



The Economics of Pacific Northwest Storage Crops: Investor Summary

OVERVIEW

Storage crops represent some of the Pacific Northwest's most economically important commodities: in Washington State alone, the potato industry accounts for \$4.6 billion in state income, as well as providing 23,500 jobs. Global storage crop exports are significant: in 2009, for example, the U.S. exported approximately 3 billion pounds of frozen french fries (fresh weight estimate) valued at \$635 million.

This analysis targets the three most economically important storage crops in the Pacific Northwest: potatoes, onions, and carrots. We researched **organic production** of these three crops to explore the viability of an alternative, differentiated storage crop sector.



Pacific Northwest potato harvest -PHOTO BY LYNN KETCHUM

SUPPLY DRIVERS

- **Production costs** – Evidence indicates that organic potatoes are generally competitive with their conventional counterparts on production costs, though there are significant differences in yields across space and time for both production systems.
- **Technology/mechanization** – Mechanization of storage crop production has given rise to land consolidation for both organic and conventional production systems. Lack of machinery appropriate to the smaller scale of many diversified organic farms may be a factor in this process.
- **Crop rotation** – Crop rotation is arguably the most important step in successful, high-yield production of storage crops, particularly for organic farmers. Of the three most profitable



crops (potatoes, carrots, onions), each have distinct rotation times: onions are generally grown in 3-4 year rotations; carrot rotation should be at least 1 year; and potato rotation can be as high as 4-7 years.

DEMAND DRIVERS

- **Environmental values.** Consumer demand research indicates that eaters are willing to pay premiums to purchase organic foods, though data specific to storage crops is scarce. Consumer preferences for organic are driven in part by concern for the environment.
- **Health.** “Avoiding toxins” has been cited as a primary motivation for consumers to purchase organic, particularly with storage crops because of their unique susceptibility to absorbing harmful chemicals in the soil. Differentiated varieties, such as multi-colored potatoes and carrots, have additional health benefits associated with their colors that attract organic consumers.
- **Marketing and branding / packaging.** Given that 87% of consumers nationally regard the availability of locally grown foods as “Very Important” or “Somewhat Important”, marketing and branding campaigns for local storage crops, with a focus on differentiated and/or organic products, may prove a boost to local production.
- **The rise of processed foods.** Since 1940, demand for processed food products has steadily increased, especially within the potato industry; this trend has affected the trajectory of organic production and marketing. As of 2012, an estimated 87% of Washington’s total potato crop was sold to processors. Demand for processed products extends to other storage crops including carrots and onions.

OPPORTUNITIES

The regional consumer market for organic storage crops in the Pacific Northwest is still fairly small (as of 2012) due to low market penetration, but it may be growing.

- Seek opportunities to invest in **organic storage crops grown for the processing market**, in order to meet increasing demand for organic ingredients among producers of frozen and processed foods.
- Seek producers growing and processing **differentiated varieties of storage crops**, such as multi-colored carrot varieties, specialty potatoes such as fingerlings, non-storage onions including Walla Walla, Vidalia, and scallions / green onions.
- Focus on **market growth for organic potatoes and carrots**, over and above organic storage onions, for which market demand appears to be stagnant.
- Seek opportunities to invest in **branding and marketing initiatives for local and regional organic storage crops**, focusing on key attributes such as nutrition/health, flavor, and uniqueness.
- Seek opportunities to invest in **packing facilities** for small- to mid-size organic potato production.
- Conduct further research into **market trends for rotational crops** such as alfalfa and sugarbeets; seek opportunities to expand additional rotation crops with robust or growing markets which can accompany potatoes.

For more detail on the economics of storage crop production in the Pacific Northwest see the full narrative that accompanies this investor brief.