

Industry Perspectives
Onions



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Introduction

The West is one of the primary onion-producing regions in the U.S. Onions from the Northwest are fresh packed or processed by large, vertically integrated farms and privately owned packinghouses. From September to May, Northwest onion producers supply major markets, primarily sending fresh product east to larger population centers, with some product being exported, much of which is sent to Canada.

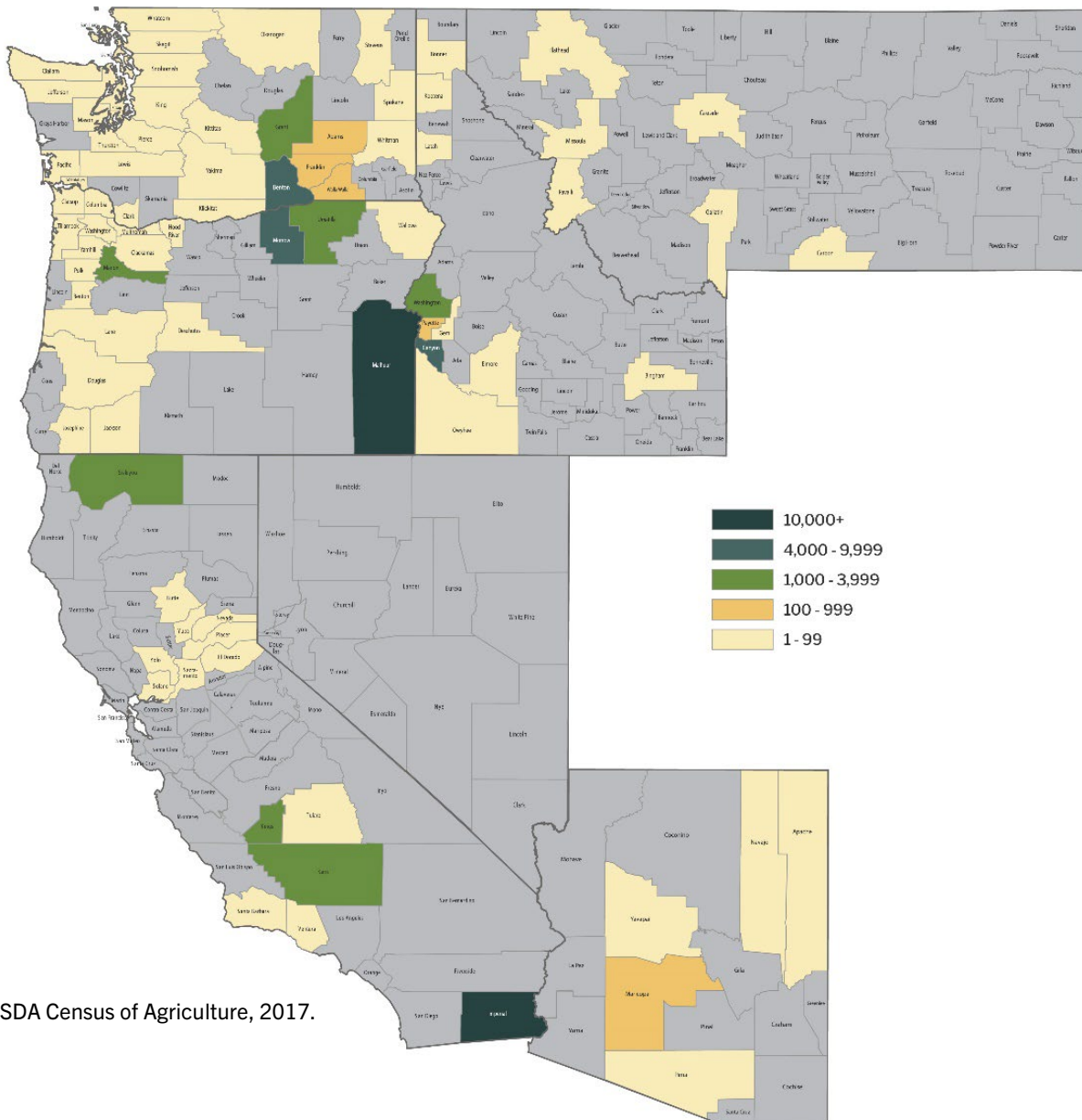
Production

More than 135 countries worldwide produce onions, with approximately 99.9 million tons grown and around 16.2 million acres harvested. The most recent global production data from 2020 show that India leads onion production, followed by China, with the U.S. ranking third. Together production makes up more than 50% of the world's total onion market.

In 2022, U.S. farmers planted 129,800 acres of onions. 52,100 of those acres, or 40%, were in Washington, Idaho and Oregon. California leads the U.S. in onion production with 40,700 acres planted, making up 31% of the market.

