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The Growers Solution

EARLY FALL 2006

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VOLUME 19 ISSUE 3

Accidentally Opening the Fescue Bale was Good

By Jennie Henry

Feeding Kentucky 31 fescue to his milk cows was kind of accidental, but it led Philip Zimmerman of Versailles, Missouri, to an in-depth study. He was amazed at his cows production afterwards. "They dropped maybe 2 pounds a day," he said, "and I thought they would have really crashed."

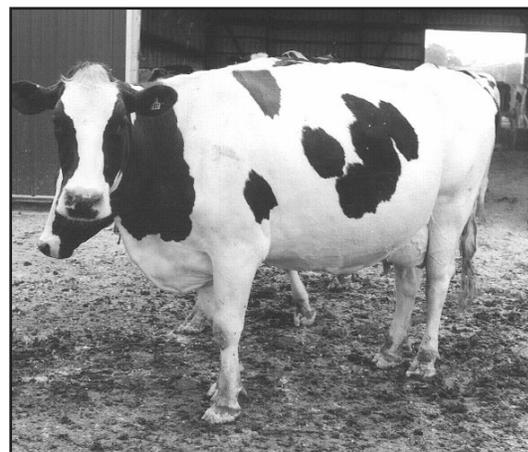
In his area just north of the Lake of the Ozarks, the summer of '05 was one of extreme drought and heat. Along with his other hay, he had cut and wrapped some common Kentucky 31 fescue. Philip remembered, "I cut it real young, when it should have been cut. It was actually supposed to go to the heifers, but when I cut the plastic off, it looked so nice, smelled so good, and looked real soft, on the spur of the moment, I dropped it in the mixer with the corn

silage. I switched my milk cows from red clover balage to fescue!"

Keeping a close eye on them, Philip continued to feed his cows the fescue. "They dropped maybe two pounds a day, and even the manure looked good. Any other time, it would have been a real stiff consistency, but this was real loose. I was just amazed."

Philip remembered, "I was feeding the fescue when Scott (Growers Representative, Scott Martin) and Jim (Growers Director of Research, Jim Halbeisen) came by. I hadn't thought much about why I was getting the good results

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Comments on Heavy Metal Limits Proposal

By Jim Halbeisen

OMRI is a major examiner for the National Organic Program (NOP) of products seeking to be approved for organic use or to be used in organic production. They asked us to comment on their proposal to establish limits on heavy metals in products already on their approved list. A couple of years ago we contacted OMRI asking them for general information. We assume this is how we happened to be on their e-mail list.

The following is a copy of their e-mail asking for comments.

>To: <growers@hmcltd.net>
>Sent: Friday, June 02, 2006 7:29 PM
>Subject: Comment on OMRI's proposal for limits on heavy metals fertilizers
>
>>The Organic Materials Review Institute has prepared
>>and posted a proposal to establish limits on the amount
>>of arsenic, cadmium, and lead that OMRI Listed
>>products may contain. The proposal is open for public
>>comments. We would like to invite you to comment on
>>the proposal. The public comment period closes July 16,
>>2006. Please visit our website to view the proposal and
>>supporting documents.
>><http://www.omri.org/heavy-metals.html>
>>
>>Warm regards,
>>Miguel Guerrero
>>OMRI Communications

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Soils, Their Use, Abuse and Restoration

(This is the second segment of an entertaining article by our long time good friend, Sam Niblett as he describes his agonizing introduction into raising potatoes in Maine. Although written 25 years ago, its message is relevant and timely today. Eds.)

By Sam Niblett of Easton, Maine

I decided not to try and outguess the market, so I contracted an area processor to take a large portion of the crop each month for its French fry department. The \$6 per barrel (165 lb.) wouldn't make me rich, but it should, I reasoned, recoup my costs and feed the family. How can you beat that plan for your first year in business?

Well, by having your buyer declare bankruptcy, that's how!! The market price the year before had been \$12 to \$15 per barrel, so in

order to get contracts, the processor had to write deals real favorable to the farmers. But when the bottom fell out of the market, as it does when over production follows high prices, there was no money left to pay for raw products after "essential costs were met."

Now what? Three hundred and eight (308) farmers were owed over five million dollars for the most expensive crop in history. Would they survive? More to the point, would I? I had filled my contract and even "sold a few" on another man's, because, at the \$1.50 to \$2.00 per barrel street price, I would rather have the promise of six dollars even if it was a "few months in coming."

It never came. The winter of 1974-75 was the worst time of my life, but I clung to the local clichés, such as; "You've got to make it where you lost it," or "Cheap seed means high priced potatoes."



Sam Niblett, East, Maine

1975 - 1976

I was now thirty four years old, quite bewildered and over \$100,000.00 in debt, but "it was such a nice place to live!"

