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## **Marrone Bio Innovations, Inc. Receives Positive Results From Brazil Trials**

### **Trial Shows Biological Pesticides Match or Outperform Chemical Crop Treatments in the Largest Pesticides Market in the World**

DAVIS, Calif., Oct. 11, 2017 (GLOBE NEWSWIRE) -- Marrone Bio Innovations, Inc. (NASDAQ:MBII), (MBI), a leading provider of bio-based pest management and plant health products for agriculture, turf, water treatment and ornamental markets, has released new results of field trials in Brazil that show its products matching or outperforming chemical-based pesticides in key crops for pesticide use.

"Our biological pesticides yielded excellent results in recent field trials in Brazil. This is an important target market for our products due to bioinsecticides' high market share and the urgent need for effective pest control solutions," said Pam Marrone, MBI's Chief Executive Officer. "I anticipate a clear path to completion of the registration process in Brazil, as the country's teams of biopesticide regulators review the positive trial results. We look forward to expanding into Brazil and helping growers tackle a wide range of unmet challenges."

The crop protection market in Brazil is the largest in the world at \$9.4 billion USD in 2016, with projected sales in 2021 of US\$10.1 billion<sup>1</sup>. Key crops are soybeans (50%), vines, fruits and vegetables (11%), maize (9%), sugarcane (9%), cotton (7%) and cereals (3%). Fungicides comprise approximately (30%), insecticides (36%) and herbicides (31%).

The biological pesticide market is small (US\$200 million) relative to the chemical market, but it is growing more quickly than chemicals<sup>2</sup>. The Brazilian Association of Biological Control Companies forecasts that biopesticides will grow 15-20% annually over the next 10 years. One of the reasons for the strong growth is that the process to register biopesticides is generally faster than traditional chemical products. The authorities have established dedicated teams to evaluate biopesticides, using requirements that differ from traditional analyses<sup>3</sup>.

Bioinsecticides have the largest market value and account for half of the market share in 2016. It is also the fastest growing segment<sup>4</sup>. Further, suspension of 63 synthetic fungicide products used for controlling soybean rust by the Brazilian Ministry of Agriculture in January 2017 is expected to increase the demand for biofungicide products in the country, as well as product prices<sup>4</sup>. The Brazilian anti-soybean rust consortium, Consorcio Antiferrugem, has called for the approval of tank mix fungicides to control the major soybean disease in the country<sup>5</sup>. MBI intends to test its biofungicide products against this disease in the future.

Brazil is a key target for MBI's growth, and efficacy trials are required as part of the registration process. Therefore, MBI has conducted many trials in Brazil over the last three years.

The following is a summary of key data:

#### **Cotton**

Five trials with Regalia<sup>®</sup> on cotton, applied twice increased yield an average of 6.7%. For all rate and timing combinations, Regalia showed an impressive 71%-win rate over the untreated cotton.

Three trials with Grandevo<sup>®</sup> on cotton for control of the bollworm *Helicoverpa armigera*. Grandevo performed equally well to the biological standard *Bacillus thuringiensis* and the chemical standard, zeta-cypermethrin in two of three locations.

#### **Bananas**

Three trials with Majestene<sup>®</sup> on bananas for control of burrowing nematodes: Majestene reduced nematode populations the same as carbofuran. All rates, when taken together, significantly increased yield (maximum was 5%) over the untreated bananas and this increase was equal to the chemical standard, carbofuran (no longer allowed in the U.S. due to its mammalian and bird toxicity). At the highest rate, Majestene was statistically better than carbofuran for yield.

## **Soybeans**

Six trials with Majestene on soybeans for control of lesion nematodes - analyzed across all sites and for all rates, Majestene was statistically better for yield (+12-17% at three rates and +30% at the highest rate) than the untreated beans. At three rates, Majestene was equal to the commercial standard Avicta<sup>®</sup> for yield, and at the highest Majestene rate, was statistically better (13% higher) than Avicta for yield. At three rates, Majestene was equal to Avicta for reducing nematode counts in soil.

Three trials with Grandevo on soybean for control of the caterpillar *Helicoverpa armigera*. Grandevo performed equally well to the biological standard *Bacillus thuringiensis* and the chemical standard, zeta-cypermethrin in all three locations.

## **Citrus (Orange)**

Two trials with Grandevo on citrus for Asian citrus psyllid (ACP). Grandevo at two rates reduced ACP nymphs as well as the commercial standard, imidacloprid. Venerate<sup>®</sup> did not reduce nymphs as well as Grandevo in citrus trials, but the citrus yields after treatment with Venerate were the same as the chemical treatment, imidacloprid (~12.6% higher than untreated). In U.S.A. and Mexico trials, both Grandevo and Venerate have performed well against ACP and are particularly suited for resistance management programs in rotations with chemical pesticides.

## **Strawberries**

In one trial, Venerate controlled spider mites as well as the chemical standard and reduced whiteflies by 80%.

Sources: <sup>1</sup>Phillips McDougall, AgriService, <sup>2</sup>ABC BIO (Brazil Bio Control Association), <sup>3</sup>The Brazilian Association of Biological Control Companies, <sup>4</sup>Mordor Intelligence, 2016-2021 Brazil Biopesticides market report, <sup>5</sup>Agrow, Agribusiness Intelligence

## **About Marrone Bio Innovations**

### ***Smart. Natural. Solutions.***

Marrone Bio Innovations, Inc. (NASDAQ:MBII) strives to lead the movement to a more sustainable world through the discovery, development and promotion of biological products for pest management and plant health. MBI's effective and environmentally responsible pest management solutions help customers operate more sustainably while uniquely improving plant health and increasing crop yields. MBI currently has six commercially available products (Regalia<sup>®</sup>, Grandevo<sup>®</sup>, Venerate<sup>®</sup>, Majestene<sup>®</sup>, Haven<sup>™</sup> and Zequanox<sup>®</sup>) as well as eight product candidates in various stages of the company's rapid development pipeline. MBI also distributes Bio-tam 2.0<sup>®</sup> for Isagro USA in the western U.S. and Jet-Ag<sup>®</sup> for Jet Harvest in most regions of the U.S.

Marrone Bio Innovations is dedicated to pioneering smart biopesticide solutions that support a better tomorrow for both farmers and consumers around the globe. For more information, please visit [www.marronebio.com](http://www.marronebio.com).

## **Marrone Bio Innovations Forward Looking Statements**

This press release contains forward-looking statements that involve substantial risks and uncertainties. All statements, other than statements of historical facts, included in this press release regarding strategy, future operations and plans, including assumptions underlying such statements, are forward-looking statements, and should not be relied upon as representing MBI's views as of any subsequent date. Examples of such statements include statements regarding completion of the registration process in Brazil, sales of the MBI's products in Brazil and other markets, market projections, including anticipated growth in the crop protection and biopesticide markets, the potential benefits of the MBI's products, and MBI's plans for testing products for additional uses. Such forward-looking statements are based on information available to the Company as of the date of this release and involve a number of risks and uncertainties, some beyond the Company's control, that could cause actual results to differ materially from those anticipated by these forward-looking statements, including consumer, regulatory and other factors affecting demand for the MBI's products, any difficulty in marketing MBI's products in global markets, competition in the market for pest management products, lack of understanding of bio-based pest management products by customers and growers, and adverse decisions by regulatory agencies and other relevant third parties. Additional information that could lead to material changes in MBI's performance is contained in its filings with the SEC. MBI is under no obligation to, and expressly disclaims any responsibility to, update or alter forward-looking statements contained in this release, whether as a result of new information, future events or otherwise.

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