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Facing the Future in a Global Economy
Authors:
Linda Calvin and Philip Martin
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The U.S. Produce Industry and Labor: Facing the Future in a Global Economy

Linda Calvin and Philip Martin

The U.S. fruit and vegetable industry is labor intensive, faces higher labor rates than many other countries, and operates in a global economy with relatively free trade. Currently, labor makes up almost half of the variable production expenses for U.S. fruit and vegetable farms, although labor's share varies significantly by commodity. As a result, efforts to reduce labor costs are an ongoing challenge for U.S. producers. Over half of the hired workers employed in U.S. crop agriculture are believed to be unauthorized immigrants, and most hired workers stay in the seasonal farm workforce a decade or less. As a result, agricultural employers are constantly seeking new workers.

What Is the Issue?

Growers are concerned that immigration reform (or stricter enforcement of current immigration or labor laws) could reduce the flow of unauthorized workers into the United States. Fewer workers could affect the cost and availability of farm labor for U.S. producers and reduce their ability to compete as suppliers in a global marketplace in which many competing countries have much lower wages. If wages increase, growers could respond in several ways. Grower response would vary across different fruit and vegetable commodities and across growers of particular commodities. In this report, the authors examine labor use for production of selected fruit and vegetables and assess likely adjustments if labor costs increase significantly.

What Did the Study Find?

Commodities differ in their vulnerability to increases in labor costs. The authors of this report look at the likely adjustment scenarios for Washington State's fresh-market apples; Florida's processing oranges; California's fresh-market oranges and strawberries; raisins; fresh-market asparagus; and lettuce. Analysis of the case studies reveals three major adjustments to rising labor costs:

- Three commodities have partially adopted mechanical harvesters. As labor costs rise, more growers will likely turn to mechanization, which may result in fewer and larger producers of these commodities. The raisin industry is mechanizing; between 2000 and 2007 the estimated share of the raisin crop harvested mechanically increased from 1 percent to 45 percent. Mechanization of the processing orange harvest is currently stalled, awaiting the U.S. Environmental Protection Agency's approval of a chemical compound that would loosen the ripe fruit and make it easier for machines to remove them. Approximately 70-80 percent of the baby leaf lettuce crop is harvested mechanically; the rest would likely follow if wages increased.
- Producers of unmechanized commodities that face substantial import competition, such as asparagus producers, are likely to lose market share to imports as labor costs rise unless

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there is a breakthrough in labor-saving mechanization. Similarly, growers of commodities that face substantial competition in export markets, such as apple and orange producers, may lose export share if labor costs rise and growers are unable to keep their total costs per unit of output from rising.

- Producers of fresh-market strawberries and lettuce (other than baby leaf lettuce), with little import competition, are likely to cope with rising labor costs by providing labor aids to their workers to raise labor productivity or by mechanizing, if a harvester can be developed. These producers may be able to pass some additional costs along to consumers.

Rising wages could prompt the development and adoption of labor aids and mechanical harvesters. Mechanization is a complicated process and usually requires an integrated approach that includes changes in crop varieties, cultural practices, and harvesting methods. The progress of mechanization research is difficult to predict; some mechanization efforts quickly produce a solution while others fail to make progress due to complex technical challenges. Individual growers, grower organizations, machinery manufacturers, and the Government have all invested in mechanization research at one time or another. Interest in mechanization depends on current and future wages; when wages are low, interest in investing in mechanization research declines.

Even when a mechanical harvester is available, not all growers will adopt the new technology. Hand-harvested produce is usually of better quality, since it is hard to replicate the skill and care of hand harvesters. Until the technology has proved itself, farmers may be unwilling to risk investing in it. Mechanical harvesters often represent large fixed costs, and mechanization is more economical for large farmers who can spread such costs over more acres. For some crops, mechanical harvesters may be available in a range of configurations appropriate for farms of different sizes. Rising wages could also result in increased imports. Labor wages and costs in foreign countries are often low, but total production costs of fruit and vegetables delivered to the United States are often comparable with costs of U.S.-produced goods during the same season. Increased U.S. imports are sometimes due to lower costs abroad, but more often result from year-round demand for fruit and vegetables that cannot be grown profitably in most of the United States during the winter.

How Was the Study Conducted?

The case studies are based on literature reviews, commodity statistics, and in-depth conversations with industry experts to understand the economic conditions and ability to adjust to potentially higher labor costs. A small number of commodities—either hand-harvested or only partially mechanically harvested—were selected for assessment and represent a broad spectrum of produce items, including fresh, fresh-cut (bagged salads), and processed items (storable raisins and orange juice).