Among AgWest's territory, the bulk of onion production comprises four regions: the Treasure Valley in Western Idaho and Eastern Oregon, the Columbia Basin in Central Washington and North Central Oregon, the Imperial Valley in Southern California and Fresno County in the Central Valley of California. Other production areas include Western and Central Oregon and Walla Walla, Washington. Walla Walla farmers produce 500 acres of Walla Walla Sweets, a niche salad variety in the expanding global sweet-onion industry. Most Northwest onion production is for the summer storage variety. In 2021, Northwest onion production totaled more than 34 million cwt.

Onion acres by county in AgWest territory



Source: USDA Census of Agriculture, 2017.

Irrigation differs between regions. Locations with well water and direct access to river water benefit from fewer water impurities compared to water from canals. Sprinkler irrigation results in more potential for bacterial damage in the necks of the onions.

- In Washington, production is largely under sprinkler irrigation. To mitigate potential damage, growers are implementing more drip irrigation.
- In the Treasure Valley, most onions are grown under furrow or drip irrigation because the large yellow onions grown there are particularly susceptible to bacterial damage in the necks.
- In California, furrow irrigation systems lead the industry with sprinkler, and drip systems following respectively. Although, with increased water scarcity, drip irrigation systems are leading the shift for future irrigation systems.

Planting in the Northwest occurs in March and April. Harvest begins in August and continues into October, while production starts a month or two earlier in California. Onions are harvested by lifting the entire plant from the ground and letting the plant dry, or cure, for 7 to 10 days. Once the onions are cured, they are gathered and transported from the fields. Onions are then placed into sophisticated storage facilities, often equipped with heat, refrigeration and a controlled atmosphere where they are held until later needed.

Value chain

Onions are marketed as either fresh or processed. Fresh-onion consumption includes home and foodservice uses. Processed onions are most commonly frozen or dehydrated; they are also canned or included in other food products. Large, vertically integrated growers may conduct their own marketing. Growers may also sell onions directly to a packing shed, which provides services that can include post-harvest handling, packing, cooling and transportation. In both marketing processes, bulbs are sorted and packed mainly into 50-pound sacks or consumer-friendly packages (5-pound sacks).

The market for fresh and processed onions leverages a combination of open marketing and contract pricing. Early contract negotiations begin to establish market expectations for each crop year and contract pricing offers some market risk protection to producers, packers and processors. Some processors and fresh-pack processors seek to forward contract a portion of their annual inventory supply. However, because most onions are sold into the fresh market, open-market pricing is the primary driver.

The onion market can be volatile. Prices often change dramatically with small shifts in supply. The unique seasonality and storability of onions add to their market volatility and price variance. Most onions grown in the United States have a limited storage life of one to two months. However, onions grown in the Northwest are exceptional because they can typically be stored for six to eight months, depending on the type of onion and the storage facility. This allows onions from the Northwest to be marketed from September through April.

Idaho and eastern Oregon onions are marketed under a federal marketing order that authorizes grade, size and pack regulations. Most other onion-producing areas in the United States do not operate under a marketing order. Given the disparity of onion-growing regions across the United States and the onion industry's propensity to be less organized than other commodities, total seasonal production is frequently difficult to assess. Accordingly, even the perception of oversupply or undersupply in the market can have a marked effect on prices.

As marketing companies' capacity needs continue to grow, their need for large onion supplies will also grow. A consolidating retail and food service industry will further demand larger quantities of products. Retailers require large sales organizations that can fill high-volume orders beyond the normal marketing season.

Industry drivers

Onion demand

Demand for fresh produce in the U.S. continues to increase. Per capita onion consumption rose over 100% between 1982 and 2017, increasing from 12.2 pounds to an all-time high of 25.1 pounds. Today we have experienced a small drop in consumption with 2022 per capita consumption in the U.S. at 20.5 pounds. Factors driving demand include consumers' interest in healthy diets, increased use of onions in ready-made meals and onions' popularity among Asian and Hispanic consumers, the fastest growing racial/ethnic groups in the U.S. whose diets include more fresh produce than the general population.

Onion breeding/varieties

Advances in onion breeding are creating varieties with improved yields and storability. Depending on the variety, breeding enhancements include uniform round bulbs, foliage that performs well under heat stress with increased bolt tolerance

(resistance to premature flowering), and storage potential, with some varieties storing up to eight months. Varietal improvements provide growers opportunities for new and different growing practices, market segments and pricing windows.

Storage and packing

Producers' opportunities for pricing onions throughout the marketing season are largely dependent on storage and packing. Onion storage facilities are investing in technologies to extend onions' storability. Common storage enhancements include airflow, climate control and cold storage. Onion packing sheds have focused on automation, which reduces labor, lowers expenses and increases capacity and quality control. Together, storage and packing enhancements position Northwest onions to better complement markets in California, Texas, Mexico and South America.

Irrigation

Drip irrigating onions was introduced approximately 20 years ago in the Columbia Basin. Today, over a third of Columbia Basin onion growers use drip irrigation, and adoption in the Treasure Valley and California is increasingly popular. Benefits of drip irrigation include lower fertilizer costs, significant reductions in water use and nitrate leaching, increased control of insects, iris yellow spot virus and weeds. All of which improve onion size and marketable yield. Tradeoffs include added costs, increased attention to irrigation system design and maintenance.

