Pairing Your Mineral Accordingly

Legume based diets



Lower in phosphorus and higher in calcium and magnesium

Legume based diets, such as alfalfa or soybeans require a mineral with higher levels of phosphorus and lower levels of calcium to supplement the naturally occurring levels in the forage. One would consider the Hi-Range Calving, Breeder or Winter mineral. Remember that the supplementation of grain in the diet, may also contribute to phosphorus levels as well.

Macro Mineral Requirements of a Mature Cow

Macro	Mid-Gestation	Late-Gestation	Lactation
Calcium	0.25%	0.4%	0.5%
Phosphorus	0.16%	0.21%	0.28%
Magnesium	0.12%	0.12%	0.2%
Salt	0.2%	0.2%	0.25%
Potassium	0.5 - 0.7%	0.5 – 0.7%	0.5 – 0.7%

- % of DM (Dry Matter) intake, which the above refers to, includes the entire diet, which includes forage, grain and minerals.
- Look at diets holistically when considering minerals

Micro Minerals Pack A Big Punch



Micro Mineral

Benefits

Copper

Reproduction

Zinc

Growth, hoof health, bull fertility

Manganese

Reproduction

Iodine

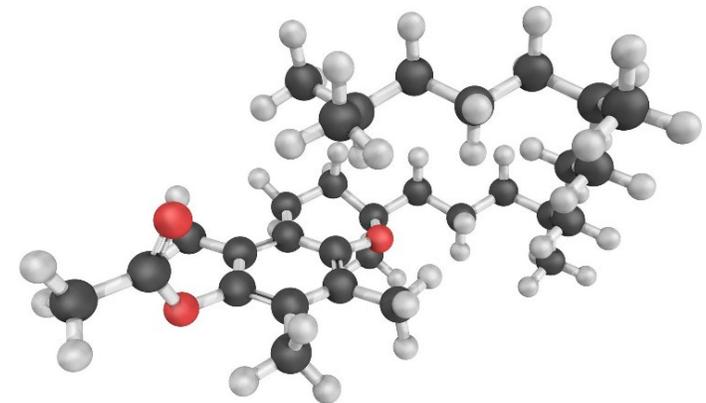
Milk Yield, fertility, retained
placenta

Selenium

Reproduction, immunity, white
muscle

Impacts of Vitamins

- Supplementation is not always required when forage is fed fresh.
- Vitamins oxidize over time with storage
 - 75% of Vitamin A disappears within the first 24 hours of cutting and up to 75% of Vitamin E disappears in 90 days of hay storage
 - 40-50% of vitamins are lost from silage after 6 months of being stored
 - Vitamin E and Selenium functions may overlap and have a close working relationship



Vitamin E Structure

Vitamin Functions

Vitamin	Benefits	Mid-Gestation (IU/Day)	Lactation (IU/Day)
Vitamin A	Bone development, sight, soft tissue maintenance, fertility, feed efficiency	44,800	62,400
Vitamin D	Provided by sunlight, bone, teeth and nerve development	4,400	4,400
Vitamin E	Improves milk quality, immune function; antioxidant attributes; reduces the risk of retained placenta, mastitis and white muscle disease	240 - 304	304 - 560

Ionophores – Medicated Rations



Are extremely harmful to horses and dogs – use caution when feeding a ration with ionophores.



Supports increased feed efficiency, which supports rumen fermentation. Better feed efficiency supports reduced feed intakes and bloat control



High concentrate rations supports improved feed efficiency by approximately 7-10%

Most commonly available ionophore is monensin sodium

Coccidiosis prevention is supported at 22 mg/kg

How to Make Your Mineral Program Work for You

- Intake Stimulants:
 - Salt
 - Cattle crave it and they require 25 - 40g daily
 - Natural Flavor Additives
 - Molasses
 - Dried distiller grains
 - Fruit flavoring
- Monitor mineral disappearance to estimate intakes.
- Encourage mineral consumption when possible, by mixing with grain.



