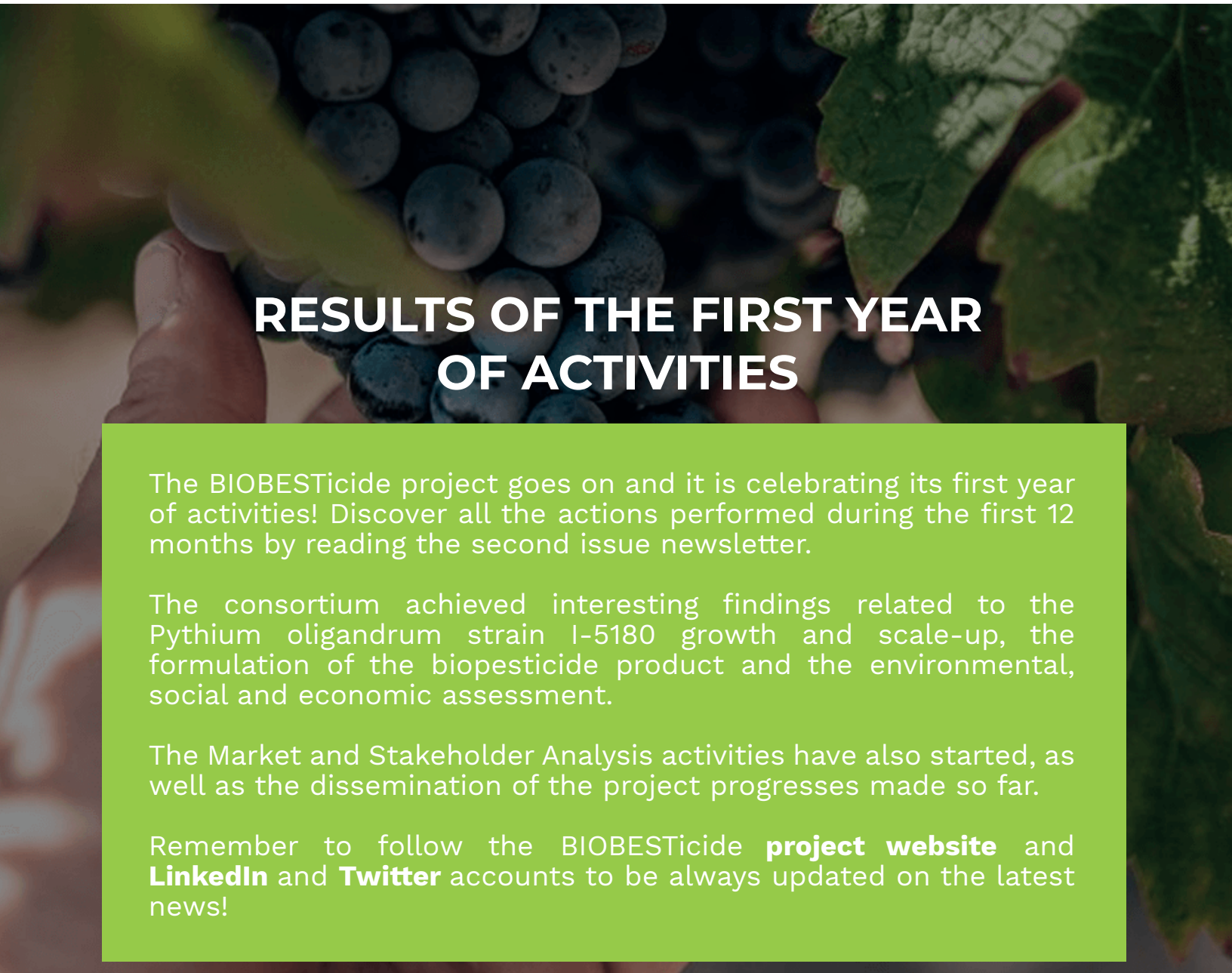
BIOBESTicide

BIO-Based pESTicides
production for sustainable agriculture



RESULTS OF THE FIRST YEAR OF ACTIVITIES

The BIOBESTicide project goes on and it is celebrating its first year of activities! Discover all the actions performed during the first 12 months by reading the second issue newsletter.

The consortium achieved interesting findings related to the Pythium oligandrum strain I-5180 growth and scale-up, the formulation of the biopesticide product and the environmental, social and economic assessment.

The Market and Stakeholder Analysis activities have also started, as well as the dissemination of the project progresses made so far.

Remember to follow the BIOBESTicide **project website** and **LinkedIn** and **Twitter** accounts to be always updated on the latest news!

