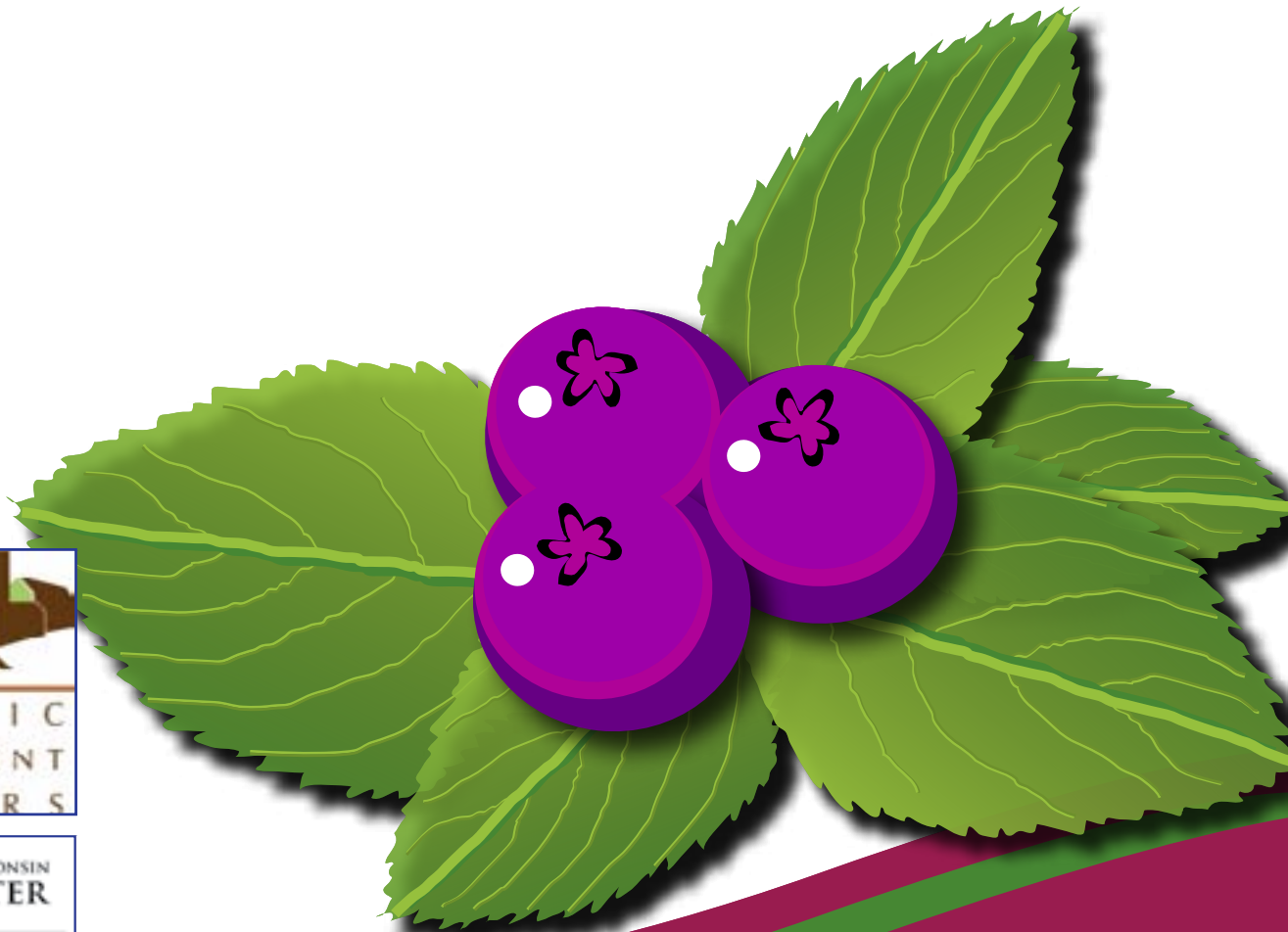


# A Market For Aronia Berries



Executive Summary

The purpose of this report is analysis the current market of Aronia Berries throughout the world with a focus on what American aronia farmers can do to compete with foreign suppliers. Aronia berries possess many health benefits including reduced blood pressure and diabetes effects. Moreover, they help those at risk for heart disease, stroke, and diabetes. The current United States supply is estimated to be between 1.5 and 6.3 million pounds. Most of the aronia berry supply is coming from international venders but with growing demand the United States can compete on price. Because of aronia's poor taste they are rarely consumed raw. They are typically processed into Juice, Vitamins or Supplements, in which each industry is expected to grow.

