Application: 4203

Nano-Yield Introduces NanoCote

Page: General Information

Provide information about the company to be considered for the award. If you will be nominating an individual, specify the nominee's employer.

Name of Organization/Company

Nano-Yield

Additional Contacts

I do not wish to list additional contacts

Page: Entry Information

Entry Title

Nano-Yield Introduces NanoCote

Category

C05. New Product of the Year - Agricultural Technology

New Product Submission Format

Written Answers

a. Briefly describe the organization that developed the nominated new product: its history and past performance (up to 200 words). Required

Nano-Yield/Aqua-Yield was the first company in history to introduce nanotechnology to Agriculture. The company was formed in January of 2014.

Nanoliquid® Technology is designed to deliver more of the crop inputs needed for maximum yield. Nanotechnology makes it possible for big impacts to happen on a small scale due to the unique physical properties of nanoparticles.

Nano-Yield nanoliquid technology works as a delivery system for crop inputs. While most nutrients enter the plant cell wall through diffusion or active transport, the nanoliquid particle will load the molecules and then bulk transport them through the wall by endocytosis. Nanoliquid products are highly compatible with fertilizers, biostimulants, and pesticide products. The increased product performance provided by nanoliquid products results in higher yields and healthier crops.

Each nanoparticle carries thousands of fertilizer ions or active ingredient molecules rapidly into the plant cell by a plant mechanism called endocytosis. While conventional products are only absorbed through diffusion and active transport, only nanoparticles are taken up via endocytosis.

Nano-Yield nanoparticles are designed to be loaded with any common fertilizer ion or molecule. The particles carry these materials into the plant and release them once inside. And now, we introduce NanoCote for granular fertilizers!

b. Specify the date on which this nominated product was introduced to the marketplace. Outline the nominated product's features, functions, benefits and novelty (up to 250 words). Required

In September, 2023, Nano-Yield introduced the first-ever nano-based application/coating for granular fertilizers; NanoCote™. Nano-Yield/Aqua-Yield was the first company ever to bring nanotechnology to agriculture and we did that in a liquid form. But only being in liquid meant that more than half of all crops, which use granular fertilizers, not liquid, could take advantage of this nano-delivery opportunity. NanoCote, invented by Nano-Yield, is a revolutionary coating, placed on granular fertilizers before their applications to crops. By doing this, fertilizers now "hold" their nutrients longer and those nutrients are protected in this technologically-enhanced coating/delivery system. This advancement is already changing the way fertilizers are applied and farmers, even within a short 6-8 months of introduction, are seeing up to a 15-1 return on their investments using NanoCote. We are trying to drive the yield increase, first and foremost, but we quickly discovered we were actually able to compete just as well, if not better, than industry-leading technology.

Our data shows, that on leaching studies we're able to keep it in the root zone better. NanoCote is keeping more ions and molecules available to plant for better delivery. We are hitting our targets better, helping the farmers with better and longer-sustained nutrient deliver and, NanoCote is stopping the environmental losses which have a direct effect on the yield efficacy.

c. Explain why the nominated product is unique or significant. If possible compare the product to competitors' offerings and/or to the organization's other or past products (up to 250 words). Required

Adding NanoCote Core enhances and improves the overall performance for the granular fertilizer industry. Through formulating and conducting many lab and field trials, we know that NanoCote, added to granular fertilizers and eventually to seed coats, allows farmers to best utilize the incredible diversity and positive properties of nanotechnology and enhance all aspects of their growing experience. The innovation process of this new technology was to form the same proprietary delivery mechanism for dry fertilizer application that the company has been using in liquid applications for the past ten years. Everything included in NanoCote Core serves a purpose and acts as a driver for the entire formulation. Another major component of Nano-Yield NanoCote Core is its benefit to the farmer/blender in the factory, and the effect on soils and the overall environment. This part of the process was a major emphasis in both the chemistry behind the innovation of the product and numerous field trials.
NanoCote reduces the dust and actually cleans out blending and other machinery farmers are using in the factory. In blending facilities, there are so many moving parts; the carbon steel, the bearings and everything that goes with the loading equipment . That dust is so fine it creeps into everything. NanoCote contains that dust into a non-flowable nanoparticule that covers the gross volume of the dry fertilizer. And, NanoCote iis biodegradable. A lot of other fertilizers for granular coatings are plastic - NanoCote is not. NanoCote is most likely the first to make granular applications biodegradable.