Appendix A

Best practices

To survive in a competitive industry, onion producers must focus on multiple business aspects simultaneously. Basic production factors such as planter spacing, irrigation timing and weed management are all necessary to grow a good crop, but additional actions can help ensure long-term viability in the industry and even provide a competitive edge for producers. Best practices for row crops are grouped by their area of applicability and include production, marketing, labor management and cost containment.

Production

Onion producers and industry specialists have worked closely to develop practices and technologies that will increase yield and/or quality. Best practices in production include:

- Managing crop rotations with four or more years between particular row crops
- Implementing GPS-based tillage, planting, cultivation and yield monitoring
- Using variable-rate fertilization to enhance production efficiency
- Protecting consumers and raw commodities by adopting phytosanitary practices that prohibit the spread of plant pests or pathogens
- Applying regular and focused pesticides
- Incorporating industry experts like seed company representatives, fertilizer and chemical representatives, agronomists, university extension agents, etc., to increase overall knowledge and decision-making effectiveness

Onion growers are increasingly using drip irrigation. While the cost to use a drip irrigation system is higher than traditional irrigation methods, the benefits include:

- Efficient water delivery to the plant's root zone
- Uniform moisture level throughout the field
- Efficient chemical application, reducing nitrogen costs by as much as 40% to 50%
- Reduction in total water usage
- Decreased soil erosion
- Increased yields, with more uniform onion size
- Adaptation to fields with irregular patterns, rolling topography and/or marginal soils
- Reduced water contact with crop leaves, making conditions less favorable for disease
- Better moisture control that allows for more timely ground spraying

Growers can add efficiency by analyzing the costs and benefits of drip technology and using it when appropriate.

Another best practice is effectively managing the thrip population that spreads the iris yellow spot virus. Best practices in thrip management include timely and aggressive applications of insecticides, field selection that distances onion production from thrip habitat and longer crop rotations.

Marketing

Few row crop producers are large enough to take on the challenge of marketing their own crops directly to the consumer, so most producers rely on a processor or fresh packing facility to handle marketing. However, producers can increase the demand and marketing potential of their crops by using the following strategies.

Differentiation: Onion producers can differentiate their crops in the marketplace. Examples of differentiation include changing production methods to certify crops as organic or working with processors to grow specialty varieties such as Walla Walla Sweet onions.

Vertical integration: Some onion grower groups and producers have invested in fresh-packing facilities and others have expanded into processing or dehydrating facilities.

Each of these options has the potential to increase revenue, reduce costs or even maintain a market for growers. However, each has the potential to dilute capital and push an individual or grower group beyond core competencies, so producers must carefully evaluate opportunities.

In the case of fresh-onion integrated operations, capturing packing revenues helps hedge against price variability. In the Columbia Basin, most independent fresh-onion growers are also packers. This is also true for the Treasure Valley with over half of the growers maintaining at least partial ownership in a packing shed. Due to the competitive nature of the

industry, onion packers must operate under a best-of-class marketing desk to maintain competitive prices compared to retailers from both in and out of state.

Labor management

Best practices in successful labor management focus on strategies to retain better-educated and trained workers by:

- Improving working conditions
- Providing competitive compensation and benefits packages
- Adapting to workers' flexible scheduling needs
- Increasing automation/scale in equipment and other processes

Cost Containment

Managing costs remains a critical component in guiding an operation toward profitability. Best practices in this area include:

- Careful budgeting and variance monitoring
- Purchasing alliances to take advantage of volume discounts
- Overall cost control, offsetting increases in one area with reductions in another

While the adoption of various technologies is a proven way to cut production costs, it usually requires a significant capital investment. Growers must perform a cost-benefit analysis to determine whether capital investments provide the increased return to make it viable.

Long-term success requires that onion producers be superior growers and sound business managers who proactively and creatively manage production expenses, labor and marketing.

Appendix B

Glossary

Fresh-pack processors: Fresh-pack sheds are focused on packaging certain sizes of onions normally in 50-lb bags. Although smaller 5-lb consumer packs are becoming more prevalent, they have yet to overtake the normal 50-lb bag production. Fresh-pack sheds sell to retailers, brokers, and restaurants. Most packaged onions are sized as medium (2" - 3¼"), Jumbo (3" and up), Colossal (3¾" and up) and Super Colossal (4½" and up). Smaller sizes are used in some cases but are not as common.

Iris yellow spot virus: Virus transmitted by tiny milky white insects called onion thrips. Symptoms include yellow- to straw-colored lesions on leaves. Once the virus takes hold it brings down and kills the whole plant. The Iris yellow spot virus affects the yield and quality of final products.

Vertical integration: Alignment of agricultural business ventures concerning crop production including planting, growing, harvesting, storage, processing and marketing of a commodity.

Yellow bulb onion: Yellow onions, also referred to as sweet onions, make up the majority of varieties grown in the Treasure Valley. Varieties include but are not limited to Vaquero, Joaquin, Granero and 1600. Additionally, yellow varieties make up about 87% of the total crop produced.