Based on the primary market research results, the Fiscal and Economic Research Center (FERC) of the University of Wisconsin-Whitewater recommends that aronia producers target sales to companies making health food snacks, beverages and other products. These products would specifically be aimed at consumers who are health-conscious and seeking healthy food solutions to prevention and treatment of disease. Aronia berries fit well into this market, which includes other "superfood" products. A secondary market for aronia berries are producers of products such as wines, juices, jellies, jams, and other consumer products due to the health benefits of the berry.

Market researchers located the aronia producers through the Midwest Aronia Association membership and through our interviews with purchasers of aronia berries who shared who their suppliers are.

Aronia berries, still being a new and relatively unknown fruit, offer some general growth opportunities that market research gathered through representative interviews. The secondary market research indicates that the market is predicted to grow with increased awareness of the benefits of the fruit. Likewise, primary interview respondents said that the market has grown over the past three years and they anticipate the market will remain the same or increase in the coming 18 months.

General growth opportunities include areas where the berry is transformed into a different form such as through juice, concentrate, whole or fresh, and also in wine. Many small online retailers and growers with physical and online retail presence have developed their own line of products made from aronia. However, some of the largest retailers of juice products, such as Dole, Snapple, and especially Ocean Spray have not yet utilized aronia to any great extent if at all. This will take Marketing and education of the health benefits of the aronia.

This same situation is also prevalent with the other main markets for aronia such as wine, jams and jellies, and concentrates. Cranberries currently have a tight hold on these markets with the big companies. Provided there is enough consumer education over time, demand for aronia is predicted to increase. Other specific growth opportunities are in other markets that include candies, salsas, dehydrated powder form, trail/snack mixes, liqueur, and even animal pet food.

We can learn from the experiences of goji, blueberries and cranberries to prepare for what may happen with aronia berries. The major lessons learned are establishing efficient supply chains by forming a co-op will help decrease risk and increase availability to resources. We then use proven economic theory to explain the best strategy moving forward for United States aronia growers. Finally, using the information given and the strategy suggested, FERC recommends aronia growers form a co-op, vertically integrate the production of juice followed by vitamins and supplements. Furthermore, it is a must to aggressively market the aronia berries to help increase demand for new markets and upcoming products.

**Aronia Introduction**

The purpose of this report is analysis the current market of Aronia Berries throughout the world with a focus on what American aronia farmers can do to compete with foreign suppliers. Moreover, this report will study what methods were used with other super fruits to move them from being unknown to well-known. Finally, there will be a recommendation on what aronia berry growers should do going forward.

**Product Uses & Health Benefits**

Aronia's high anthocyanin and polyphenol content yield deep red-dish-purple hues and color with a strong astringent taste. For juice and food processors using aronia for color, aronia can contain up to 2,000 mg/l of anthocyanins. These compounds are also useful in wine making, particularly in dry red wines both for color and astringency. Beverage manufacturers including SoBe®, SunOpta® and Hipp Organics® have included



juice in their products. The berries are also used to make food coloring.

Aronia berries can be canned whole or the juice extracted for jelly making, as well as healthful fruit drinks. The juice contains high levels of anthocyanins and flavonoids. Aronia berries can be eaten fresh off the bush or used in bread, muffins, pies, cookies and other baked goods. They can be used to make tea, aronia wine or blended with grapes or other fruits. Aronia fruit or fruit juice can be used to make jams, jellies, syrup, candy, salsa and barbeque sauce, and to flavor and color yogurt, sorbet, ice cream, milk and other products.

Aronia is the newest 'superfood,' according to the Wall Street Journal. Antioxidant-containing foods are being recommended by doctors and nutritionists as important additions to a healthy diet. Scientists now agree that one of the best ways to protect against aging is to consume a diet rich in fruits and vegetables. Even those who manage to consume the recommended five daily servings of fruits and vegetables may not be obtaining enough antioxidant protection to ward off cancer, cognitive decline and cardiovascular disease. (Cherlet 2008).

Medical research has documented many health benefits of aronia berries. Most of the effects of aronia berries are due to their high antioxidant activity.

Aronia berries top the list of more than 100 foods that have been scientifically tested for antioxidant capacity, according to Dr. Xianli Wu, researcher at the Arkansas Children's Nutrition Center in Little Rock. Other researchers have looked at how aronia affects cardiovascular disease, colon and breast cancers, liver failure and obesity (Sagario 2008).

### Target Market

Bellbrook Berry Farm is interested in the market feasibility of producing and selling aronia berries in Wisconsin and the Midwest.

