

October 2020

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MONTHLY

## The Global Biocontrol & Biostimulants E-Newsletter

### 2BMonthly Exclusive

**Botanical Solution Inc. is set to bring biofungicides to new markets, plus a botanical active that could be used in pharma as vaccine adjuvant.**

Botanical Solution Inc (BSI) is looking to take its biofungicide product Botristop to other Latin American markets and to the US.

BSI has had Botristop on the market in Chile since 2016, and through a partnership between BSI and Syngenta since 2019.

The company is well advanced with its registration application to Peru and is beginning efficacy trials in Mexico as part of its registration process in that country, CEO Gaston Salinas told 2BMonthly.

The company is also in the process of submitting its registration documents for the EPA in the US.

Botristop is primarily used against the fungal disease *Botrytis cinerea*. The product, which is supplied in liquid formulation, is based on botanical extract from a plant that is native to Chile, named *Quillaja saponaria Molina*.

The plant has been traditionally harvested from the wild for many decades and has not so far been cultivated. In contrast, BSI grows this plant in the laboratory, turning it into a dry biomass. The active compounds are extracted from the dry biomass and then incorporated into the formulation. The end product can be tank mixed with conventional pesticides, said Salinas when speaking to 2BMonthly from Davis, California.

Salinas, who is Chilean, is one of the co-founders of the company, the other being fellow Chilean Gustavo Zúñiga, who led the research work on extracting the botanical compounds from the *Quillaja saponaria* plant.

Founded in 2013, BSI's main production facilities are in Santiago, Chile.

"In our 500 square metre laboratory, we can produce enough material to service the new markets," said Salinas. The plant is used as a raw material by other industries. Salinas explained this can be an exploitative use of the raw material. He said their process means the plant can be harvested in the laboratory, rather than depleting the native habitat.

Other botanical compounds, such as QS-21, are found in this plant, and in the highest quantities in the bark of 15-year-old mature trees, so these tend to be harvested.

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"We're raising the bar on botanicals," said Salinas, highlighting the problem of making botanical products scalable. "It doesn't make sense to have a raw material that requires harvesting part from the wild."

BSI is backed by venture capital and shares the same backer as a Chilean table grape exporter who was an early adopter of Botristop.

The registration process for Botristop in Chile took four years.

There is no separate registration process for biocontrol over conventional pesticides.

"For a mono-product company, that's quite a challenge," said Salinas. "Today we are generating revenue, but we still need resources from venture capital."

The company is nearing registration in Peru and is aiming to launch Botristop there in the second quarter of 2021. After the US, Salinas said the company is eyeing Europe as an opportunity.

The company is also developing new products. Using extracts from the same raw material, the company has a nematicide and herbicide in the early stages of development.

Another possible end use is the production of QS-21 compound, which is used by the pharmaceutical industry to make an adjuvant for vaccines.

In a similar way to adjuvants in crop protection, adjuvants help the effectiveness of the active in a vaccine.

Salinas said the QS-21 is beneficial to the action of the antigens in a vaccine. The *in vitro* plants that BSI cultivate in the laboratory also produce QS-21 and in quantities that could be of interest to the pharmaceutical industry.

Salinas said there have been attempts to produce QS-21 synthetically, but so far nobody has achieved a low-cost

"We're in the process of packaging the information to show that our extracted QS-21 is equivalent, and we're confident we will begin production very soon."