

Assessment the PGPR activity in *Triticum aestivum* and bacterial antagonism of isolated bacteria from *Nothofagus* forest of La Araucania Region, Chile.

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Wheat (*Triticum aestivum*) is the second cereal crop worldwide, the commercial interest is due to the nutritional composition exhibiting. In Chile, wheat production is concentrated in the regions of Bio Bio and La Araucania, probably by the climatic conditions and soil intrinsic properties that these possess. However, according to production data of the past nine seasons, this cereal production has been affected, decreasing progressively. This has triggered great interest in the study of Plant Growth Promoting Bacteria (PGPR). Because of this it was proposed to evaluate the antibacterial activity of PGPR bacteria isolated *Nothofagus* sp. tree (*N. obliqua*, *N. alpina* and *N. dombeyi*). 61 strains from 3 sector of Region of La Araucania, Chile were isolated (35 from the sector of Angol, 14 from Cunco and 12 from Puesco). Some these strains are Phosphorus Solubilizing Bacteria and lead resistant bacteria. They were randomly selected for testing 18 strains of PGPR seed of *Triticum aestivum* var. Pandora, planted in a mixture of vermiculite: soil: perlite ratio 3: 3: 1 and for the evaluation of the antibacterial activity diffusion technique was used Kirby Bauer method. The results show that at least 5 strains are effective PGPR activity both in the long and in the foliar and root mass, indicating that there are statistically significant differences from the control. The results of susceptibility between strains of bacteria show that are capable to inhibiting *Pseudomonas syringae* and *Erwinia* sp., both are plant pathogenic bacteria of agricultural interest. This allows to note that there *Nothofagus* forests strains able to tolerate adverse conditions, such as environmental pollution, which also affect the forest, there may be a possible alternative to face problems of agroforestry interest. As an extension of this research, the strains with PGPR activity will be evaluated in other type seeds of agricultural importance.

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