Market researchers worked to identify the target market, potential customers, estimated market size, and growth/expansion options including, but not limited to:

- Juice
- Wine
- Whole berries
- Concentrates for vitamins and supplements

Market researchers also compiled a list of aronia producers in the United States, contacted aronia producers and conducted interviews with five of them to learn about market trends. Analysts also compiled a list of potential customers for aronia berry products and conducted interviews with 15 representatives to learn about the market need and preferences.

### What Products are Purchased

Potential aronia growers should secure a contract to sell their fruit before planting begins. Marketing of aronia will have to learn from the 'Best practices' of marketing cranberries, since there are synergies between the two products.

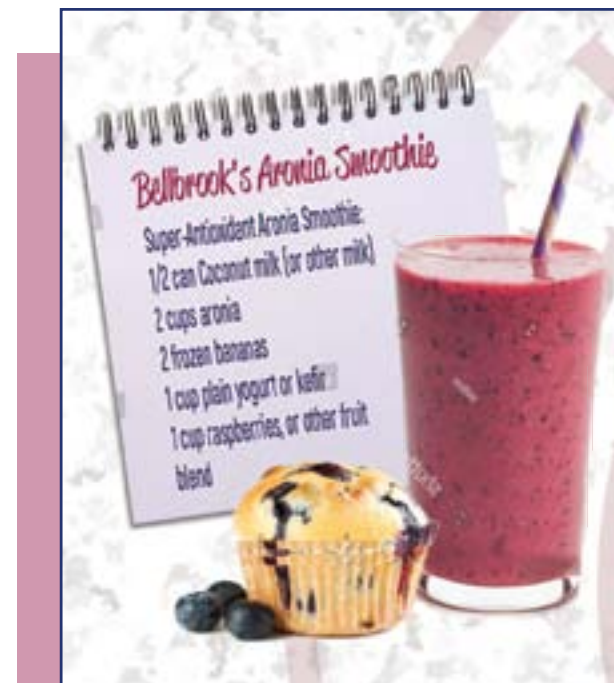
Aronia producers in 12 states work with the Midwest Aronia Association for Marketing assistance and education of the consumers and Buyers of aronia. Other producers operate independently and sell their fruit to other processors and handlers. Most of the Wisconsin aronia crop is sold for processing. Only about 5% of the state crop is sold as fresh fruit. Growing aronia for the fresh fruit market requires additional management skill and great attention to detail.

Aronia berries are available in an array of food products available at Whole Foods and other grocery stores, as well as at Amazon and other online sources. You'll find them frozen, freeze-dried or dried and as syrups, juices (and juice concentrates), extracts, powders, teas and even in wines. You may find jams, jellies and purées at farmers' markets in the Midwest where aronia is produced.

### Nutritional Benefits

- Aronia is 177% higher than Blueberries in Flavanols [4]
- Aronia is 406% higher than Blueberries in Anthocyanins [4]
- Aronia is 429% higher than Blueberries in Proanthocyanidin a powerful antioxidant associated with a number of other potential health benefits is also found in the striatum, a brain structure controlling movement as well as certain memory tasks [6]
- Aronia is 344% higher than blueberries in total Antioxidants [5]

(see last page for reference numbers)



Aronia berries are also used in juice blends, sometimes with apple juice to get the goodness of aronia berries and using the apple juice sweetness to offset the tartness in many of these offerings.

**Purchasers**

15 interviews were conducted with representatives of companies that purchase aronia berries. Those interviewed include representatives from wholesalers, food co-ops, and other firms that either purchased whole berries for processing or

purchased processed aronia product in the form of a concentrate or powder.

**Quantity and Form of Aronia Berries Purchased**

Questions were aimed at determining the quantity and form of the berry purchased by each respondent. Responses to the question of volume purchased varied from as few as 10-20 pounds of berries annually to as much as 80-100 metric tons of concentrate. Specific responses are provided in the table below.

| Interviewed Purchaser Company Name | Form and Volume Purchased Annually  |
|------------------------------------|---|
| Hummingbird wholesale              | 910 pounds of frozen berries  |
| Country View Dairy                 | 30 gallons of concentrate   |
| Irv and Shellys                    | 200 pounds dried and 100 pounds frozen  |
| Organically Grown                  | 20 to 100 cases fresh berries   |
| Northwest Wild Foods               | 20,000 pounds frozen berries  |
| Milne Company                      | Couple of truckloads fresh berries (varies)   |
| Akron Apple and Aronia             | 2,000 pounds fresh and frozen in first year   |
| EncoreFruit                        | No volume given. Buys puree concentrate, juice  |
| Anonymous                          | 5,400 gallons concentrate   |
| FruitSmart                         | 250 to 300 thousand fruit pounds concentrate  |
| SVC USA Washing INC.               | 80 to 100 metric tons concentrate   |
| Willy Street Co-op                 | 1,000 pounds fresh and frozen   |
| Rosebud Botanicals                 | 30 pounds of powder. Also purchases fresh and frozen but did not indicate volume for those. |
| Williamson Street Co-op West       | 520 to 620 pounds frozen berries  |
| Oneota Food Co-op                  | 10 to 20 pounds of fresh berries  |

**Products Purchased**

Frozen whole berries and powdered berries were the most common form for aronia berries to be purchased by the survey respondents. Concentrate (which is often purchased frozen) and fresh whole berries were second most common. Two of the fifteen respondents indicated that they purchase dried or powdered aronia.