d. Reference any attachments of supporting materials throughout this nomination and how they provide evidence of the claims you have made in this nomination (up to 250 words). Optional

The impetus for the creation of NanoCote™ was to bring the benefits of nanotechnology that were observed in liquid fertility to the world of dry fertility. It is a well known fact that dry fertilizer used in large scale agriculture is applied in large quantities and only a fraction of the inputs ever make to benefit the targeted plant. It was our goal to increase efficiency, reduce environmental losses and boost yield by delivering more of the nutrient to the crop.

NanoCote™ has undergone numerous third party, and university studies demonstrating how it can decrease environmental losses. Penn State University conducted a urea volatility trial (Schlossberg et al) and the results showed evidence of decreasing ammonia off gassing by up to 50%. This is great for growers trying to maximize their investment and reduce the greenhouse gas.

A large struggle for growers worldwide is the issue of irrigation water, or lack thereof. A long history of droughts have plagued global agriculture since its inception. The unique formulation of NanoCote™ was designed to increase water efficiency when those dry conditions can be detrimental to crop yields. Data from a third party trial conducted by Intent™ showed that a corn crop in Missouri that was devastated by a drought, had a 15% yield increase with 25% less phosphorus, when NanoCote™ was used.

NanoCote™ continues to demonstrate how it can positively increase crop yield, reduce environmental losses in a regenerative approach to agriculture.

Webpage Link

www.nano-yield.com (http://www.nano-yield.com)

Would you like to add an additional webpage link?

Yes

Webpage Link 2

aquayield.com (http://aquayield.com)

Would you like to add an additional webpage link?

Yes

Webpage Link 3

https://www.croplife.com/industry-news/nano-yield-introduces-nanocote-for-granular-fertilizers/?amp (https://www.croplife.com/industry-news/nano-yield-introduces-nanocote-for-granular-fertilizers/?amp)

Would you like to add an additional webpage link?

Yes

Web Page Link 4

https://www.utahbusiness.com/nano-yield-makes-fertilizing-crops-easier-than-ever-agriculture-technology/ (https://www.utahbusiness.com/nano-yield-makes-fertilizing-crops-easier-than-ever-agriculture-technology/)

Would you like to add an additional webpage link?

Yes

Web Page Link 5

https://www.youtube.com/watch?v=h30ekD-0jaE&t=7s (https://www.youtube.com/watch?v=h30ekD-0jaE&t=7s)

Would you like to add an additional webpage link?

Supporting Document

Download File (https://stevies-tech.secure-platform.com/file/66494/eyJ0eXAiOiJKV1QiLCJhbGciOiJIUzI1NiJ9.eyJtZWRpYUlkIjo2NjQ5NCwiYWxsb3dOb3RTaWduZWRVcmwiOiJGYWxzZSIsImlnbm9
LSq6dd4?nanocote%201.pdf)

Would you like to add an additional supporting document?

Yes

Supporting Document 2

Download File (https://stevies-tech.secure-platform.com/file/66495/eyJ0eXAiOiJKV1QiLCJhbGciOiJIUzI1NiJ9.eyJtZWRpYUlkIjo2NjQ5NSwiYWxsb3dOb3RTaWduZWRVcmwiOiJGYWxzZSIsImlnbm9
-d1yF3e3FIWVeznxVHe6YrTKBIEfLy4?nanocote%202.pdf)

Would you like to add an additional supporting document?

