



"The Soil Enjoys Our Company"

Newsletter 2012

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Dear friends of Earthsoils®,



Founder, Mike A. McCornack

I hope this newsletter finds all of you in excellent health and that you had a safe and successful harvest! This year of 2011 is quickly passing and it's already the middle of December. I have been preoccupied in getting our newsletter out this year. The main reason for the delay is we are currently under major expansion here at our Earthsoils® plant. We have the foundation poured and started building on the 12th of December. We will be adding more storage capacity for our trace minerals used in all of our fertility practices. We are also building another reactor that will have the capacity to accommodate semi-load formulations to efficiently serve the expanding demand for our products and program. This is all made possible through our dedication to develop products that allow you the abilities to grow



high-yielding, high-quality crops that withstand many of your crop production challenges. We all know the 2011 crop season's challenging experiences. Let's work together in the 2012 season to improve the performance of your Earthsoils® products and programs!

Lend me your ears!



Anything of value these days seems to cost you an "arm and a leg". Should producing ears as you see in the pictures require obscene amounts of agricultural inputs (fertilizer, seed technology fees, pesticides, etc)? In short, no it doesn't. Unfortunately, we're often lead to believe that ears the size of our forearms are only possible with 300# of nitrogen and the latest and greatest multi-stacked corn. Good stewardship leads to the results in the above picture. A careful blend of proper genetics and properly applied fertilizer program can lead to amazing results. The results, which many of you are now beginning to share

with us, are very exciting and gratifying. I want to emphasize that results do not happen overnight or spontaneously. It takes dedication to a given program balanced with a team effort approach. Earthsoils® is dedicated to formulating some incredible, useable nutrient formulations for your soil and crops. As always, thank you for your diligence in using our products for the purpose in which they have been designed! The results are achieved based on your timely application, placement, and suggested rates. Over the last 30 years of providing fertility products I am reminded of an important reflection: having the best product formulations is only half the story. There must be willingness by the producer to use them as they were designed. When this happens, watch out! You, too, can expect the best results for the season you have been given!

What are your crops trying to tell you?

Many of you currently using the full Earthsoils® program may recognize the above picture as an experience you had this past 2011 growing season. Those familiar with growing a healthy crop will see in the

foreground a crop that is standing tall with a healthy green glow “attitude” (right side). Directly across the road (left side) is a reflection of too many corn fields observed this summer. When I drove up and down the roads of some very productive soils throughout the country, I kept seeing dried up corn. What do you see? What are the reasons for the differences in crop growth stages (green and ready to go versus brown and rundown)? If you think I have doctored this picture up with computer wizardry, you have to understand, I know where the power button is and everything else requires a 2-minute “how-to” video! You have seen these kinds of crops this season all around you and, unfortunately, even in your own fields! What do you want in your farming fertility programs in order to achieve the healthy corn crop on the right? Again, you may want to consider Earthsoils® products and understand the role genetics play in plant vigor and overall health. Combine them properly to provide your farms with the results in the picture above.

It’s no secret that genetics have always played an important role in our farming operations. We have been breeding for specific crop traits for decades. The



approach has changed from conventional breeding (hybrids and existing genes within the plant) to transgenics (incorporating new genes into plants). As seed technologies change, the attitude by private industries has also changed. For many years I have observed a push towards new technologies as a means to “end all your problems” as they are marketed to provide you with expansive yield increases... McFarming at it’s best. It’s a convenient, all-in-one-bag approach that will solve all your problems. But is it? How is it working on your farms? Are you satisfied with the yield increases compared to the technology fees that you’re paying (>\$100-150/bag more for transgenic compared to conventional)? Going back to the previous picture, the healthy corn on the right is less than half the cost per bag of seed than the corn on the left. Would those cost savings provide an extra edge to your bottom line? Yes, I’m a big proponent of planting no-trait varieties. Why? It’s simple, really. The plants don’t lie. The picture above is witness number one! If you’re interested in how we achieved the healthy corn in the foreground, please read on!