I was able to refinance my real estate, pledge my equipment and borrow from life insurance policies to, somehow, plant again in May of 1975. But far fewer acres had been planted due to the disastrous effect the area's major

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Accidentally

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until Jim explained that by getting the high calcium lime and Growers on that fescue, there was more nutrition in it for the cows."

Philip first bought Growers Nutritional Solutions (GNS) from Scott in 2001. He farms 100 acres, milks between 30 and 35 cows and raises corn, alfalfa, red clover, grasses, and wheat for straw. He seasonally pastures his

animals, and in the spring he does quite a bit of rotational grazing.

His first cutting is usually put into high moisture balage, and is fed to the majority of herd. Some dry hay is baled from later cuttings.

When Philip began using GNS, he tried feeding it by mixing it in a grinder mixer, but he says, "I didn't like it, because it caked up on the sides, so I quit using it. I started using Growers again when I bought a vertical TMR mixer, and it works fine now." He uses a mix of soybean meal, expellers meal and dried distillers grain for protein, and GNS for mineral in his mix. It's been right at a year since he has been using GNS in the TMR.

"We had extreme drought and heat last summer, and with all of the stress, I don't feel like I'm having as many breeding problems as I should have had. Maybe I can give Growers most of the credit."

When Philip started using Growers in 2001, he also started applying high calcium limestone. He said, "I covered the whole farm. We usually go 3 ton an acre at a time, and my custom applicator tells me that is twice as much as I should put on." Philip uses a corn, to wheat, to alfalfa/or clover rotation. It usually stays in alfalfa for three years, then he spreads manure and plows it down. He applies the limestone when he sows wheat.

Philip applies 4 gallons of GNS per acre directly on the seed with a squeeze pump at planting. He foliar feeds his crops with mist blowers. "I really like it," he said. "and putting it on in the evening works, but it's a challenge with milking, so I usually get the sprayer and tractor ready to go beforehand."

"When I used to put down dry fertilizer, a lot of times I would get a bunch of fields ready. Now that I have my own tank and sprayer, we are definitely more flexible. The wind is the

biggest drawback, so late evening is always the best time, but finishing up in the dark can sometimes be a problem."

Philip does use some supplemental nitrogen on his crops. "Like I told Jim," reflects Philip, "the University people would probably have a fit. Growers is all the alfalfa gets. Corn following alfalfa or clover gets no additional N. If it is corn after corn, I apply 40-50 pounds of actual nitrogen disked in before planting. Sometimes in the spring with alfalfa and wheat, I will go with 40 pounds of nitrogen, but in five growing seasons on Growers, I've bought very little phosphorus and potassium."

With the record drought last summer, the yield on corn silage was a respectable 12 tons per acre. Philip remembered, "The year before, was the best corn yield I've ever had since I started farming and I am definitely spending a lot less on fertilizer than I used to, and my crops look better."

"I was taught you need so many pounds of fertilizer, so at first the Growers Program didn't fit into my head. I can't say whether it is right or wrong, but it is working. I like the way my crops are producing and I'm spending less."

When asked why he decided to give Growers a try, Philip replied, "Reading Doc Tiedjen's book (*More Food From Soil Science*) opened a whole new avenue. He was saying there's a lot of unknowns out there. I really agree with that. The University literature says you need so much and that's the way it is. I got to thinking about our real nice garden on the farm we had been renting before moving here. We didn't put any chemicals down, just manure, and we had good production and good food year after year. If you listen to the experts, that garden should have gone to pot. I'm concluding we can grow crops with a lot less fertilizer than they are saying." ■

On The Road Again

EARLY FALL 2006

This fall Growers Nutritional Solutions is scheduled to set up and staff booths at the following upcoming farm shows. It's a great time to stop in and review your plant food and mineral supplement programs, hear about new developments at Growers or just chat with the folks who make it all happen—your friends and neighbors.

- | | |
|-----------------|---|
| September 12-14 | Canada's Outdoor Farm Show Woodstock, Ontario |
| September 13-14 | Central New York Farm Progress Show Mohawk, NY |
| September 19-21 | Ohio Farm Science Review London, OH |
| September 19-21 | Center for Small Farms (at FSR) London, OH |
| November 2-4 | Mid-Atlantic Farm Show Concord, NC |

Hope To See You!

Comments

Continued from page 1

Our response letter follows.

June 23, 2006

Organic Materials Review Institute
2495 South Hilyard Street, Suite B
Eugene, OR 97403-3698

Attn.: Miguel Guerrero, OMRI
Communications

Re.: Comments on OMRI's Proposal for
Limits on Heavy Metals in Fertilizers

Ladies and Gentlemen:

We applaud OMRI's recognizing the need to measure the heavy metals, particularly the element cadmium, contained in soil applied fertility materials.