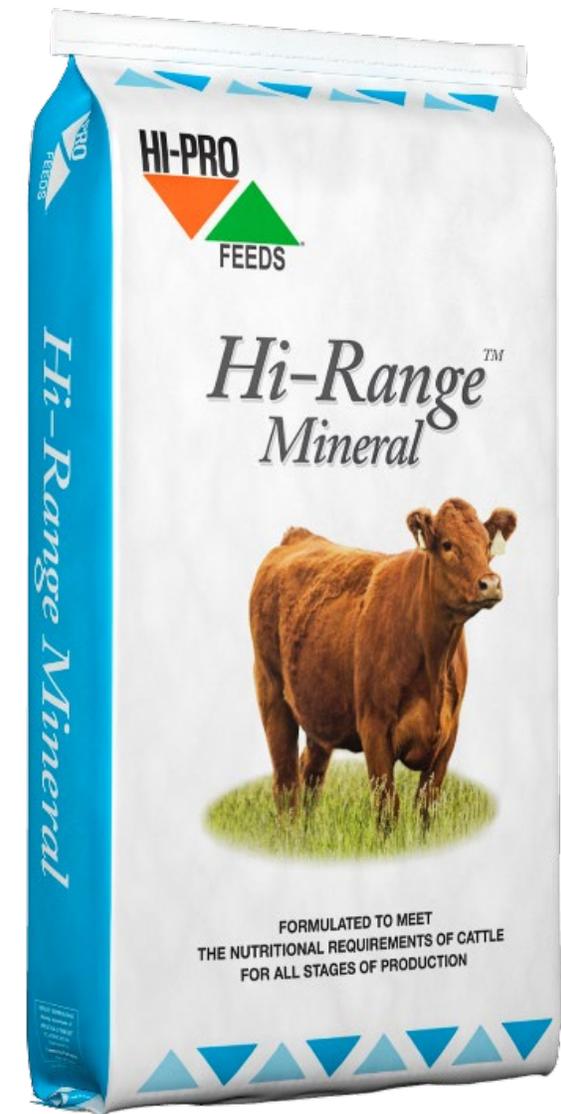


Looking at the Whole Picture

- Water Analysis
 - Helps us to understand the compounds and elements found in the water supply to better balance the dietary requirements.
- Forage Analysis
 - Helps to identify deficiencies or excesses in minerals
 - Contributes to properly developing a balanced diet

Why The Hi-Range Mineral Program Works

- Palatable and Consistent Product
 - Targets higher average herd intakes
 - Reduce dustiness
- Nutritionally Relevant
 - Products available for a range of common beef diets
 - Premium or unique products for specific nutritional needs
- Formulations are available with garlic, monensin sodium, chelates and other medicated options
- The Hi-Range Program is easy to understand and follow, making it easy to find the right mineral for your herd



Hi-Range Beef Mineral Program

The Hi-Range® Mineral Program was specifically formulated to meet the nutritional requirements of beef cattle for all stages of production. These products are also available with Monensin Sodium for improved feed efficiencies, and the prevention of coccidiosis.

This chart is available at your local Hi-Pro Feeds dealer or for download on the Trouw Nutrition website

