



## The greentech company AFYREN and biocontrol start-up CEARITIS announce innovative partnership for alternative crop-protection system for orchards

- **AFYREN and CEARITIS join forces to offer tree crop growers an alternative protection solution that respects biodiversity**
- **The biomimetic "Push&Pull" biocontrol device developed by CEARITIS creates a natural barrier against crop-destroying insects**
- **AFYREN enters organic agriculture market with agreement to supply its biobased organic acids**
- **CEARITIS plans industrial production of its sustainable biocontrol solution for tree crops, manufactured with AFYREN's biobased acids, beginning this year**

**Clermont-Ferrand/Lyon, February 7, 2023, 7:45 am CET — AFYREN**, a greentech company that offers manufacturers bio-based, low-carbon ingredients produced using unique fermentation technology based on a completely circular model, and **CEARITIS**, a sustainable agriculture start-up, have signed a partnership to support the development of an innovative biocontrol device to protect orchards.

The two companies, which share the same values and commitment to environmental sustainability, have joined forces to offer tree-crop growers an innovative and biodiversity-friendly alternative to insecticides.

### **A meaningful partnership**

The partnership between AFYREN and CEARITIS will accelerate the marketing of a sustainable and efficient pest control device for farmers. The collaboration secures for CEARITIS a supply of bio-based and low-carbon raw materials and allows AFYREN to enter a market that aligns with its mission and its biorefinery model centered on agriculture.

*"The "Push&Pull" biocontrol solution developed by CEARITIS in partnership with AFYREN provides an effective alternative to the insecticides usually used on orchards. It combines technological, environmental, and societal performance by allowing orchardists to secure their crops while anticipating the regulatory changes that will probably limit or prohibit the use of chemical plant protection products in the future,"* said **Marion Canale, and Solena Canale Parola, the co-founders of CEARITIS.**

## **The "Push&Pull" biocontrol device developed by CEARITIS: an original and effective solution designed for orchardists**

Orchardists currently have only two ways to protect their crops from insect pests: chemical pesticides or biological alternatives that are more costly and time consuming to implement. CEARITIS was created in 2020 to respond to the environmental and economic challenges currently facing the orchard sector. CEARITIS is working on the development of its biocontrol solution to protect several tree crops: olives, cherries, red fruits, almonds, and citrus fruit.

The CEARITIS "Push&Pull" biocontrol system uses a repellent solution which, when sprayed on the orchard, acts as a natural barrier, and prevents pests from coming in. The system combines this with an element outside the orchard that contains a solution that attracts fruit flies and deflects them into an innovative trap. Only the targeted flies are captured, so the system does not impact biodiversity.

The solution is based on natural molecules, is non-toxic for orchardists, usable in organic agriculture and adapted to the profitability objectives of tree-crop farmers.

The technology is currently being field tested for the third consecutive year, to validate proofs of concept (POC) on olive and cherry trees, and the initial results are very encouraging. The approval process has been launched and a marketing authorization is expected soon. The first commercial production is planned for 2023.

## **The market potential of orchard protection**

Each year, 400 tree varieties are threatened by fruit flies, the main pests that destroy tree crops, causing up to \$10 billion worth of damage annually worldwide. France alone has 70,000 hectares of orchard land to protect.

The market for plant protection solutions for the tree-crop industry alone represents \$1 billion in Europe and as much as \$11 billion worldwide.

Biocontrol solutions, which rely on natural mechanisms to control pests, are recognized by the French Ministry of Agriculture as a decisive alternative to reduce the use of conventional plant protection products and as one of the pillars of organic farming.

## **An innovative solution, based on AFYREN organic acids**

The formulation of the repellent solution developed by CEARITIS uses biobased acids produced by AFYREN which act in synergy for greater efficiency.

AFYREN's biobased products are manufactured using an innovative fermentation technology based on natural micro-organisms. AFYREN's process uses co-products from non-food biomass in short supply chains, for example, co-products from sugar beet crops. The whole process is environmentally friendly, entirely biomimetic and zero waste — the only substance left over is transformed into fertilizer usable in organic agriculture.

AFYREN's products meet the most demanding standards and regulations in its main application markets — human and animal nutrition, flavors and fragrances, lubricants, life sciences, and material sciences.

AFYREN NEOXY, AFYREN's first plant, located in the Moselle region of France, is in the start-up phase, meaning certain production processes are being optimized ahead of the industrial launch of production and invoicing to customers.

*"CEARITIS and AFYREN jointly contribute to the promotion of products that respect biodiversity and the health of both farmers and consumers. CEARITIS' approach is totally compatible with AFYREN's, since*

*the biocontrol solution will be produced in France, using a circular approach. Our two companies have the same desire to contribute to sustainable economic development that protects natural resources. We share the same vision to meet the challenges of tomorrow," said Nicolas Sordet, CEO and Co-Founder of AFYREN.*

### About CEARITIS

Cearitis researches and develops biocontrol solutions. Created in 2020 by two complementary partners, the company now has 8 employees, with a developed R&D operation. CEARITIS implements protection solutions against the main tree-crop pests. The first trials were carried out on the olive fly *Bactrocera Oleae*, and the company expanded its scope two years ago to include work on the red fruit fly, *Drosophila Suzukii*, and soon on *Ceratitis Capitata*, the fruit fly that attacks more than 250 varieties of crops. CEARITIS's work is based on a simple process, an attractant, and a repellent. The innovation is in the complementarity of the two solutions, created from natural molecules never before used in agricultural protection. In addition, the solution comes with an innovative trapping system designed and manufactured specifically for the targeted pests and easy to set up in the field. CEARITIS has received numerous awards, including an award at the CES in Las Vegas, the Cleantech Open France and the ILAB. CEARITIS is committed to following its environmental and societal values at all levels.

Find out more: <https://www.cearitis.com/>

### About AFYREN

Founded in 2012 to respond to industry's growing need to reduce the use of petroleum derivatives as ingredients, AFYREN produces biomolecules from the reuse of non-food biomass. AFYREN's production replicates the properties of equivalent petroleum-based molecules that are widely used in human and animal nutrition, cosmetics, flavors and fragrances and fine chemicals. By offering natural alternatives to these strategic markets, AFYREN is engaged in a low-carbon economy and proposes a truly circular approach, with the use of local biomass and the choice of strategic locations as close as possible to its customers. Resulting from 10 years of research, AFYREN's disruptive innovation won the 2030 Global Innovation Contest in the "Plant proteins and plant chemistry" category and was selected in the French Tech 120 in 2020 and 2021. In 2018, AFYREN committed to its industrial project by creating the AFYREN NEOXY joint venture with Bpifrance's SPI fund. AFYREN NEOXY is dedicated to the first industrial production of AFYREN natural organic acids in the Grand Est region. The AFYREN NEOXY factory opened its doors in 2022. AFYREN and AFYREN NEOXY now employ nearly 100 people at their sites in Lyon, Clermont-Ferrand and Carling Saint-Avoid.

In 2021, AFYREN listed on the Euronext Growth® exchange in Paris, raising a total amount of 70.4 million euros with the objective of accelerating its industrial development (ISIN code: FR0014005AC9, ticker: ALAFY).

Find out more: <https://afyren.com/>



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