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Economic Effect of the Genetic Modifications Bt and Rr in Corn Crops for Seed Purposes

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Abstract

The great advance of the agriculture in the last decades has been due mainly to the incorporation of technology to productive processes. Among these, the biotechnology through genetic modifications has undoubtedly given place to the transgenic and genetically modified organisms. It has allowed to transfer genes of agronomic importance to organisms, which confer them — among others properties — tolerance to herbicides or resistance to illnesses or plagues. This would influence significantly in the increasing of profits and the value of crops with such characteristics. Nowadays, there are studies that have tested that the GMO have enlarged the productivity, reducing the conventional use of pesticides, diminished the number of cultivation activities, with the consequent savings of time, labor and use of machinery. Summarizing, it have had an economic impact — and even environmental — on the productivity of some crops. All of this should be translated in a decreasing of production costs in some crops, especially, the ones that have seen in the last decade a systematically fall in their prices in the international markets. In the case of Chile, the legislation only allows the multiplication of GMO vegetable species whose final product, the seed, should be exported. Given this framework, the present study considered as a main objective to make a comparison between the corn production costs for seed not modified genetically and that modified Bt (resistance to insects) and RR (resistance to herbicide). From this comparison, the main differences in the variable costs of production of the two forms of crops were established. This allows us to construct a scenery of the potential economic benefits that would have in Chile the liberation to the market the usage of genetically modified maize seed for grain production, allowing in this way to increase the competitiveness degree of Chilean producers.

Keywords: Competitivesness, cost of production, economic production, genetic modifications

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