

Tree Fruit Extension Economics Research Highlight

Growing Apples in an Apple Maggot Quarantine Area and Exporting to British Columbia and China

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Washington has implemented a quarantine program to prevent apple maggot dissemination and establishment beyond quarantine areas since the early 1980s. Apple producers with orchards in the quarantine areas must comply with pest regulations to export fresh apples. These regulations depend on export destinations. For example, China and British Columbia (Canada) require all apples shipped from the United States to be certified as apple-maggot-free; and apples from quarantine areas must go under cold treatment: stored at 1°C for 40 days. We examined the effects of these trade regulations, under different scenarios (Figure 1). Our results suggest that an increasing cost burden for the cold treatment raises the number of chemical applications, suggesting a substitution effect between pesticide application and cold storage. Moreover, if a producer has an orchard within quarantine areas and exports 2% of her total yield to British Columbia and China, she will encounter a profit loss of \$185/acre compared to producers not exporting to these markets. Also, considering the delay of shipments (40 days in cold storage) if the share of exports to British Columbia and China increase by 5%, profits will decrease by \$4,881/acre compared to the case of not exporting to these two markets. Export markets are increasingly important to the Washington apple industry, this study gives insights on the economic gains of preventing apple maggot expansion in Washington State.

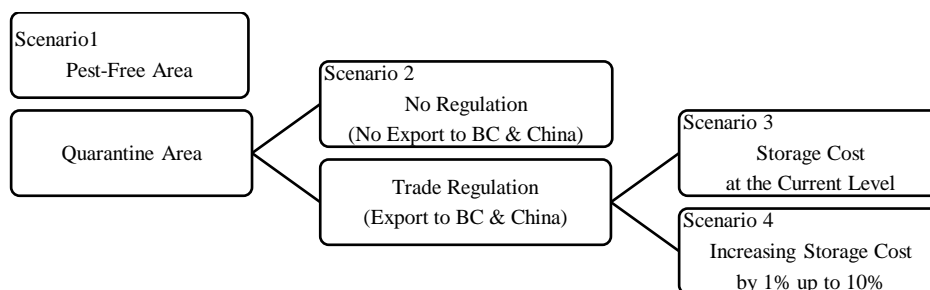


Figure 1. Scenarios considered in the analyses.

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