

## Hardy Livestock in the Land of Ice, Snow and Freezing Wind

By Dr Will Winter

Winter in the northern climes is a rough time for all of us. People suffer from “colds”, flu and a variety of upper respiratory symptoms, including those that can get worse, going to bronchitis, “walking pneumonia” and, worst case scenario, full-blown pneumonia. Children, the elderly and those who are immune-compromised suffer the most, and pneumonia was once the most common cause of death in the US.

Livestock also suffer and the reasons for that are multiple and cumulative. Quite often the animals in the herd or flock are bunched up during times of cold weather and have more contact and therefore more germ transmission. They also share more contact at feed bunks, hay racks and water troughs. When we look at the cause behind the cause, however, we see that erosion of the immune system underpins almost all infectious disease.

### Cold Weather Blues

When it comes to basics, it might be said that the most disease-producing factor in cold winter weather could be just plain lack of energy in the forages. This tends to be the most common *limiting factor* in livestock production year-round but it shows up in many ways in the winter. Animals fed low-energy feed-stuffs use what energy they have digesting food and the overall result is a greater likelihood of diseases and reproductive problems. These animals are often cold and miserable all winter and can expire during a blizzard or ice storm as they have no reserve. Dairy animals that are milked year-round will usually show a drop in milk production which can be taken as an immediate indicator of problems. The brix Index of forages is the guideline of utmost importance and many believe it's the most informative test for the money. Many farms, especially as they begin to remineralize their soils, struggle to maintain a 3-4% brix level. This is just plain too low and it's amazing how many farm problems of all sorts go completely away as the average brix levels exceed 10%, with 12% commonly considered to be the gold standard.

Another simple weakening factor is just plain lack of drinkable water. For those of us living in the north-land, maintaining ice-free water in adequate supply is a daily headache. Modern tank heaters, frost-free water nozzles and buried PVC pipe have done wonders for easing the burden.

Obviously most winter forages tend to be deficient in adequate vitamins, enzymes, nutrients and overall

plant vitality. Stored forages are almost always inferior to grazed fresh forages and each form of storage has it's plusses and minuses. Dried hay and dried concentrates protect most nutrients but in wet years it's impossible to guard fully against mold contamination.

A common mold is the Fusarium family which, unlike Aspergillus aflatoxins, don't kill suddenly and viciously, but they smolder inside the body. These mold toxins rob health by stealing immune strength and undermining fertility. Fusarium toxins lead to an insidious health problem commonly called “Lazy Leukocyte Syndrome” which basically consists of an army of white blood cell defenders that are worthless against infection.

Animals trying to function in the higher latitudes also suffer from lack of sunlight, more specifically ultraviolet light, that force needed to generate adequate levels of vitamin D3. Experiments conducted at Randleigh Farms back in the 1950's proved that exposing cows to uv lamps during milking or barn time radically improved their health. Interestingly, this milk would also have more health-giving vitamin D3 levels producing healthier calves and more health for the human customers.

Another fat-soluble vitamin essential for good membrane and immune integrity is vitamin A. Formerly called the “anti-infective” vitamin, A is needed for membranes of the respiratory tract as well as the eyes. Lowered vitamin A predisposes to shipping fever, pneumonia, scours and pinkeye. While prime pasture grass and legumes is loaded with the carotenes that are converted by the body into vitamin A, the stored forages suffer a loss with hay being the most likely to lose vitamin content. Hay that was heated from being put up too wet loses carotenes as does all hay stored over 300 days. Silage or baleage is the best storage technique to preserve carotenes and good fermented feedstuffs will retain 90% of the carotenes. Alfalfa and clovers contain the highest levels of carotenes as compared to grasses whereas orchard and canary grass are the highest of the common grasses. It's important to note that animals that are pregnant in the

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winter have variations in immune integrity during gestation the most important of which is a severe dip just about 2 weeks before parturition. During this window many pathogens that will later cause mastitis or uterine infection penetrate the immune shield. Wise herdsmen will augment the feed, vitamins and care during this period of vulnerability.

**Cold Weather Husbandry**

As stated before winter is the time to pour it on with good forages and good management. This would include prevention of mud problems, wind shelter and fresh drinkable water. It's also a time where making sure that adequate minerals and vitamins are being provided. Think of it as an insurance policy. If you are sure you have no deficiencies and if you haven't had a vet bill in 50 years, well, that is a good sign you are on track and can probably quit reading. If, on the other hand, you are unsure, or especially if you are having the occasional problem with ringworm, lice, foot rot, pink-eye or other issues, then these recommendations probably apply to you.

**KELP-** nothing says love to the immune system like delivery of all the parts required to make the body im-

une. I like to use a good brand such as Thorvin, and offer it free choice in a covered mineral feeder at all times. It's acceptable to mix the kelp with a good granular mineral salt such as Redmond's, and they can be mixed 50:50.

**DESERT DYNAMIN-** A trace-mineral bearing earth-mined clay that can be offered to the herd or flock free-choice at all times. This is an excellent buffer for pH issues and it will absorb mold toxins or other pollutants in the body. It's a bouillon cube of minerals for the body.

**CALCIUM-PHOSPHORUS TRACE-MINERAL MIX-** This is most often in a 2:1 ratio and contains other macro minerals as well. A smart feed mill will augment the so-called immune minerals as well and these include IODINE, SELENIUM, COPPER and ZINC.

These ratios can be found from modern sources online or from books and we can list the recommended levels to maintain. For an inexpensive and simple source, one can use the product called HEMOCELL-100 as a trace mineral pre-mix pack and this can be mixed in with the larger and cheaper ingredients. (Hemocell-100 may also be used as a direct free-choice supplement or top-dressing if there is an on-going herd health problem, or given to certain individuals with health problems).

**ESSENTIAL TRACE MINERAL LEVELS-** For cattle, we like to maintain these levels of the "limiting factor" health and immunity minerals, Calcium = 7,500-8,500 mg/day, Phosphorus = 400 mg/day, Magnesium = 5000-10,000 mg/day, Copper = 150-250 mg/day, Zinc = 1200-1600 mg/day, Selenium = 4-6 mg/day, Iodine = 25-28 mg/day, Manganese = 1200 mg/day.

Maintaining herd health in the winter is one of the ultimate challenges of holistic management. Each step taken brings the farm more into alignment with profitability and success. No body gets it 100% right all the time but then again, no one ever said it would be easy!

*William G. Winter, DVM is a free-lance journalist and teacher. He is primarily interested in awakening the world to the human health benefits and the environmental bonus that comes from raising 100% grass-fed livestock using sustainable practices and the magic of holistic herd health. He is also the herd health consultant for producers of livestock for Thousand Hills Cattle Company and lives in Minnesota where the grass grows green and lush, and all the producers children eat right and are therefore above average. Contact him with your concerns, grand concepts, and rave compliments at [holistic@visi.com](mailto:holistic@visi.com) or [www.willwinter.com](http://www.willwinter.com). ♦*

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