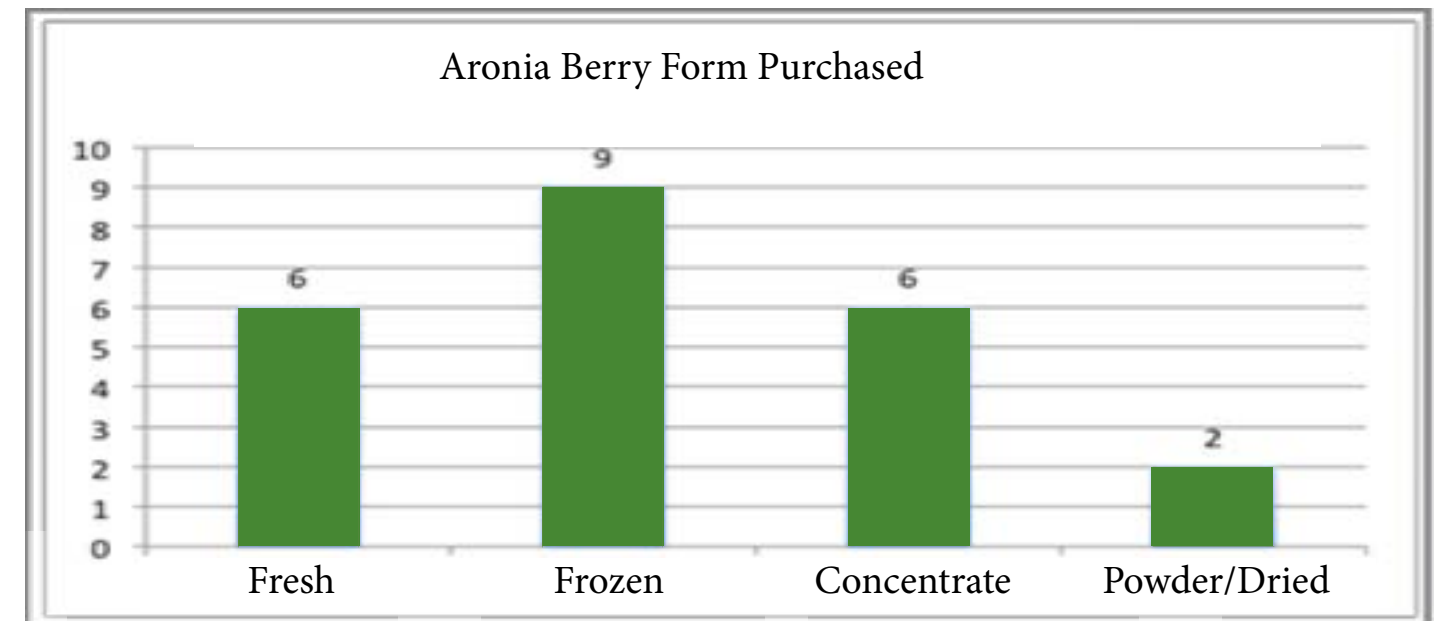
**U.S. Sourced Berries by State**

Two of the fifteen respondents indicated that they do not source aronia berries from the United States.

