

NOVEL BIOPESTICIDE FROM ORGANIC WASTE



2 million tonnes of pesticides

are used each year to prevent pest infestation*



Only **3.5%**

of the global pesticide market are biopesticides**



HOW TO CREATE AN EFFICIENT PESTICIDE THAT DOES NOT HARM THE ENVIRONMENT ?

➤ WHAT?

CENER proposes to use the sugar hydrolysate extracted from urban biowaste and converts it into a microbial biopesticide that has been approved for use in biocidal products in the EU***.

This product shows three main advantages:

- Urban biowaste is a low-cost and sustainable feedstock.
- Selectivity rate of biopesticides is higher than most synthetic pesticides, meaning it is very efficient on the targeted pest while showing lower toxicological risk toward other species.
- Biopesticides decompose quickly, resulting in lower exposures and largely reducing potential pest resistance issues.

➤ HOW?

To realise the bio conversion, CENER uses *Bacillus thuringiensis*, a microorganism that naturally grows in the sugar media and generate proteins that have biocidal properties. At the end of the process, these spores are separated from the fermentation media and formulated as biopesticides.

The mode of action of biopesticides results from toxic proteins that are taken up by the target insect larvae via ingestion, causing its death. Since there are no other active metabolites or degradation products that are known to contribute to the insecticidal toxicity, biopesticides are inherently less toxic than conventional pesticides and generally affect only the target pest and closely related organisms.

➤ WHEN?

The current TRL of the technology is 5 and it is expected to reach 6/7 by the end of the project, i.e. end of 2022. To prepare market readiness, CENER will now scale up the experimentation using 1000 litre batches.

Contact

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Want to learn more about bio conversion ?

- Listen to the webinar (ES) **Biomasa: Escalado de procesos a escala piloto y demostracion.**
- Discover our **SCALIBUR project.**

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ENERGIAS RENOVABLES

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* De A, Bose R, Kumar A, Mozumdar S (2014) Worldwide pesticide use. In: Targeted delivery of pesticides using biodegradable polymeric nanoparticles. Springer, pp 5–6

** <https://www.sciencedirect.com/science/article/pii/S0167779912000042>

*** REGULATION (EU) 2016/1929 of 4 November 2016