Pythium oligandrum strain I-5180 growth and scale-up

Greencell defined the need for the production tool used for the main cultivation step of Pythium oligandrum. The aim of this main step is to produce and harvest *Pythium oligandrum* oospores using a static tray fermentation technic. The specification was submitted to two engineering firms specialized in the design and the installation of industrial fermentation equipment. The proposals were challenged on Greencell's pilot facilities in terms of oospore production. These tests have revealed gaps between the proposed solutions and the production targets set in the project. Trials are in progress to improve the specification of the tray fermenter and *Pythium* harvesting equipment to ensure that production targets will be met. In addition, the first R&D assays have enabled Greencell to identify a decrease in *Pythium oligandrum* production yield by incorporating beet molasses rather than sugarcane molasses into the oospores culture medium. However, these assays highlighted levers that could be used to improve yields using beet molasses as proposed in the project, such as the variation in biochemical quality or in quantity of beet molasses in the medium.

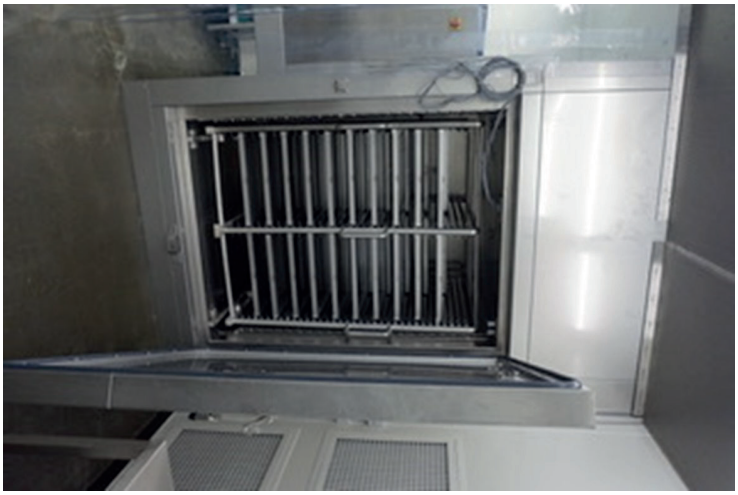


Figure 1: Trail Fermenter

Formulation of the biopesticide product

Scope of this work package, led by Lamberti, is to define, develop and prepare a suitable formulation for the delivery of the biological active ingredient taking into account easiness of use, chemical and biological stability.
Up to date, several formulation types for optimal *Pythium oligandrum* delivery have been studied and ranked, trying to optimize them to provide a good solution for field trials/real field application. The study covered a wide range of possible formulation types, from solid to liquid, with the latter to be preferred especially for convenience of production and for subsequent in vivo application.
Currently few finalists have been selected for their stability profile and for their good application behavior, and the last round of stability testing is taking place to make the final decision on the preferred formulation to be used for the next project phase.

Products registration at EU level

EURION Consulting has written the Approval dossier according to the data requirements of the Regulation (EC) n°283/2013 (active substance) and Regulation (EC) n°284/2013 (representative formualtion), which was sent to the Belgium Authorities on November 25th, 2020. This Approval dossier is very important to obtain the approval of the *Pythium oligandrum* strain B301 at European level, to be able to apply for a registration dossier for the formulated product in all the European countries where it is intended to be put on the market.

Environmental, social and economic assessment

Tecnalia is developing an integrated Life Cycle Sustainability Assessment in WP6, considering the environmental, economic and social impact of the technological developments of BIOBESTicide. The main effort has been focused in establishing the methodology to be applied and how the Life Cycle Assessment, Life Cycle Costing and Social-Life Cycle Assessment should be carried out (goal and scope phase).