How important is “research” to you when making decisions in your farming operation? It could be a major contributing factor in your decision making process... or not. For me, I take it with a grain of salt. As long as you understand who did the work and the motivation behind the data being collected, then I think it has a lot of value. Conversely, if a company does research to market their products, then it’s meaningless. At Earthsoils® we approach research with one simple question in mind. Will this benefit the producer (i.e., you)? I want to share with you how we at Earthsoils® continue to validate this simple question through rigorous product testing and evaluation. It is vital information to us as a fertility provider on your farming operations. First and

foremost, the work is performed by a third-party, which serves as an unbiased observer and data collector. No financial ties or gains are obtained through the testing of our products. The proof is in the pudding: a comprehensive observation of how our products perform in replicated field trials—nothing more, nothing less. We compare our products and programs so you can use them a source to achieve the goals you strive for on your farms year in and year out.

The purpose of our research plots is to develop the knowledge base for better understanding of the usage of our products. In other words, what rates of application of our products provide for the best return on your investment? We also want to gain knowledge on how best to use our products effectively. When you make a decision to incorporate Earthsoils®’ tool box of products, we would like you to have the confidence and reassurance that you have invested in the best fertility practices available. We take your goals seriously. I have used this approach for many years now. Make a product, test it, and promote it! An ongoing endeavor in all of this is understanding why it has performed so well year after year. The results you are enjoying now or will enjoy in the coming years are because we have chosen to use quality ingredients in all our formulations. This helps us provide you with desired results



like the cornfields and forearm-sized ears in the previous pictures. Research of our own products reveals our ability to be very effective in this ever-changing agricultural climate, not to mention the one that Mother Nature decides to throw our way!

Our research data are being analyzed through a statistical resources center at Iowa State under the guidance of Dr. Michael McNeill. He is also the independent observer, conductor and designer of our research trials. I find the integrity of this individual to be welcomed in this day and age and appreciate his devoted efforts to the producers he serves. Basically, if he sees that your products do not perform, then he will let you know. From here, the company can decide to improve performance of their products to meet the demands that agriculture places on results! I'm happy to say, that the results to date confirm what we've always known—Earthsoils® products do what they always do, which is perform! Some of you visited the research plot this early Fall. Participants from that field event viewed the plot “as is” with corn lying over in spots from 80 mph winds that came through. Yet, it provided a beautiful example of our program at work. Again, it is what it is, winds and all. Yes it is difficult to harvest corn that fell over, but at the same time very little was lost. The corn was picked up because the ears hung onto the stalk for dear life! In the nearby grove of trees west of the research plot, tops of young trees were chopped off by the wind. How does anything survive untouched with that kind of an impact? There were only two negative comments regarding the plot. It was a lot of hard work, and lots of time devoted to it! Thanks to Dr. Michael, Ricardo Cibils and the rest of his crew and Larry Harmdierks for their extensive efforts to put into place a research plot that allows real understandings to be evaluated.

Hopefully by mid-January some analytical data can be observed. Preliminary results have shown some interesting stuff to digest!

The research tested varying rates of 4-15-13 in seed furrow: 0 gallons per acre (untreated control), 3.25 gallons, 6.25 gallons, and 9.25 gallons per acre. Along with the starter was added 16 oz 3% ES-Boron and 24 oz Micro-Mix. In addition to the starter program was the N-CAL 19-0-02Ca placed 2 x 2 with the planter at rates from 0, 10, 20, 30, and 40 gallons per acre rates. These rates were used in multiple configurations of 4-15-13 starter and N-CAL repeated throughout the 29 acre plot so as to receive analytically accurate reflections of the effectiveness and best combinations of the products. The same variety of corn was used. The proven planting depth of 2.25 inches was used throughout the study. No supplemental irrigation was used. This plot experienced what everyone in the area experienced; dramatic downfall of moisture to absolutely nothing when the crop could have used it the most. The one thing that has caught everyone's attention, especially those on the Earthsoils® program, is just like the roadside picture and my previous comments. The corn stayed green even after frost had killed all around it. The ears continued to dry down to maturity with a green plant supporting it! Again, no-trait corn was the variety of choice, and with Earthsoils® products revealed very desirable aspects of crop production!