Yes

Supporting Document 3

Download File (https://stevies-tech.secure-platform.com/file/66496/eyJ0eXAiOiJKV1QiLCJhbGciOiJIUzI1NiJ9.eyJtZWRpYUlkIjo2NjQ5NiwiYWxsb3dOb3RTaWduZWRVcmwiOiJGYWxzZSIsImlnbm9y
nanocote%203.pdf)

Would you like to add an additional supporting document?

Yes

Supporting Document 4

Download File (https://stevies-tech.secure-platform.com/file/66497/eyJ0eXAiOiJKV1QiLCJhbGciOiJIUzI1NiJ9.eyJtZWRpYUlkIjo2NjQ5NywiYWxsb3dOb3RTaWduZWRVcmwiOiJGYWxzZSIsImlnbm9y
nanocote%204.pdf)

Would you like to add an additional supporting document?

Yes

Supporting Document 5

Download File (https://stevies-tech.secure-platform.com/file/66498/eyJ0eXAiOiJKV1QiLCJhbGciOiJIUzI1NiJ9.eyJtZWRpYUlkIjo2NjQ5OCwiYWxsb3dOb3RTaWduZWRVcmwiOiJGYWxzZSIsImlnbm9
AekP23ZYzSEH7nW_EguoH3zIL63irNMYteRiO9Xk?nanocote%205.pdf)

Would you like to add an additional supporting document?

Yes

Supporting Document 6

Download File (https://stevies-tech.secure-platform.com/file/66499/eyJ0eXAiOiJKV1QiLCJhbGciOiJIUzI1NiJ9.eyJtZWRpYUlkIjo2NjQ5OSwiYWxsb3dOb3RTaWduZWRVcmwiOiJGYWxzZSIsImlnbm9
BzJCG31pTQrKIKo?nanocote%206.pdf)

Would you like to add an additional supporting document?

Yes

Supporting Document 7

Download File (https://stevies-tech.secure-platform.com/file/66500/eyJ0eXAiOiJKV1QiLCJhbGciOiJIUzI1NiJ9.eyJtZWRpYUlkIjo2NjUwMCwiYWxsb3dOb3RTaWduZWRVcmwiOiJGYWxzZSIsImlnbm9
nanocote%207.pdf)

Would you like to add an additional supporting document?

Yes

Supporting Document 8

Download File (https://stevies-tech.secure-platform.com/file/66501/eyJ0eXAiOiJKV1QiLCJhbGciOiJIUzI1NiJ9.eyJtZWRpYUlkIjo2NjUwMSwiYWxsb3dOb3RTaWduZWRVcmwiOiJGYWxzZSIsImlnbm9
nanocote%208.pdf)

Would you like to add an additional supporting document?

Yes

Supporting Document 9

Download File (https://stevies-tech.secure-platform.com/file/66502/eyJ0eXAiOiJKV1QiLCJhbGciOiJIUzI1NiJ9.eyJtZWRpYUlkIjo2NjUwMiwiYWxsb3dOb3RTaWduZWRVcmwiOiJGYWxzZSIsImlnbm9y
nanocote%209.pdf)

Would you like to add an additional supporting document?

Yes

Supporting Document 10

Download File (https://stevies-tech.secure-platform.com/file/66503/eyJ0eXAiOiJKV1QiLCJhbGciOiJIUzI1NiJ9.eyJtZWRpYUlkIjo2NjUwMywiYWxsb3dOb3RTaWduZWRVcmwiOiJGYWxzZSIsImlnbm9
gMr7HsfJ3GOtv-tjmjQs?nanocote%2010.pdf)

By your submission of this entry to The Stevie Awards, you verify that you have read and agreed to abide by the regulations, terms and conditions of the competition (https://www.asia.stevieawards.com/rules-and-terms-conditions-competition).

Terms and Conditions

I Agree