

Amoéba: a record year for the number and performance of field trials

Chassieu (France), October 20, 2022 – 5.45 pm - AMOÉBA (FR0011051598 - ALMIB), producer of a biological biocide capable of eliminating the risk in water and human wounds, and of a biocontrol product for plant protection, still in the testing phase, announces the publication of its 2022 field trial results.

With more than 120 field trials completed or underway in Europe, the United States, Brazil, Costa Rica and Asia, the winter 2021/summer 2022 field trial campaign is the largest ever undertaken by Amoéba.

The main objectives of these trials conducted by independent external service providers in small plots under GEP (Good Experimentation Practices) are to :

- Generate efficacy data for future marketing authorization applications in Europe, Brazil and California
- Evaluate the company's formulations on new targets, in particular diseases of tropical crops, apple and certain vegetable crops.
- Conduct positioning trials in combination or in programs with other fungicides (in particular on vines, potatoes, wheat, vegetables and soybeans), foreshadowing experiments closer to practical use.

Two main formulations were tested depending on the crops: a suspension concentrate (SC) and an oil dispersion (OD).

1 - Crops / diseases already experimented in previous years

Vine / Wheat / Potato

Recent trials allowed to confirm the chosen rates, in liters per hectare (L/ha), for future marketing authorization applications and to accentuate the efforts to practically apply them (in associations or programs):

- Vine (mildew and powdery mildew): 2.5 L/ha alone - 1.25 L/ha in combination with copper
- Potato (late blight): 1.25 L/ha
- Wheat (depending on diseases): 1.25 to 2.5 L/ha

Vegetable crops

A major campaign of 27 trials was conducted in 2022 in Southern Europe and California, and is still ongoing in Spain and Italy to test the efficacy of our product on vegetable crops.

Against downy and powdery mildews on field crops (cucurbits, lettuce) the product confirmed the good results of previous years. Almost systematically, the performance was better compared to other biocontrol products.

On tomatoes, grown in open field and intended for processing, all trials this year, conducted in the heart of the main growing area in Italy, confirmed the great potential of the product. In fact, our solution was as efficient as copper against mildew, especially for the protection of fruits, in a situation of medium-high infestation. It is thus possible, in a program including 6 treatments, to replace 4 copper treatments by our solution without impacting the level of protection (up to 80% efficiency on leaves and 100% on fruits).

2 - New targets / Temperate crops

Vegetable crops under greenhouse

Against powdery mildew in greenhouse crops (tomato and cucumber), very good results have been measured for this first year of experimentation in Greece and Italy. Sometimes less efficient than the reference sulfur, the product appears systematically more efficient than the reference biocontrol products (70% efficiency on cucumber for example, against only 24% for the reference).

Apple tree

This year is also marked by the start of trials on a new target category: fruits, in particular apples. Massively treated (up to 20 treatments per year for European producers) and exposed to chemical residues, apples represent an important world market, continuously in search of biofungicides.

Two trials on scab conducted in France and Italy on lightly contaminated apple trees have demonstrated strong activity of the product (particularly on fruit), similar to copper at its highest tested dose.

This result will be confirmed in situations of more severe infestation, in this important market lacking any natural solutions to date.

Turf

The first trial against Fusarium on turf during the winter of 2021/2022 on a golf course in Italy showed 50-60% efficacy with both formulations. This performance is statistically equivalent to the one of the reference chemical fungicide.

3 - New targets / Tropical crops

The product has been tested in all major tropical markets.

Soybean

A campaign of about ten trials was conducted in Brazil in different producing states (Mato Grosso, Mato Grosso do Sul, Goias, Parana, Rio Grande do Sul). These trials targeted the main disease, Asian soybean rust, but also a series of so-called "end-of-cycle" diseases, notably target spot, septoria, cercosporiosis and powdery mildew.

Under these conditions, good efficacy was observed with both tested formulations, and this at relatively low dose rates. Even in the most contaminated trials, the product efficacy was frequently similar to that of the widely used reference fungicide (chlorothalonil).