Product	Product ID	CA %	P %	Salt %	Mg %	Cu mg/kg	Mn mg/kg	Zn mg/kg	Io mg/kg	Co mg/kg	Se mg/kg	Vit A IU/kg	Vit D IU/kg	Vit E IU/kg	Comments
HI-RANGE TM SALT	873721			90		5,000	8,000	10,000	150	50	120				Basic trace mineral salt for pasture.
HI-RANGE BETTER BOOTS TM SALT	873761			90		5,000	8,000	12,000	1,250	50	120				Trace mineral salt with increased iodine and zinc for foot health.
HI-RANGE SPRING MINERAL	873841	10	5	32.5	5	3,000	7,000	9,000	400	50	30	500,000	50,000	1,000	High magnesium mineral for cattle on lush grass where grass tetany is a concern.
HI-RANGE SUMMER MINERAL	873801	10	5	41	1.5	3,000	7,000	9,000	400	50	30	500,000	50,000	400	Pasture mineral for late summer or drought conditions when grass is dry. Can also be used as a multi-purpose 2:1 all year round.
HI-RANGE WINTER MINERAL	873901	12	9	25.5	1.5	3,000	7,000	9,000	150	50	30	750,000	75,000	2,500	Free choice mineral for grazing winter pastures where no added protein is required.
HI-RANGE CEREAL FORAGE MINERAL	873941	20	2	26	3	3,000	7,000	9,000	150	50	30	600,000	100,000	3,000	High calcium and magnesium for confined cattle in the winter. Can also be used for grazing corn.
HI-RANGE CALVING MINERAL	873981	10	8	30	3	3,000	7,000	10,900	150	50	30	750,000	100,000	5,000	Regular calving mineral has no chelates.
HI-RANGE SELECT CALVING MINERAL	874021	10	8	27	3	3,000	7,000	10,900	150	50	30	750,000	100,000	5,000	Premium has chelated manganese, zinc, copper & selenium.
HI-RANGE BREEDER MINERAL	874061	12	10	23	1.5	3,000	8,400	10,900	150	50	30	700,000	100,000	1,000	Regular breeder mineral has no chelates.
HI-RANGE SELECT BREEDER MINERAL	874101	12	10	20	1.5	3,000	8,400	10,900	150	50	30	700,000	100,000	1,000	Premium has chelated manganese, zinc, copper and selenium.
HI-RANGE PREM MINERAL	876471	10	6.5	29	3	2,500	5,355	8,000	200	10	22.5	400,000	40,000	400	42% protein, provides supplemental nitrogen on dormant pastures.

Free choice mineral intake = 85-100 g/head/day

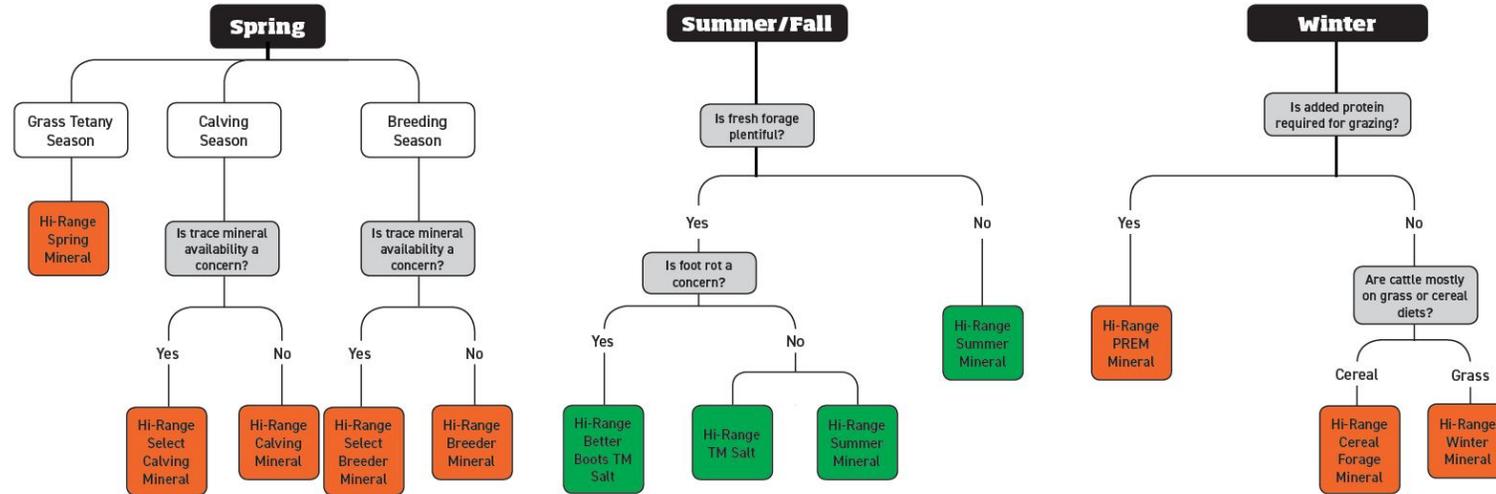
Trace Mineral salt intake = 20-30 g/head/day

PREM mineral intake = 125 g/head/day



Hi-Range Beef Mineral Finder

Our nutritionists have formulated the Hi-Range Minerals to be consistent and palatable. The products are targeted for steady intake by your beef herd no matter what time of year it is. There is higher fortification in the minerals for the calving and breeding seasons when the cows need it the most. The select minerals contain chelated trace minerals for improved bio-availability, including organic selenium. If you are looking for deworming and fly control options, please talk to a Trouw Nutrition nutritionist.



