



Herd Health Bulletin

High Somatic Cell Count Strategies-Part I

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There are few topics more frustrating than having to deal with high somatic cell count (HSCC) milk, especially when great efforts are taken to avoid the problem and then it still shows up. Many factors can negatively affect somatic cell count, making it very difficult to sort through all of the possible factors, to determine which one is actually responsible for the problem. Before spending money on treating HSCC, it is good to strategically categorize the problem. Try to determine the source of the HSCC, evaluate the cows ability to participate in the healing process, consider which therapy is most appropriate and which cows should receive treatment. Here are a few thoughts that may be helpful in managing HSCC.

1) **Consider the Obvious Possibilities.**

It is good to start the search for causes of HSCC, by taking a hard look at obvious issues that directly impact the cows cell count on a daily basis, i.e. the milking system, proper milking technique, person milking, poor environment (muddy lots, bedding). Go through your checklist and make sure these issues are not the root of the problem before spending money on a therapy. For example, simply fixing a faulty vacuum pump, can go a long way to correcting HSCC and may eliminate the need for additional therapy cost.

There are other factors causing HSCC that do not respond well to therapy. Two examples are if the herd is suffering from significant levels of stray electrical current or if the herd is on an acidotic ration. Generally, response to therapy is poor in these situations. It seems that when a herd is under this kind of high level, persistent, long-term stress, their immune system is severely compromised and therapies have little effect. It is best to eliminate the cause and then apply immune support for proper recovery in these situations. If you have properly eliminated the above issues as possible causes for HSCC then you need to further evaluate what might be the best approach for lowering HSCC. This brings up the next question in trying to solve a HSCC challenge.

2) **Does the Whole Herd Have HSCC, or Just a Few Cows?**

It only takes a few cows with HSCC to significantly raise somatic cell count for the whole herd. In either case, again, the question is why is it high and the cause should be eliminated. But in considering an appropriate therapy it makes a big difference if it is a few cows or if it is the whole herd. When dealing with a few animals, intensive treatment of the targeted cows would be the most cost effective (see treating individuals later in this article). If it is a factor that affects the whole herd, the use of an immune support for the whole herd may be appropriate.

3) **Stress Can Affect HSCC.**

It is important to realize that cows can have HSCC even if there is not an infection directly in the udder. If the animal is heavily stressed i.e. respiratory, hot weather, post partum, they will have an elevated cortisol level in their body due to the higher stress level. Cortisol is a fight or flight hormone (like adrenaline) that quickly rises when an animal is stressed. Initially cortisol speeds up immune function and antibody production

for a short period of time; however, if cortisol levels remain high for any length of time, the immune system will be compromised and antibody production is reduced. This may be due to a combination of cortisol side effects, such as depleting nutrients/building blocks needed to make antibodies and/or the exhausting of the immune system organs. Fight or flight hormones are intended for short-term survival support and if they are used long-term, the immune system can become dysfunctional, leaving the cow or calf without the necessary protective shield to ward off infections, resulting in all kinds of problems (pneumonia, mastitis, uterine infections, foot problems, poor reproduction). Elevated levels of cortisol also affect other systems in the body. It can significantly reduce digestion, weaken bones, the skin can actually thin over time, reproduction is shutdown and the animal is in a focused struggle for survival. During this process the white blood cell production goes up during the struggle to survive. If an animal cannot win the struggle and conquer infection, the somatic cell count will not go down-the struggle will rage on until corrected or until the immune system is exhausted and the animal dies. It is important to support the immune system in order to reduce HSCC.

It is also important to realize that reducing HSCC does not always require a therapy targeted to kill bugs, i.e. antibiotics. Assuming that antibiotics up the quarter or in the body are needed to reduce HSCC is a very narrow perspective of a much larger issue. If the immune system is functioning at an optimum level, the opportunity for persistent HSCC is reduced. If HSCC does occur, what therapy would be better than one that supports the immune system itself to fight the infection? Reserve the option to kill bugs with a natural antibiotic only if absolutely needed and only as a last resort consider conventional antibiotics to save the life.

4) **Immune Support Options.**

Remember stress is always associated with HSCC, and high cortisol levels occur during times of stress. Understanding that it is essential for the animal to have a strong immune system to fight HSCC, brings us to the realization that if we could help the animal address high cortisol levels, it could reduce HSCC.

A) **Remove the Stress if Possible.**

This is a given; however it may not always be possible, i.e. severe weather, moving animals, postpartum. If removing the stress is not possible, then we may need to help the animals immune system cope with the stress and the high cortisol level.

B) **Consider Toxemia.**

When an animal has toxemia, whether it is caused by a pathogen, or if it is caused by a mycotoxin/moldy feed, it is not unusual to have a high HSCC. Check the feed for mold, or for high spore counts to determine if the animals are suffering from toxemia. Removing the moldy feedstuff and/or using toxin binder in the feed, like Toxi-Halt, will not only help to reduce HSCC, but also improve dry matter intake, milk production, and other associated ailments. If the toxemia is generated by a pathogen, again using Toxi-Halt in the diet could be very beneficial. Due to the significant stress a toxemia can generate, it would be good to consider using a direct immune support like Crystal Aloe for a short period after correcting the toxemia. Another point to consider during the treatment for toxemia, is to avoid the potential of compromising the immune system with toxin binders, such as bentonite, diatomaceous earth or charcoal, that may also tie up critical, immune supporting trace elements.

