

The start-up Carbiolice and Barbier Group are combining their expertise to develop biodegradable mulch film using Evanesto® inside.

The enzymatic additive Evanesto®, developed by Carbiolice, has recently led to the Riom-based company collaborating with Barbier Group, the French leader in the manufacture of films for agriculture. The project aims at developing a new type of biodegradable mulch film with a higher content of bio-based plastics (PLA), containing the Evanesto® additive, which has been designed to enable PLA to biodegrade at ambient temperatures.

Following validation of the mechanical properties and residual enzymatic activity of the films produced on pilot installations at the beginning of the year, Carbiolice and Barbier Group extruded over 1000 m² of mulch film last May for testing in real field conditions.

The innovation of this "new-generation" biodegradable mulch film lies in its PLA content. Biodegradable film currently contains a limited concentration of PLA, but Evanesto® inside enables a PLA rate of 20% to be achieved, increasing the ratio of renewable resources and extending its lifespan, while remaining biodegradable in soil.

Tests for physical resistance and biodegradation are currently being carried out under real growing conditions.

Tests on the mulch film containing Evanesto® inside are currently being carried out at several experimental horticultural stations. Laid on surfaces of about 1000m² for long-term crops, the film is then analysed from the time of installation up until disintegration. The trial is scheduled to last 1 year, after which polyethylene mulch films and biodegradable films that does not contain Evanesto® will be compared to mulch film containing Evanesto® inside. The full results of these tests are expected in May 2021.

Reminder of legislation: Under decree no. 2019-1451 of 24 December 2019 relating to the prohibition of certain single-use plastics, objects made of oxodegradable plastic (not assimilable by micro-organisms and not compostable) will be banned in France from 1 January 2021.

Serge Vassal, Barbier Group CEO:

"Barbier Group, which has strong ties with its local area and has placed innovation and environmental issues as strategic priorities for its development, has worked alongside Carbiolice on technical projects since its creation. This project therefore naturally followed, aimed at providing mulch films with

Evanesto® inside that meet farmers' requirements in terms of functionality and control over the kinetics of disintegration and biodegradation, while guaranteeing the quality of the soil."

Nadia AUCLAIR, Carbiolice CEO

"Alongside teams from Barbier Group, Carbiolice's long-standing partner, we are aiming to provide innovation that is 100% made in France. Moreover, we are convinced that legislation will favour accelerated adoption of biodegradable film to meet current health and environmental challenges."

About Carbiolice

Carbiolice is an innovative French company created in 2016 to develop a new sector of fully compostable and biodegradable bioplastics.

The start-up is based in Riom, in the Auvergne region of France and headed by Nadia Auclair, a polymer engineer. Working closely alongside Novozymes – the world leader in enzyme production – Carbiolice has developed an enzyme additive which, when added to the manufacture of bio-based plastic packaging (PLA), renders it fully compostable in domestic conditions in 200 days.

Carbiolice holds an exclusive license of the enzyme technology developed & patented by Carbios.

The company is supported by three shareholders, CARBIOS - a green chemistry company that designs and develops innovative enzymatic processes, the SPI investment fund operated by Bpifrance, and LIMAGRAIN INGREDIENTS - a subsidiary of the world-renowned LIMAGRAIN cooperative group.

It currently has 25 employees and was awarded the 2019 Europa Bio Prize for the most innovative biotech in Europe.

Read more: www.carbiolice.com

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About Barbier Group

Created in 1955 by Abel Barbier, Barbier Group is one of the 5 leaders in the production of polyethylene films for agriculture, industry and trade, with 155,000 tons processed each year. Barbier Group is still a family business, with a culture completely dedicated to safety, quality, service, performance, investment and innovation.

The company stands out for its experience, know-how and 100 % French production. Barbier Group is particularly concerned about environmental issues which, over the years, have become strategic for its development in eco-design, bio materials, the collection flow of post-consumer films in order to recover and recycle household, industrial and agricultural films and the use of multi-layer films.

This private group's continuity is achieved thanks to the involvement and performance of each team member, working with the same ambition, excellence and determination to continue the adventure initiated by Abel Barbier in the fields of packaging and agriculture.



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