However, reviewing the Proposal on the OMRI Web site dated June 1, 2006, we question whether the contemplated testing procedures will be sophisticated enough and whether the allowable loading rates will be strict enough.

Our concerns come, in part, from having read the article "Heavy Metals in Fertilizers" in the *Farm Journal* in 1998. It was written by the University of Kentucky's veterinary pathologist Dr. T. W. Swerczek, DVM, Ph.D., and it dealt with ruminant animal disorders. What caught our attention was that it was pertinent to numerous scientific reports indicating chronic environmental cadmium exposure to be potentially very detrimental to human health. Among them was one that followed in 2000 from the United States Environmental Protection Agency confirming several thousand tons of bargain priced zinc

product, highly contaminated with cadmium, had been imported from China over a period of several years and it had been used in feedstuffs and fertilizers throughout the United States.

While conversing and corresponding with Dr. Swerczek, we at Growers Chemical Corporation began closely examining various phosphorus and zinc sources and different feedstuffs and fertilizers for cadmium contamination.

In 2001 Dr. Swerczek published in *The Growers Solution* an article called "Annual Meeting: Special Report Solution to Cadmium Toxicity." He advised testing procedures be used that would address the masking effect various elements have on cadmium. He warned that commonly accepted inexpensive testing procedures do not find the true levels of cadmium.

Out of concern for our customers we followed his advice and used more appropriate testing. Results confirmed customers using GNS while following the recommendations for its use can be assured that very minimal levels of cadmium are finding their way into their farming operations (See the enclosed Analysis Reports for Rock Phosphate and Growers Nutritional Solutions and the Reports Comparison.) Our decision to monitor cadmium levels has been justified when we find our producer customers' product quantity and quality and animal health are some of the best in the field of agriculture. This was not always the case with other agricultural protocols, including organic production.

Another important aspect concerning cadmium in the food chain is its relationship with the element calcium. Chemically, cadmium and calcium are very similar in physical size, which makes calcium a good

neutralizer of cadmium's harmful effects. It is especially important to understand and consider this fact when setting guidelines for soil applications or restrictions for cadmium.

Third National Report on Human Exposure to Environmental Chemicals released in July, 2005, by the United States Department of Health and Human Services Centers for Disease Control and Prevention seems to have confirmed our suspicions about cadmium being found in the food chain as high as the human level. The report indicates there is some confusion about cadmium findings. In the past it was believed cadmium in the human blood was the result of smoking, however, the report shows other chemicals coming from smoking are decreasing while levels of cadmium are on the increase.

So, if smoking and its effects are decreasing, why is the level of cadmium in the blood increasing? We at Growers Chemical Corporation believe the CDC report is probably correct, and the increased levels of cadmium found in humans is from the food chain, and, in turn, from undetected or underreported levels of cadmium in fertilizers and feedstuffs.

Our concern is that detection of very minute levels of cadmium is very difficult, but these same very minute levels can be extremely dangerous in the food chain.

Should you be further interested and/or wish to contact us, we do look forward to hearing from you. Thanking you for asking for our comments, we remain,

Sincerely,

GROWERS NUTRITIONAL SOLUTIONS

James L. Halbeisen
Director of Research

COMPARISON OF THE ANALYSIS REPORTS

While not directly related to the subject Proposal, the enclosed Analysis Reports on our Growers Nutritional Solutions and Rock Phosphate are of interest here.

The levels of Cadmium (Cd) in our randomly selected sample of Rock Phosphate

are nearly 50 ppm, whereas the GNS shows less than .5 ppm. In other words there is 100 times more Cd in the Rock Phosphate sample than there is in our GNS.

Comparing farm applications of the two products shows much wider differences in the

amounts of Cd applied and possibly accumulating per acre.

Applying, say, 250 pounds of Rock Phosphate per acre containing 50 ppm Cd would result in .0125 pounds Cd per acre or 5.675 gm Cd per acre.

Applying a typical recommendation of 6 gallons per acre per crop year of GNS @ 11.4 pounds per gallon, about 70 pounds per acre, would result in .00035 pounds Cd per acre or .0159 gm Cd per acre.

This would represent some 357 times more cadmium per acre using Rock Phosphate as compared to using GNS.

To put this in perspective, a popular EPA regulated herbicide, is restricted to a maximum of 1.5 ounces by weight (42.5 gm) per acre per year. The point being, a maximum of 42.5 gm of a relatively benign chemical (as compared to cadmium) kills the weeds!

