

ABSTRACT BOOK FOR ORAL AND POSTER PRESENTATIONS

Biostimulants World Congress

18 - 21 November 2019

Fairmont Rey Juan Carlos I – Palau de Congressos de Catalunya,
Barcelona, Spain

www.biostimulantsworldcongress.com

#BIOSTIMULANTSWORLDCONGRESS

Organised by: **New AG**
International
www.newaginternational.com

In Partnership with: **EBIC**
European Biostimulants Industry Consortium

P46

How to select efficient and suitable PGPR for biostimulant product development: design of a tailored screening program

Maria Francisca Vasseur Coronado, Michele Perazzolli, Herve Dupre de Boulois, Christine Vos, Ilaria Pertot and Gerardo Puopolo

De Ceuster Meststoffen NV (DCM)

Microbial biostimulants represent a valuable and environmentally friendly addition to the use of fertilizers [1]. Plant Growth Promoting Rhizobacteria (PGPR) are good candidates to achieve this goal, since they play an important role in soil ecology by promoting plant growth and increasing the supply or availability of nutrients to the plant [2]. However, identifying interesting PGPR to develop innovative and efficient products remains a challenge that researchers and companies are trying to tackle more than ever. Here, a screening program was designed to facilitate the discovery of novel PGPR by following a stepwise approach consisting of eight successive steps. After defining a product development objective for a specific crop, the screening procedure was adapted to this target to ensure selection of PGPRs with the desired properties. This approach was validated through the selection of PGPR that could advantageously be combined with humic acids (HA) for application on tomato plants. Overall, following this strategy, six PGPR were selected with characteristics that fulfilled each parameter included in the screening program. Based on their modes of action and biology, microbial consortia were created to obtain a synergistic plant growth promotion effect. These consortia are currently being tested under controlled conditions, as well as in field trials.

Scientific References

[1] Malusa, E., Vassilev, A. (2014) Contribution to set a legal framework for biofertilizers. *Applied Microbiology Biotechnology* 98: 6599-6607. [2] Sessitsch, A., Brader, G., Pfaffenbichler, N., Gusenbauer, D., Mitter, B. (2018) The contribution of plant microbiota to economy growth. *Microbial Biotechnology* 11: 801-805.