DR. PAUL'S LAB, LLC

W20384 State Road 95 Arcadia, WI 54612

April 22, 2019

Hello Dennis

As we discussed per our phone call, I will gladly relate my experiences with humate. I am a large animal veterinarian with 44 years experience - 35 of them in active large animal practice. The last nine years I have been the staff veterinarian for Organic Valley Cooperative. I'm responsible for the health of 1550 organic dairy farms in the U.S. These farms all feed different rations. About 12 years ago, while studying agronomy, I became aware of humate for its beneficial attributes for the soil and soil life and all the synergies and benefits it provided. This quickly was applied to the microbes of the ruminant as life in the soil is parallel to life in the rumen, down to the same PH. In my long career, I have seen many things come and go. I call them new mouse traps. A few of them really stand out and don't disappear from the scene - they become mainstays, as what they do is so logically basic. Humate is one of these items. Here is how I have used and recommended humate:

- 1. For remicroizing dead soil that has been conventionally farmed for years with cides and glyph sate.
- 2. Putting it in the seed bed for increased germination as it is highly energetic.
- 3. Using it in foliar sprays raises the ERGS (energy level) for plants and increases the efficacy of the foliar.
- 4. Detoxifying moldy feed. In the Mid-Western U.S in 2009, we had a wet cold summer and our grain crop and half our hay crop was absolutely loaded with molds, causing upset rumens, abortions and sick cows. I produced a letter to the 1500 farmers I worked with through Organic Valley, encouraging them to feed 2 to 3 ounces of humate in the ration and to free choice it also to absorb these mold toxins and pass them out of the manure. I worked with great success. I made a lot of farmer's believers in using humate.
- 5. Free choice humate to all dairy livestock, all ages, and all the time is a recommendation made to all our farmers to help the indigestion from forage changes. When opening a silo or bag of corn silage, this is a new carbohydrate that requires a new set of organisms to proliferate, to digest this new plant in the rumen. If free choice humate if available, bovines will seek it out and purge their rumen for about 18-20 hours and then quit. The rumen flora, bacteria, viruses, amebas, yeast, algae the whole rumen world utilize the carbon, the trace elements the ergs of energy to reproduce to build the proper populations to digest and break down the differing plant materials for life.
- 6. Any intestinal upset, winter dysentery, bacterial enteritis or any sort all are mediated by humate.
- 7. Lastly, it is the main work horse in a liquid calf scours remedy I manufacture at Dr. Paul's Lab. This product as two humate in liquid form that is used as a preventative for scours. Only ½ oz once daily for 4 weeks destroys cryptosporidiosis and coccidosis. It also prevents other common ailments such as e-coli, salmonella; rot corona scours from gaining a foothold. Humate feeds the beneficial microbes that are normally in the gut. Incidentally, it increases feed efficiency also. I haven't seen anything that has been introduced into the daily world that is so very reasonable in price, completely safe, does no harm to the livestock, the food chain or environment and does more very beneficial things than humate in decades. Anyone in the dairy industry needs to look at this product. I very much like the elemental profile and the humic-fulvic acid ratios of U-Mate. It's the top of the line in humate quality.

Sincerely
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