The Economic Impact of Banning Methyl Bromide for Postharvest Uses

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Abstract

The welfare effects of cancellation of methyl bromide for postharvest fumigation are determined both by the characteristics of available alternative treatment technologies, and by the structure of the markets in which the treated commodities are sold. Postharvest treatment options affect producer profitability by way of their fixed and per unit costs, their impact on the quality and shelf life of the products, and their treatment times. Different treatments may also change the likelihood that a destination country rejects an export shipment. As the scientific research into alternative technologies progresses, these characteristics will be better understood and more accurately estimable. However, producer profits are also highly dependent on the prices at which the products are sold. These prices depend on a number of features of the markets for the products, such as the seasonality or time-sensitivity of consumer demand, the concentration of market power among producers, and the extent to which domestic and foreign consumers respond to price changes. In addition, the prices that domestic producers receive depend on the postharvest treatment options available to foreign competitors. We present a partial equilibrium economic model that illuminates the role of these features in determining the welfare impacts of a methyl bromide ban. In future, empirical estimates of the parameters of the model will be used to generate quantitative estimates of the likely range of these impacts.

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