Mineral Supplementation Tips:

- Intakes are higher and more consistent with loose salt compared to block salt.
- Force feed mineral and salt when possible. Boost supplementation rates from late pregnancy through to breeding season.
- Keep Hi-Range mineral fresh and offer cattle 1-2 times/week to avoid leaching and hardening caused by moisture
- Keep fresh mineral inventories. Hi-Range mineral containing vitamins should not be stored for more than 2-3 months.
- Use Hi-Range mineral to manage pastures. Place mineral feeders in under-utilized areas, but not too far away from water as mineral consumption may be reduced.
- Mineral stations are excellent locations for oilers, mops or dusters for fly control.

Individual results from the use of this product may vary as a result of differences in management environment, genetics, health, sanitation, and other factors. Therefore, Trouw Nutrition Canada Inc. and its brand Hi-Pro Feeds, its affiliates or its distributors do not warrant or guarantee individual results and shall not be held liable for any gaps in the results.

Self Reflection

In this section, each question is followed by a slide providing the answer, but before looking at the answer why not challenge yourself first to see what you have learned!



Self Reflection - Question

1) If you are looking for a multi-purpose 2:1 mineral, which would you consider first?

- A) Summer Mineral
- B) PREM Mineral
- C) Spring Mineral



Self Reflection - Answer

A) Summer Mineral

The Hi-Range Summer Mineral is 10% Calcium and 5% Phosphorus. When looking at minerals these are the two primary macro ingredients that will be considered in the diet. These numbers break down to a 2:1 ratio when considering CA and P. This mineral is a great option when looking at late summer pastures, drought or an all-around 2:1 mineral year-round.



Self Reflection - Question

2) True or False. Mineral intakes are higher and more consistent with loose salt compared to block salt.

True

False



Self Reflection - Answer

True

Cows crave salt, so when they increase salt intake, they then in turn increase water intake, which also increases dry feed consumption.



Self Reflection - Question

3) Which two minerals options have higher selenium content?

A) Breeder and Calving mineral

B) Summer and Winter Mineral

C) TM Salt and Better Boots TM Salt



Self Reflection - Answer

C) TM Salt and Better Boots TM Salt

These options have a feeding rate of 20-30g/head per day, which provides 3mg/head per day for selenium. The selenium content for the Hi-Range mineral line follows table 4 CFIA guidelines. Please contact a Trouw Nutrition representative if selenium deficiency is a concern for your herd. They will work with you to find the right product for your needs.



Self Reflection - Question

4) Why do you use the Cereal Forage mineral when feeding a cereal forage?

A) The phosphorus levels in cereal forages tend to be lower and the calcium levels higher, so the mineral helps to add adequate levels of these minerals into the diet

B) The phosphorus levels in cereal forages tend to be higher and the calcium levels lower, so the mineral helps to add adequate levels of these minerals into the diet

C) There is enough salt in the mineral to increase drinking rates



Self Reflection - Answer

B) The Phosphorus levels in cereal forages tend to be higher and the calcium levels lower, so the mineral helps to add adequate levels of these minerals into the diet

The Cereal Forage mineral has high calcium and magnesium levels to positively balance the diet. These two minerals would be lacking with just a cereal-based diet. This is also a good mineral option for those grazing corn.



Self Reflection - Question

5) Which minerals have chelates in them?

A) Winter, Spring and Summer

B) Select Calving and Select Breeder

C) Cereal Forage mineral, Calving and Breeder



Self Reflection - Answer

B) Select Calving, Select Breeder

Each of these mineral options have chelated manganese, zinc, copper and selenium, which increases the bioavailability and supports digestibility for the cow. This means you get more bang for your buck, especially during crucial breeding and calving time frames.





Thank you for completing this e-Support Module. Please reach out to your local Hi-Pro dealer to find answers to additional questions or connect with us directly at:

<https://www.trouwnutrition.ca/en/contact/>