Where's the water?

It was difficult to predict the yield outcome earlier in the season for “Susie Soybean” crop this year. Why do I call her “Susie soybean”? My dear woman-readers of this newsletter, please divert your eyes for one moment. If you know what your wife or girlfriend is going to do the very next



moment, then you know why Susie Soybean is a challenging one to predict! But like most women, she's resilient. (I'm hoping that brings me a little redemption from my female readers!) Rain, where was it when we needed it? Oh yeah, it was all back at the very beginning of the season when we were overcome by downfalls and surplus of this all-important ingredient to bountiful yields. Then it just quit and early frost decided to relieve surplus bean yields from 10 to 15 bushels throughout much of the growing area. The comments I have received on the Earthsoils® bean program are very encouraging for the season we have experienced. Some general comments; "Our beans did not get SDS again this season." "Aphids did not seem to bother us like the neighbors." "Lots of pods, even without moisture, developed on top of the plant late in season. Just no rain and early frost stopped them." "Our beans had beautiful color all season." "I haven't been docked for protein content." Music to my ears... or in this case beans. Keep those comments coming! Some other exciting things I've observed deal with soybean protein content. One of our valued farmer's soybeans are no-trait, grown on our program of starter with the seed at planting time with inclusion of Boron and Micro-Mix. He then foliar applied with an ES-CAL, Boron, Mg, Mn and Fe the 12th trifoliolate stage. The end results on protein tests run independently at Midwest Labs were 42.1% protein! Please consider this information when choosing

traits verses no-trait and our fertility programs! The combination seems to be a value-added opportunity!

The subject of soybeans can be a sore spot in conversations with farmers. There are developing decisions to grow just corn from now on because "the yields just are not paying anymore." Let me ask you this, "what has changed within the past 10 to 15 years to discourage you from growing soybeans?" Is price alone the only reason? Was it that difficult to maintain yield consistency back then? How many disease problems do you have now in comparison? Where are your yields now verses then? Does it seem you have to have a war against insects that you never fought before now? I know the first hand frustration you may own right now. I feel the same way! Twelve years ago with no-trait variety grown utilizing our products produced 88 bushels per acre! Average yields were easy to obtain at 72 bushels! I have to compensate like crazy now in the "new technologies" driven environment to maintain any kind of profitable yields. In my opinion, these "new age" crops consume way more than they are returning on investments. Time to maybe consider looking at the old genetic characteristics that helped pay the mortgages and improved the productivity of your soil!





Protecting yield is a concern, but at what cost? I'd like to introduce you to someone who may visit your farming operation from time to time. His name is Justin Case, or some of you may know him as "just in case." Too often, we make pesticide, specifically insecticide applications based on too much perceived risk. In other words, we decide to pull the trigger based on a fear of losing yield without any information to backup that decision. In short, producers will often treat "just in case." In case of what? There are a lot of good data out there about when to treat soybeans for insect pests. Across much of the North Central US soybean aphid has been a serious threat to soybean yields for many years. However, deciding to treat those fields should be based on whole-plant counts. Some researchers are even making the scouting process simpler and I'm proud to say that my son is one of those researchers! I'm just venturing into the technology age and even have a "smartphone" to prove it. Of course, I still