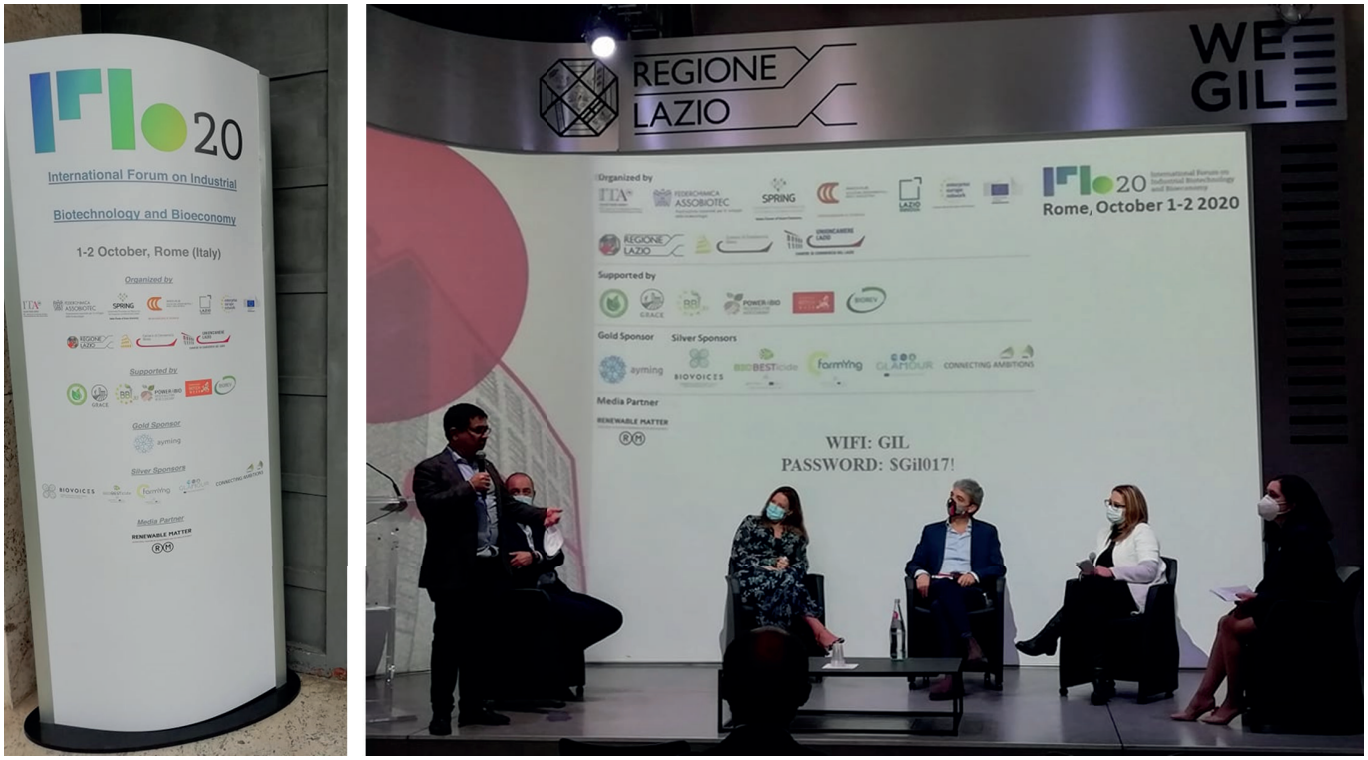
Tecnalia is checking previous works related to sustainability assessments in the field of (bio)pesticides, bio-based products, agriculture and wine production, developing a database and identifying the methodological decisions made in these studies, in order to align BIOBESTicide with them.

Exploitation and Dissemination

CiaoTech has started to run the Market and Stakeholder Analysis activities by using an its own innovation intelligence methodology. These activities are crucial to identify the market and technology trends as well as the most important stakeholders related to the BIOBESTicide project with the ultimate goal to provide partners a comprehensive overview to set up the road to market and possible exploitation routes.

In the context of the Dissemination, CTECH developed and released the project website and social media channels accounts, which are monthly updated with interesting news and events related to the initiative's scope. On the project website are also available the D&C Materials: brochure, poster and roll-up, flexible tools to disseminate the BIOBESTicide aims in events and other communications activities, and are downloadable from the ‘Project Dissemination Materials’ page.

In October 2020, CTECH presented the project in the online poster session of IFIB 2020, the International Forum on Industrial Biotechnology and Bioeconomy.



BIOBESTicide sponsor of IFIB 2020

EURION Consulting

BIOBESTicide is also joining forces with the BBI funded projects EXCornsEED and Model2Bio, with the aim to boost their impacts and visibility through joint activities.

EXCornsEED aims to develop and validate an integrated process of innovative and highly sustainable extraction/purification/concentration technologies to be applied to bio-refineries side streams for the recovery of proteins and several other bio-active compounds and characterization/preparation of these as ingredients for food, specialty chemicals, and cosmetics markets.

Model2Bio will develop a predictive model to help identify, select and reuse organic waste streams. The model will specifically cover stream composition, volume and transformation as well as logistics and business cases.

CTECH gathered with representatives of the related initiatives to discuss the first steps of the collaboration, which has started with networking activities on social media channels and it will continue with the exchange of non-confidential information in terms of success stories and lessons learnt during the execution of the projects.

Follow us on LinkedIn and Twitter and stay tuned!

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