Chile's first greenhouse heated entirely by geothermal energy has produced excellent results, with good crop yields and substantially reduced input costs.

The project is based in the commune of Lampa, close to the capital Santiago in the country's center.

It has been co-funded by the Foundation for Agricultural Innovation (FIA) of the Ministry of Agriculture with resources from the Innovation for Competitiveness Fund of the regional government, and developed by agricultural entrepreneur Sergio Aguilar.

The system controls the temperature dynamically according to the needs of specific crops, which is said to reduce production times, increase yields and reduce costs for farmers.

"The results validate the use of the geothermal heat pump technology for climatization, especially important when using water in hydroponic greenhouses," the head of the FIA initiative Abdo Fernández said in a statement

"It allows better quality vegetables to be produced throughout the year.

"With that in mind, if this were to be accompanied by proper business management, new products could be introduced into sales channels which could increase the profits for small and medium-sized farmers, helping their companies to grow."

According to the FIA, the project could deliver five times the amount of electricity consumed, meaning that if the generation, transmission and distribution of the geothermal energy had an efficiency of at least 20%, the method would outperform conventional methods of producing electricity while also being more environmentally friendly.

Fernández said that with this technology, the water temperature for hydroponically-grown crops could be optimized throughout the year. This could lead to a 80% increase in production in the summer and a 65% increase during the winter months.

For an annual average, yield could increase by up to 40%, bearing in mind there are months of the year with almost optimal conditions naturally.

"The system can match those conditions during the months with the highest and lowest temperatures of the year," Fernández said.

He added the technology could be adapted very well to places in Chile that were colder than the Metropolitan Region, and contacts were already being established in the southern

regions of Aysén and Magallanes in Patagonia to evaluate the possibility of developing a complementary project and supporting local agriculture.

Photo: FIA

www.freshfruitportal.com