Furthermore, when used in a mixture, the product complements well the performance of a chemical fungicide, making it a very useful combination to limit the appearance of resistant rust strains, responsible for the efficacy decrease of the latest chemical fungicides.

In one of the most infested trials, the best treatment was this combination of chemical fungicide and Amoeba suspension concentrate, statistically superior to all references and other combinations (66% efficacy against 40-45% for the other programs). A high versatility against all end-of-cycle diseases was also observed.

Our product therefore confirms its effectiveness against soybean rust, as well as its potential to be integrated into field crop treatment programs.

Banana

For the first year, three trials were conducted (Indonesia, Brazil, trial in progress in Costa Rica) against the main banana disease: black Sigatoka. In the wettest growing areas, bananas are treated all year round, once a week (52 applications per year).

The results of the first two completed trials show that the products (especially with the OD oil dispersion formulation) have the same performance as chlorothalonil (45% efficacy in one, 95% in the other), one of the most widely used fungicides on this crop. This old fungicide, banned in Europe in 2019, will probably be banned in the medium term in many banana-producing countries.

Furthermore, an in-vitro test carried out by a specialized laboratory in Costa Rica has just demonstrated that amoeba formulations inhibit the germination of *Mycosphaerella fijiensis* spores, which is a key advantage on this crop where spores are permanently present in the environment.

This result confirms this mode of action, which has already been observed on many pathogens (notably downy mildew on grapes and soybean rust).

There is therefore great potential in this major crop where all the operators are looking for non-chemical, alternative or complementary solutions to preserve the environment, reduce residues on fruit and create associations with the best chemical fungicides in order to limit the risk of emerging resistant strains.

The number of trials will now be increased, in order to specify the practical rate and to start working on the integration of the product in the annual treatment programs.

4 - Conclusions

Four years of field experimentation, with more than 300 trials conducted by Amoéba in many countries, has contributed to the acquisition of a solid knowledge on *Willaertia magna* C2c Maky lysate-based products.

The broad spectrum, the ability to control many diseases on specialized crops as well as on field crops, in temperate climate and also in tropical areas, the higher level of performance compared to biofungicides available on the market, allow to consider a positioning of Amoeba's products as an alternative or as a complement to chemical fungicides, and in particular as a direct substitute of the two most important contact fungicides used in the world, mancozeb and chlorothalonil (both already banned in Europe), on a certain number of crops.

About AMOÉBA:

Founded in 2010, Amoéba is a French company, based in Chassieu (Lyon, France), specialised in the treatment of microbiological risk in natural resources. Over the last ten years, Amoéba has developed a triple scientific, industrial and commercial expertise around the amoeba *Willaertia magna* C2c Maky. This biological solution is an alternative to the chemical products widely used today. Amoéba is currently focusing on the biocontrol market for plant protection, estimated at €1.6 billion ⁽¹⁾, as well as on the US market for industrial water treatment in closed circuits. In the long term, the Company plans to develop new applications such as the treatment of chronic wounds, valued at €751 million ⁽²⁾ in the United States. The commercialization of crop protection, biocides and healthcare products is subject to local regulatory approvals. The company is currently testing the biocontrol application for plant protection and does not market any products. Amoéba is listed on Euronext Growth. The Company is a member of the BPI Excellence network and is eligible for the PEA-PME scheme. More information on www.amoeba-nature.com.

⁽¹⁾ *marketsandmarkets.com, "Wound Care Market by Product, Wound Type, End User - Global Forecast to 2021," 2016.*

⁽²⁾ *Données Amoéba*

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Markets Authority (Autorité des Marchés Financiers) on April 12, 2022 under number D22-0280 and available on the AMOÉBA website (www.amoeba-nature.com). The forward-looking statements contained in this press release are also subject to risks not yet known to AMOÉBA or not currently considered material by AMOÉBA. The occurrence of all or part of such risks could cause actual results, financial conditions, performance or achievements of AMOÉBA to be materially different from such forward-looking statements.