We feel cadmium and other heavy metals are of terrible concern, especially when considering the unmonitored, undetected, and unknown amounts surely finding their ways into the human food chain. ■

A negative sign indicates "Less Than"



BECQUEREL LABORATORIES
6790 Kitimat Road., Unit 4
Mississauga, ON, Canada L5N 5L9

ANALYSIS REPORT

| ELEMENT | HEAVY METAL? | UNIT | GROWERS 10-20-10 | ROCK PHOSPHATE | MAXIMUM Tolerable Levels |
|------------|--------------|------|------------------|----------------|--------------------------|
| Antimony | yes | ppm | 0.09 | 1.17 | n/a |
| Arsenic | yes | ppm | 0.52 | 14.01 | 50ppm |
| Cadmium | yes | ppm | -0.5 | 49.89 | 0.5ppm |
| Chromium | yes | ppm | 5.5 | 174.5 | 1000ppm |
| Cobalt | yes | ppm | 1.5 | 1.11 | 10ppm |
| Molybdenum | yes | ppm | 9.3 | 13.86 | 10ppm |
| Nickel | yes | ppm | -2 | 30 | 50ppm |
| Selenium | yes | ppm | -0.7 | 4.9 | 2ppm |
| Uranium | yes | ppm | -0.02 | 64.23 | n/a |
| Zinc | yes | ppm | 6 | 430 | 500ppm |

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- Comments on Heavy Metal Limits Proposal
- Accidentally Opening the Fescue Bale was Good
- Soils, Their Use, Abuse and Restoration

Purchase GNS Early For \$\$\$ Discounts

FOR THE 2006-2007 SEASON, starting November 1, 2006, we will again be offering our seasonal Cash In Advance of Delivery (CIAD) discounts. The CIAD discounts for Growers Nutritional Solutions (GNS) orders paid in November will be 10%, December 8%, January 6%, February 4% and March 2%.

Orders paid in April through October will be at the list price.

The Growers CIAD discounts can pay three ways:

1. If the funds are available, **it pays to buy early** because the Growers CIAD discount is more than most banks' interest payments on savings.

2. If funds are not available and borrowing is necessary, **it pays to borrow and buy early** because the Growers CIAD discount is more than the lending institution's interest cost.

3. **Early orders help keep GNS prices down** because they allow deliveries to be scheduled more efficiently, and that requires less delivery equipment.

Call your Growers representative for an explanation of the early order discounts, quantity pricing, on farm storage tanks and delivery of Growers Nutritional Solutions. ■

Soils

Continued from page 2

processor's bankruptcy had had on the local farmers. This year was to become known as the "Year of the Export" when Europe had very low production. Prices were high that year and I was back to the point where I only owed \$13,000.00 plus a long term real estate mortgage on the farm.

1976 — 1977

By now I figured I had paid my dues with the educational costs of becoming a potato grower. I was ready to get down to the serious business of

trying to regain the yields and quality that had once made Maine the envy of the world as a producer of beautiful, bountiful crops of healthy, nutritious potatoes.

But something had occurred over the previous thirty years. Soils just weren't producing as they did in the early 1950s before the advent of double strength fertilizers. Why was this so, and what had happened?

I decided I could increase yields by working the soil several times (it was very hard), and by applying much larger amounts of fertilizer. This, along with a rotation every third or fourth year, should put me in "top shape." I proceeded to follow this approach and with good seed and reasonable care of the crop, I averaged, perhaps, a disappointing 140 barrels per acre. Costs were climbing and I needed 170 barrels per acre or more to "keep the wolves away from the door."

1977 — 1978

This was going to be the year I would really "hit it." To enable myself to rotate better, I rented more land which increased my acreage to 80 acres. I also built additional storage to hold the crop. I felt things were finally getting around to my way of thinking. I increased my dry fertilizer from 1400 pounds per acre to 2300 pounds per acre and truly expected to be "the talk of the town."

Little did I know that I soon would be, although in a different context than I would have chosen. On August 15, the seed inspectors were checking my crop for virus and ring rot when they found the thing that potato farmer fear most — BLIGHT!! It was blight that had caused the famine in Ireland in 1845, and it nearly caused one in the Niblett household in 1977. I had fertilized so heavily that the beautiful blue-green tops were sitting ducks for our wet, humid blight promoting conditions. I was busy building additional storage, and because I had not developed spray rows where the tractor and sprayer needed to travel, and because I hated to maul the tops using my ground sprayer, I hired a helicopter to spray my potatoes.

I waited a week for the helicopter, and, by the time it arrived, I had brown patches throughout my potatoes. I had problems. It got dry after that and I thought I might be OK, but that winter, I had nothing but a salvage deal. Back to square one and \$100,000.00 in the hole again.

It was during the winter of 1977-78 that I became very serious about looking for another way of farming or looking for a job. One or the other. I was young enough to do something else and could perhaps outlive the stigma of bankruptcy, especially if we left the area, but "it was such a nice place to live!" ■

The Growers Solution

Editor: Jennie Henry

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