From:	Lesher, Mark
To:	Dudding, Chris
Subject:	FW: EPA article # 7011-0470-0002-2746-5408
Date:	Friday, February 22, 2013 3:49:01 PM
Attachments:	image004.png First response to EPA with disease explanation references.docx Bao cao Agrigro 2008 HT English Rice.doc Research for influence of Turf Formula relating the gro.htm 2011 California revised agrigro label.pdf 2012 foliar Blend label sate submission 5 55 275.pdf IgniteS2 label state submission5gal 55 275 2012.pdf turf formula California 2012.pdf

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Chris,

Please review this response from Mr. Smith and let's get together to discuss at your convenience.

Mark

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From: Stephen Smith [mailto:Stephen@agrigro.com]
Sent: Friday, February 22, 2013 3:25 PM
To: Lesher, Mark
Cc: Lesher, Mark
Subject: FW: EPA article # 7011-0470-0002-2746-5408

Dear Mark,

Let me first say thank you for the phone conversation that Tim and I shared with you last week. In the following letter along with the numerous attachments provided herein, we have attempted to provide further evidence of our products and the mode of action they operate by and to clarify any confusion or misunderstandings that may be associated with the same. We appreciate your patience and cooperation as we work to address the concerns your letter has raised and are striving to make the changes needed to insure we are properly registering and marketing these products to the consumer.

To begin, let me repeat our position that while some of the claims made regarding our products may be similar to 'pesticidal claims', our products "Do Not" contain pesticidal active ingredients. In the following letter, I will be sharing more specific information with

you regarding our products ingredients and the manufacturing processes used to produce the same. This information is proprietary to our company and considered completely confidential and is provided only to address the concerns your letter has raised against our company and the products we produce. All information contained herein is to be kept in strict confidence and is not for public release.

One of the challenges for companies like ours is the fact that there are no consistent labeling and registration requirements shared from State to State between each States Department of Agriculture. In other words, the wording and content that may be required on a Foliar Blend label that is approved by the State of Missouri is completely different from what the State of California will accept. For example, some states allow the listing of non-plant food ingredients to be included on the label while other states will not allow those ingredients to be listed but only want the ingredients that pertain to the guaranteed analysis on the label to be displayed. As has been stated previously, our products in question (Agri-Gro, Turf Formula, Foliar Blend, IgniteS2 and Bountiful Harvest Bio-Stimulant) are a combination of chelated macro- and micro-nutrients but they also contain additional ingredients to enhance the performance of the product that are not required to be listed on the label at the time of registration. While most all of our products claims are justified and explained by the nutritional response they trigger in both the soil and plant, these additional ingredients also contribute to and further support the claims we make.

All of the products in question above share many similarities in their formulations but they are each packaged and labeled to target a different target audience. Agri-Gro, Foliar Blend and IgniteS2 are sold to commercial growers while Turf Formula is sold specifically to turf grass producers and the Bountiful Harvest line to the home and garden market. In addition to their macro and micro-nutrient compositions, each of these products also contain natural organic acids for chelating agents, humic and fulvic acids, corn sugars and mycorrhizae fungi. There are numerous sources for each of these products throughout North America and most all of them make claims that are consistent with those made by our company. Furthermore, we have been advised by our suppliers of these ingredients that they are not a pesticide nor do they do not require an EPA registration and many of the suppliers we use are in fact, certified organic through the Organic Material Review Institute.

Here is a list of some of our suppliers and their websites for these products in particular:

Humic & Fulvic Acids: www.blackearth.com , www.humicgrowthsolutions.com

Mycorrhizae Fungi: www.mycorrhizae.com

While these ingredients play an important role in our technologies to enhance overall product performance and separate us from our competitors, the key mode of action behind our products are the macro and micro-nutrients they contain. It is here that we feel confusion exists in your interpretation of our products, what they are and how they work to provide the advertised claims. In our conversation last week, we acknowledged that some of the claims made on our website are similar in nature to “pesticidal claims” but our position is that claims such as “stronger stalks” or “larger root systems” for example, are also consistent with the plant growth response caused by the macro- and micro-nutrients contained in our products.

For example, Zinc is known to contribute to increasing root growth and development. One of the largest suppliers of chelated zinc in the nation is Nutra-Flo/ Nulex and their Zinc RGS (

root growth stimulator) product. http://www.nulex.com/nulex_root_growth_stimulator.html

In providing this, I am not trying to single Nulex out as their claims are consistent with most all other zinc suppliers in the country. I am simply stating this because most all zinc supplements sold in the US today make similar claims to support root growth and development because that is a proven and accepted fact. This response is not from a pesticidal effect but a nutritional response.