C) Direct & Immediate Immune Support- When Cortisol Levels Are High.

Research has shown (Robert H Davis, Ph.D.) that compounds in aloe vera can help the immune system when cortisol is high. The dietary use of these aloe vera compounds do not lower the cortisol level, but rather allow immune function to improve despite the presence of high cortisol levels. Crystal Creek's experience in working with our clients, supports the use of Crystal Aloe Vera Pellets (or Juice) as a short-term preventative in the diet whenever an animal is under stress, or as a lead product to support other therapies during focused treatment. We need the cow's immune system functioning well, to pull her own weight in the fight to stay healthy and overcome disease, i.e. HSCC.

Crystal Aloe products can offer a direct and immediate support to the animal's immune system during times of stress.

D) Long-term/Indirect Nutritional Immune Support.

The immune system, like all other body systems, is directly linked to good nutrition. There needs to be adequate levels of key nutrients (building blocks) stored in the muscle tissue and bone marrow, that the immune system can use, in its manufacture of antibodies, macrophages, and white blood cells. These are the bodies' main defense against infectious disease. When the body's nutrient stores are low in any one of many essential nutrients, the immune system's performance can be reduced. There are several aspects to delivering proper nutritional support to the immune system. The nutrients need to be in the ration, in a balanced format, the cow has to eat the ration, the nutrients need to be properly digested, absorbed and finally properly assimilated into appropriate body systems. Each of these steps in nutrient delivery need to be working well in order to allow the immune system to respond to proper nutritional support.

Research has shown (Texas Tech Univ., Univ. of California and Univ. of Nebraska), that nutrients and compounds in Dairy Glow offer support to the immune system by enhancing critical digestive efficiency needed for proper nutrient delivery to the body. Dairy Glow offers immune support in two important ways. First, Dairy Glow provides high levels of available trace elements and key nutrients that are known to directly support immune function. Secondly, there are compounds in Dairy Glow that have been shown to improve digestive function, starch digestion, soluble protein utilization, supports proper pH balance in the digestive tract and improves intestinal tract nutrient absorption contributing to better utilization of nutrients from the whole ration.

E) Antioxidants for Removing Cellular Waste in Stressed Animals.

High levels of vitamin C and vitamin E have been shown to support immune function. They are key to removal of cellular waste during times of stress. Products like Dr. Paul's Antioxidant Blend Care are excellent for short-term support during focused therapy to reduce HSCC.

F) Autogenic Wheys.

Autogenic wheys are not designed to deliver antibodies to the cow, but rather they help the cow's immune system develop her own antibodies. Crystal Whey is an outstanding autogenic whey that functions similar to a fast acting vaccine, focusing the cows' immune system to produce antibodies for specific pathogens. Autogenic wheys are at their best if the immune system is not dysfunctional due to elevated cortisol levels or due to a depletion of key nutrient reserves in the

body tissues. If there were a noticeable stress level, a HSCC, or other indications of a high cortisol level, it would be logical to use dietary Crystal Aloe Pellets or Crystal Aloe Juice in conjunction with Crystal Whey for the best result. Crystal Whey comes from certified organic herds and has no preservatives or additives.

G) Natural Antibiotics.

In serious cases where individual cows need to be treated for HSCC, it may be beneficial to include a natural antibiotic along with the immune support therapy. There are some advantages to the animal in using a natural antibiotic such as garlic tincture. Conventional antibiotics are known to suppress immune function, which is not a desirable trait, especially at a time when we want to support optimum immune function. A natural antibiotic like Dr. Paul's Garlic Tincture or Tri-Biotic will not suppress the immune system and has a wide range of antibacterial activity.

H) Other Therapeutic Supports.

There are a number of other therapeutic supports that could be considered when addressing HSCC.

- Homeopathies like, Bryonia, Phytolacca, Silicea, SSC are all popular.
- Appetite and digestive supports like, Keto-Care, Super Boost Capsules can play a major role in maintaining dry matter intake during and after therapy.
- Kelp is another dietary immune support that has a number of virtues, one of which is non-nutritive immune support compounds. Kelp has a broad spectrum of nutrients that can support the immune system, however the only nutrient of significant volume is iodine. When it is necessary to replenish body tissue with substantial levels of immune supporting nutrient, Dairy Glow is the better choice. It would take approx. 47 lbs./hd/day of kelp to equal the same trace element intake of certain key trace elements, as does 2 oz of Dairy Glow per head per day. In addition, Dairy Glow contains high levels of compounds to support optimum digestive efficiency, improve soluble protein utilization and improve fiber digestion, so that the cow can better utilize her whole ration.

See Also- Part II-HSCC Treatment Options