Optimal Licensing Design for New Varieties to Expand the Market Share of Florida Strawberries

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Summary

The Florida strawberry industry can offer the licensing contracts of a new variety to selected Mexican producers to reduce the negative effect of intellectual property rights (IPR) violations if the selected Mexican producers have large market shares and are more effective in monitoring and dealing with IPR violations than the domestic industry. In addition, using a monetary incentive for dealing with IPR violations and linking the incentive to the actual import quantity of the new variety are vital for the success of reducing IPR violations.

Background

In the U.S. winter strawberry market, the Florida strawberry industry has been facing serious challenges from Mexican imports. Mexico has the same production window as Florida, and the cost of producing Mexican strawberries is significantly lower. Developing new strawberry varieties could be a good strategy to differentiate Florida products and compete with lower-cost imports. But it can work only if not all foreign producers have access to the new varieties. Violations of intellectual property rights can and do happen. Thus, the design of an optimal licensing contract is the key to the success of the strategy of developing new varieties. The objective of this project is to identify the optimal limited licensing contract for a few Mexican competitors when the variety is licensed in an unlimited fashion to domestic producers and when Mexican competitors have a cost advantage.

Methods

We developed a simple conceptual model and conducted a simulation based on industry data to analyze the mechanisms of the licensing contracts offered to a few selected Mexican companies or growers that are optimal for 1) the Florida strawberry industry and the University of Florida breeding program or 2) total U.S. social welfare.

Results

Conclusion 1: A domestic industry can offer licensing contracts of a new variety to selected Mexican producers to reduce the negative impact of IPR violations on the domestic industry only if (i) the selected Mexican producers have relatively large market shares and have market power and (ii) there is a significant difference in the effectiveness of the monitoring and taking legal actions against IPR violations by the domestic industry and those by the selected Mexican producers with licensing contracts.

Conclusion 2: In addition to setting the quantity (or acreage) limit for selected Mexican producers, using a monetary incentive for monitoring and taking legal actions against IPR violations, which is linked to an observable outcome of IPR violations such as the import quantity, is necessary for the success of reducing IPR violations.

Conclusion 3: The optimal number of selected Mexican producers with licensing contracts depends on the relationship between the effectiveness of monitoring and the number of licensees, and the degree of competition in the market for the high-quality variety.

Conclusion 4: Compared with the objective of maximizing the benefit to the domestic industry and breeding program, when the objective is to maximize the total welfare in the home country, the optimal values of the incentive of monitoring, royalty rate

and fixed fee will be lower, but the linkage between the incentive of monitoring and the observable outcome (e.g., import quantity) of reducing IPR violations is still necessary.

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