Botanical Solution Inc. Partners with Syngenta to Take Botanical Biofungicide to the US, Canada and Mexico

Gaston Salinas is CEO & Co-founder of Biological Solution Inc. (BSI), a biologicals company specializing in lab-grown botanical materials for the agricultural and pharmaceutical industries. Founded in Chile, with additional production facilities in California, BSI uses its proprietary plant tissue culture to create high-quality compounds without relying on traditional, resource-intensive harvesting. Since 2021, Syngenta has been the company's distribution partner for its biofungicide, Quillibrium, in Chile and Peru. Quillibrium is based on a botanical extract from Quillaja saponaria Molina*, a tree native to Chile. Salinas spoke with 2BMonthly to outline the latest plans to take Quillibrium to Mexico, Canada and the US.*

Gaston Salinas

To begin, can you please tell us a little bit more about *Quillaja saponaria* Molina and its properties?

Of course. *Quillaja saponaria* is an evergreen tree that is native to Central Chile. It is known as the soap bark tree because its inner bark contains high levels of saponins, and historically, this bark has been used as a natural soap, shampoo, and detergent. In extract form, *Quillaja saponaria* acts as a highly effective, broad-spectrum botanical biofungicide as these triterpenoid saponins will disrupt fungal cell membranes.

Quillaja saponaria trees are protected by strict deforestation laws in Chile, however, so to cultivate this valuable resource, we grow the *Quillaja saponaria* indoors, under laboratory conditions. We have a production facility in Santiago, Chile and two additional labs in Davis, California where we are also cultivating these exotic trees.

We have a patented approach to growing these trees in the lab – and extracting the needed compounds while the plants are in vitro. This has enabled us to produce high-quality compounds for both agricultural and pharmaceutical uses. These plants also produce QS-21, a key ingredient for adjuvants in vaccines for the pharmaceutical industry, and so in addition to our partnership with Syngenta for agricultural markets in the US, Canada, and Mexico, we formalized a partnership for QS-21 with Croda Pharma in 2023.

Has *Quillibrium* received regulatory approval in some or in all of these markets?

We're going through the regulatory process for Mexico, and anticipate that should be ready in the next few months as we address some minor queries from the regulators. If all goes well, product should be available in Mexico later this year. Also, later this year, we'll be submitting to the US EPA. If all goes as planned, we are targeting a 2028 date for Quillibrium to hit distributors' shelves, but that date is very dependent on the speed of the process as it passes through the EPA. And of course, the US requires separate submission to California.

As we've been making these investments in the necessary data for the US and Canada, we've also been gearing up our regulatory efforts toward a future EU submission, which we perceive to be the most stringent.

Please tell us what we can expect to see on the Quillibrium label, and what advantages it offers.

Quillibrium was first marketed as a product that combats the fungal disease *Botrytis cinerea*, but through excellent results and work with growers in Peru and Chile, that list has expanded to include sour rot, powdery mildew, and *Alternaria alternata*. The crop list has also now increased to including grapes, tomatoes, berries, cherries, with a focus on high-value crops. We're planning to have a robust label for the Mexican market, which will include even more diseases.

From a positioning standpoint, we've learned that Quillibrium is favored by farmers growing for export since it can be used as a late-season product for even the strictest maximum residue levels (MRLs). However, it is also applied throughout the season and has been shown to be an effective preventative against powdery mildew, for instance.

What about the post-harvest market? Do you see any application for the product for post-harvest use?

We have looked at the market, which we consider to be more of a niche market. While we may move in that direction at some point, we don't feel it's ready quite yet.

We saw the announcement that Syngenta was going to be your distribution partner for North America. What is the backstory behind that decision?

Syngenta has been BSI's partner in Peru and Chile since 2021, and we're now Syngenta's partner of choice when working with botanicals. The partnership has been successful for both parties because Quillibrium has shown its resilience when used in a program with conventional chemicals. I think we both understand the needs of growers, and have done a good job of crafting a joint value proposition with Syngenta.

Do you have any plans for expanding your production? Any products in the pipeline?

When Quillibrium becomes available in the US, Canada, and Mexico, it may be that BSI supplies the active ingredient to a formulator to finish the end-use product. We have a nice template to work from with the pharmaceutical adjuvant QS-21, where most of the downstream processing is done by contract manufacturing organizations.

As for the pipeline, in terms of other markets, BSI is looking at Ecuador and Colombia, and the ornamentals sector. Brazil is a market that BSI still has under review. Many of the big ag companies are already there, so it's a question of finding the best partner.

From a products perspective, we have been busy screening botanicals for potential biocontrol applications. Over a period of three years, we reduced 200 candidates down to four: two potential insecticides and two potential bioherbicides. We will be looking for collaborators to help us bring these to final product stage. ■

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