use it primarily as a phone! In talking with my son over Thanksgiving, it became clearer to me that information, more importantly, access to it, is critical to the future of agriculture. Relying on "convenience" that's not backed or supported by volumes of information leads to poor decisions. My son, Dr. Brian McCornack, has created a smartphone application to help producers and scouts sample their fields for soybean aphid. More information about the application can be found at www.soypod.info. Basically, a user can create a list of fields and then sample those fields for aphids. The program tells you whether or not you need to treat the field or when it needs to be sampled...right from your phone. They're currently working on an Android app that will work in areas with limited connectivity. For now, if your phone has internet service on it, you can use the app. There are also paper versions of the "Speed Scouting" forms that can be downloaded for the paper users of the world. I'm a slow adopter, but I can see the value of this tool to soybean producers like you. Also, I see the need for such tools within the Earthsoils® organization and we're currently exploring these value-added products. Again, it goes back to information. Those that make informed decisions will be profitable and more effective stewards of this Earth.

Building the Foundation!

The concrete foundation is in place to start building up a facility to formulate products that are important to the building of your crops. No matter what varieties you choose or what you plan to grow, our mission is to help you create a strong base to work from—your root system. The contractor that has set our foundation in place knows his profession. I'm going to put a plug in here for John Trio Concrete out of

Mapleton, MN. He and his crew know what's needed to have a building that stands to perform for years to come. The expertise shown through the work and choice of materials is reflected in the workmanship now in place for the next crew to build upon.

Isn't this true for building a successful crop production in your soil? Don't you have to have a strong foundation in which to build upon? This is where Earthsoils® products provide the ability for crops of all genetic choices to build a root system (foundation) that enhances the growth structure needed to build everything on top of the soil. The above corn root system demonstrates the very foundation needed to create healthy crops. Let's start at the time of planting. There isn't a more critical time in your crop production than when you place your planter in the field to begin your season. Our research has established that 2.25 inches planting depth is optimal. Yields, health and overall vigor are the benefits observed following this recommendation. Every field is a different character, as I am a different character. We all have different types of attitudes, ability and capacities to perform. Your soils are not all created equal from one field to another. Check your depth all the time. It can make or break you!

The first 42 days of a crop's life is where we can be very beneficial to your fertility program. The 4-15-13 placed in furrow with the seed gives the seed the needed energy and nutrition to create the all-important foundation of your crop, the roots. Along with the starter we provide inclusions of micronutrients based in part on soil samples provided. Now that you have a banquet of nutrition where the seed starts its' season, the foundation is built and now your plants will support itself effectively.

I want to talk about ES-CAL 8-0-0-9Ca and the important role the product contributes to healthy crop production. Maybe the best way to describe its importance is the comments producers are sharing. There's a common theme—the product works! Lets' start with “the penetrometer went down 16 inches where ES-CAL was used verses 5 inches.” “The strips where it was applied last fall, the tractor picked up 300 rpm.” “I went 1.5 mph faster through the treated areas.” “My soil didn't chunk up this Fall.” “The field cultivator went through the soil like butter, the soil flowed around the shanks.” “We had higher yields where we foliar fed ES-CAL last year, is that possible?” “I watched my chisel plow leave the soil pretty smooth, my neighbors has basket balls behind his.” “Our crops stayed green, how does that work?” and “The beans seem to have stalled out. We foliar fed them with the ES-CAL and traces and in three days I couldn't believe the growth. It filled the rows and turned the crop around.” And those are just the ones off the top of my head! It is fun having results!

ES-CAL is formulated to feed the soil living microorganisms. They are the ones who have created the results you have just read. Without their presence in our soil environment in a healthy state nothing happens! Soil without them becomes a storage bin full of inactive minerals. Have you ever been constipated? You know how you feel! When the soil is constipated it does not feel good either and it will not perform or produce healthy crops! We understand simple basics that are overlooked. Fortify the soil with nutrition that it can easily utilize both by the crop and the living portion of your soils. ES-CAL is an excellent tool to have in your fertility toolbox. It can help you fix what needs to be fixed. Again, the expert here in changing the attitude of your soil is the biological system.