Zinc, derived from Zinc Sulfate is just one of the many ingredients used in our products, which also contain Boron, Manganese, Magnesium, Sulfer, Colbalt, Molybdenum, Potassium, and Nitrogen to name a few. Rather than offer a product that contains only one element, we combine numerous essential elements together to meet a broader spectrum of plant and soil nutritional requirements.

According to "Advances in Agronomy" volume 110 copyright 2011, chapter 4, The Role of Mineral Nutrition on Root Growth of Crop Plants " Mineral nutrition is an important factor influencing the growth of plant roots. In nutrient-deficient soils, root weight often increases in a quadratic manner with the addition of chemical fertilizers." This chapter, peer reviewed by Dr. Charles Allan Jones, Professor, Texas – A & M University and AgriLife Research and Extension Service, Dallas , Texas discusses the researched effects of nitrogen, phosphorous, potassium, calcium, magnesium, sulfur, and micronutrients on root growth of crop plants.

Pages 306 through 310 of this same chapter 4 will display research from Fageria (2002) showing that rice and corn roots were increased by weight and length as zinc rates were increased from 0 mg/kg to 5 mg/kg, 5 mg/kg to 10 mg/kg, 10 to 20, 20 to 40 etc. These pages also have charts and tables for the effects of boron, iron, and copper on root weight and length for corn, wheat, rice , dry beans, and soybeans. Each nutrient had an effect on root growth which varied by crop and deficiency level of each nutrient. For example, boron requirements of dicots are generally higher than monocots (Fageria 2000) Fageria reported that maximum root growth of upland rice can be achieved with the application of 0.4 mg B kg^{-1} soil, whereas maxiumum root growth of dry beans required 1.9 mg B kg^{-1} of soil. This chapter also discusses how that calcium and potassium deficiencies reduce root growth while high levels of magnesium does the same in reducing root mass. All of these specific plant responses to the root mass and length resulted from adding or lowering essential mineral nutrients in different degrees.

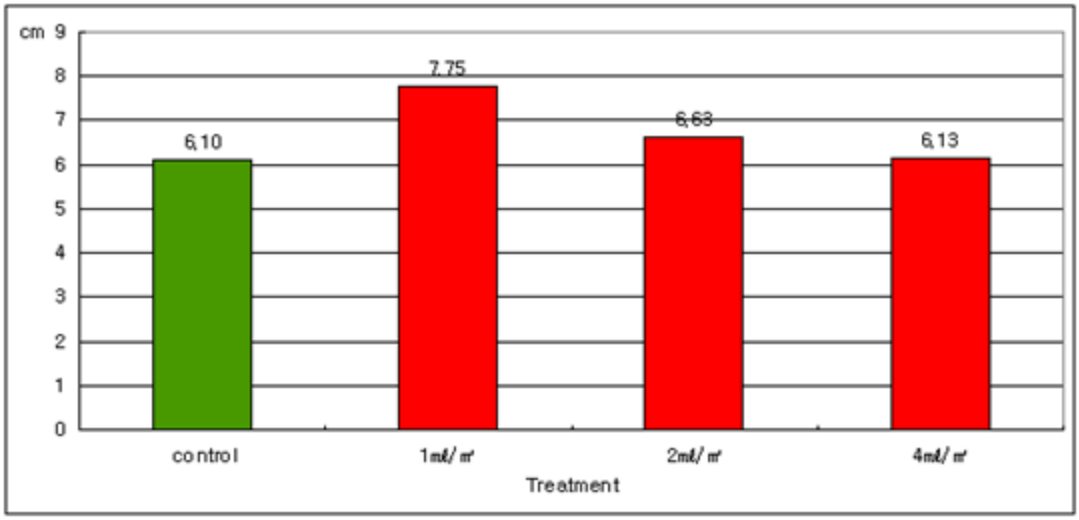
This one chapter is supported by research and references from more than 280 research papers and scientific journals from the US and Internationally.

In 2008, our Agri-Gro liquid concentrate, a .05% zinc and .05% boron liquid micronutrient fertilizer was placed in a trial by The College of Technical Engineering and Agriculture, Cuu long Delta Rice Research Institute. They were to test for rice growth and yield. Their summary (full report attached) included findings that stated," Applying Agri-Gro increased weight of dry root biomass up to 28% in plots with reduced fertilizer(20% N, 25% P, 25% K) This has been observed as well in any testing which root mass measurements were part of the study.

Turf Formula which has a similar analysis as Agri-Gro concentrate had similar findings in 2001 by Samsung Everland(a subsidiary of Samsung Conglomerate in Korea) at the Research Field for Turf and Environment Research Institute while testing for the influence of Turf Formula relating to the growth of turf from January through September of 2001.

2. Length of Root:

To the result of research on an effect reached to lengths of root of an each applied area at the time of three weeks after turf formula applied, area No. 2 which applied turf formula in 1 ml per square meter enhanced root development more than area No. 3 and 4 which applied with turf formula 2 ml per square meter and 4 ml per square meter respectively, furthermore, enhanced 27% more that non-applied area, area No. 1.



Foliar Blend, IgniteS^2, Agri-Gro concentrate, Turf Formula and Bountiful Harvest Bio-Stimulant all have at least zinc and boron as part of the guaranteed analysis. Therefore based upon the scientific evidence provided , each product should be expected to affect root growth and claims to that effect should be permissible from a nutritional perspective without being classified as only possible by a response from a registered growth regulator or pesticide.

With regard to improved germination claims. Manganese sulfate has been documented to increase germination rates better than Indole -3- acetic acid or colchicines since 1943. Reference the American Journal of Botany Vol 31, No. 6 (Jun, 1944) pp. 356 -367.

Published by the Botanical Society of America. Growth Stimulation by manganese sulfate, Indole-3-3Acetic Acid and Colchicine in Pollen Germination and Pollen Tube Growth. Tsung=Le Loo and Tsung-Chen Hwang. It is an accepted scientific fact that manganese contributes to improved germination of seeds, therefore why should our product be classified as a pesticide for making such a claim when we have manganese in our products and decades of science on our side.

While I have only touched on zinc, boron and manganese, It is not my intention to bore you and go through each individual element that is contained in our products to outline the role that each of those elements play in the plants development and life cycle. It is an accepted fact that most all plant life requires 16 essential elements to live and fulfill its life cycle and I'm confident you are aware of this. Each of these elements are necessary to obtain proper plant growth, development and health. If a breakdown of each individual micro-macro and trace element our products contain and its role on plant growth and development are what you are looking for, then we will be happy to provide a detailed report with collaborating evidence to support such. However, I doubt that is what you are seeking. We are simply trying to explain from a plant nutrition response, evidence for the claims we have made.

Mark, we have attached numerous reports, studies and product labels for your review. We have taken steps to modify the wording on our websites to insure we are not misrepresenting our products or misleading the consumer. We are not claiming that any of our products are to be used in place of any pesticide, fungicide, insecticide, herbicide, etc. nor are they to be confused with such inputs. We do feel the claims we make are supported by decades of accepted peer reviewed evidence of the role of each of these essential elements in plant growth and development. With that being said, we do not want to be at odds with your organization and want to be in compliance with your expectations for our business. I would ask that if after reviewing this letter and the documents attached, you still feel it is appropriate that we further modify some of the wording contained on our website, we are certainly open to such. We ask that you please provide specific examples of the wording in question and the changes we can make to state our claims properly. For example; if it is not permissible for us to say " increases root growth" , despite the evidence that our products contain zinc and mycorrhizae fungi which are known to 'increase root growth", then how can we reword such statements to be in compliance yet still state this growth response as all other suppliers of these inputs do? In addition to the disclaimer statement we have added to our website, if you have suggestions on how we can further separate our products to prevent any misunderstanding of our products intended use, please tell us specifically what we can do and we will do our utmost to comply.

In closing, I trust that we have provided evidence and reasoning for the claims in question as well as supplied justification for such from a nutritional basis. If needed, we can supply much more of the same on each of the individual elements our products contain. Common sense tells me these claims are permissible from both a nutrional response which is what we are, and from a pesticidal response which is what we are not. It all depends on what is the mode of action behind the response. In our case it is nutritional. As I stated in our first response, we are absolutely not a pesticide, we use no ingredients that are classified as pesticidal ingredients nor do we want to be viewed as or replace the role of pesticides. We are starting to feel like a square peg that is being forced to fit in a round hole. Nevertheless, we are sincere in wanting to address this concern, meet your expectations and put this matter behind us. I trust that this letter aids in accomplishing such.

Have a good weekend and we look forward to your reply.

Stephen Smith
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