Earthsoils® formulations know how to help feed the crew that does the miracle work!

Do you know who is the greatest expert in balancing your soils? Do you know you have the top biochemist available in the industry? Did you know you are working with the top chemist in the world when it comes to your soil on your farm? Did you know you have the very best nutritionist available anywhere in the world that knows your soil and how to feed it? Now combine all of these experts into one. Do you think you would have a chance to be very successful on your crop production practices with all of these present at your disposal on a daily basis? What do you imagine it would cost you per acre to have this expert available to you? Lots, right? Nope! The expert I'm talking about is willing to work for the food that is offered! What? Work for food and provide free expertise! Wow! I will just bet you're thinking it is me who will do all of this for a free meal! Sorry to say, I'm not your guy. However, I do have an amazing fertility program that won't cost you an "arm and a leg" that can help you tap into the expertise described above.

In my opinion, true experts on your farm are the CROPS YOU PLANT!! You may be asking yourself—huh? It's possible that I have eliminated any doubt that I might be a kook! He has got to be out to lunch someplace! Nope, remember I asked at the very beginning to "lend me your ears". Now I will fill in the parts to make sense of it all. The crop you grow has all the attributes of the experts described previously. The type of genetics you choose to plant may have a huge bearing as to what kind of expert may be in your fields based on incoming soil sample reflections, protein content, starch content, mineral content and digestibility. The crops you grow function under the same grand design and all of the credit goes to the

Father who is the designer of these agricultural ecosystems that regenerate themselves continually. Three functions all living plants perform on a daily basis: they pull in carbon dioxide, plants absorb sunlight, they intake water and they create incredible sugar extractions, which are perfectly formulated to feed your soil the energy it needs. The byproduct of this exchange is oxygen. The "sugar" extraction has several unique qualities attached to it. This manufactured food supply by the plants exchanges of carbon dioxide, water and sunlight enzymes, amino acids, lactic acids, proteins, antibiotics, growth hormones, digestive aids and communication with the biological system to accumulate nutrients needed by the plant to create more of the same. The microorganisms present in the soil are opportunists. They take payment in the form of the complex sugars created by the plant. They in turn go out and do more of their designated jobs to receive again their payment of complex sugars. They create chemistry, biochemistry and viable nutrition for the plants root system. The expert plant now is the main contributor to the good of the whole. The food created is the source that feeds the crew of workers that allow the soil to have tithes, less tillage efforts, increase in both water and oxygen holding capacities, lower pentamer readings, which creates an environment that builds the foundations for continuing healthy crop production through their root structures. **Earthsoils® products are designed to feed two systems that work together: crops and soil. Provide good nutrition at the critical start of your plants life and it will continue to be an expert all season long to provide untold benefits to your soil and the crops you grow! We are not experts here at Earthsoils®, but we know how to feed the ones that are!**

Trophy Room!

We have a trophy room here at Earthsoils®. On display are not the heads or hind ends of any animals. It is a display of choices! There were choices that have been made that didn't turn out as planned. A display of choices that express the incredible plants that manifested in high yielding quality crops! Choices displayed as they were harvested from many different areas and different farming practices. The choices made by farmers like you are allowing Mother Nature to assist in producing abundance, even through the extreme environments we observed this 2011 growing-season. These choices have strengthened the confidence to know you can continue loving to do what you do best—farm! Farming, the most challenging profession on this planet is done on this place we call our home, Earth. All of us here

at Earthsoils® want to thank you again for the stewardship you provide the Earth and your continuing support of the products and programs offered your farming operations. We thank the Father of everything for the grand design He has placed in our hands for its care.

You will find the current pricing structure on the following page and the discounts in the form of “Premium Gallon Advantages” for all of the products at Earthsoils®. Thank you again for comments offered and your appreciation of quality products delivered to your farming operations.

Michael A. McCornack
Founder of Earthsoils®
The Soil Enjoys Our Company