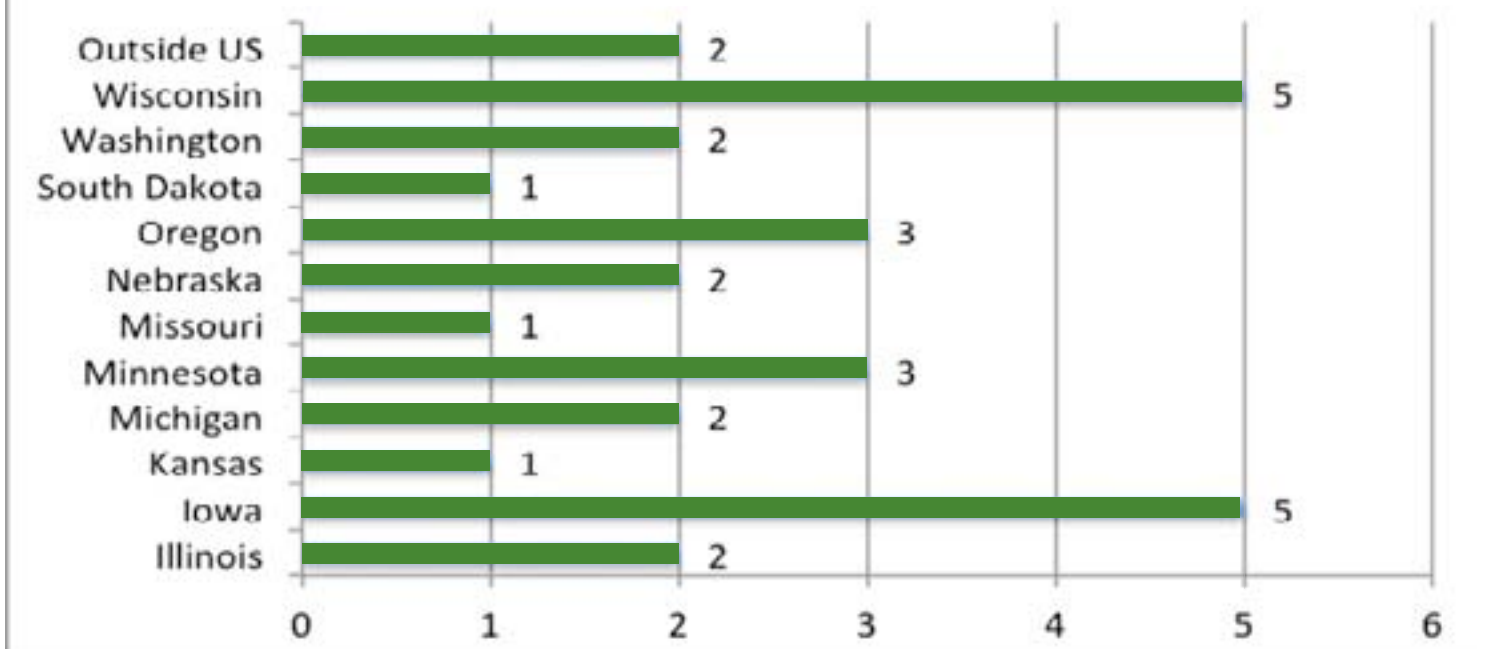
The remaining thirteen respondents selected one or more states as sources. The most common states cited were Iowa and Wisconsin with five each. Minnesota and Oregon followed with three responses each. The graph shows all responses by state.

**Leading U.S. Suppliers**

Responses regarding leading suppliers of aronia berries varied widely with no clear market leader emerging. Many suppliers appear to be local to the purchasers. See responses on page 8.



Location of Suppliers to Survey Respondents



| Interviewed Company Name     | Leading Suppliers Listed               |
|------------------------------|--|
| Hummingbird wholesale        | Buy locally, so Sunset Valley Organics |
| Country View Dairy           | Midwestern farms mainly                |
| Irv and Shellys              | Local aronia berry farms (Illinois)    |
| Organically Grown            | No idea, relatively unknown fruit.     |
| Northwest Wild Foods         | Europe is cheaper.                     |
| Milne Company                | Do not know.                           |
| Akron Apple and Aronia       | Independent growers.                   |
| FruitSmart                   | Poland                                 |
| SVC USA Washing INC.         | Milne                                  |
| Rosebud Botanicals           | Carlisle Farm (Iowa)                   |
| Williamson Street Co-op West | Bellbrook Berry Farms                  |
| Oneota Food Co-op            | UNFI                                   |

Level of Satisfaction with Suppliers



**Projected Market for Aronia Berries**

Market researchers asked, “Within the next 18 months, do you think that your company will be increasing, decreasing or maintaining the amount of aronia berries you purchase?” Overall, most of the firms are either maintaining or increasing the amount of aronia purchased. Many expressed that there needs to be a driving market demand for the product in order to change their supply significantly.

**Projected Change in Purchase Patterns**

The question was asked, “Within the next 18 months, do you think that

your company will be increasing, decreasing or maintaining the amount of aronia berries you purchase?” Overall, most of the firms are either maintaining or increasing the amount of aronia purchased. Many expressed that there needs to be a driving market demand for the product in order to change their supply significantly.

**Supplier Selection Criteria**

Many purchasers indicated that quality, proximity (local), and price were the three main criteria to select suppliers. Others also expressed organic growing practices and the delivery schedule of the product as well as an available supply.



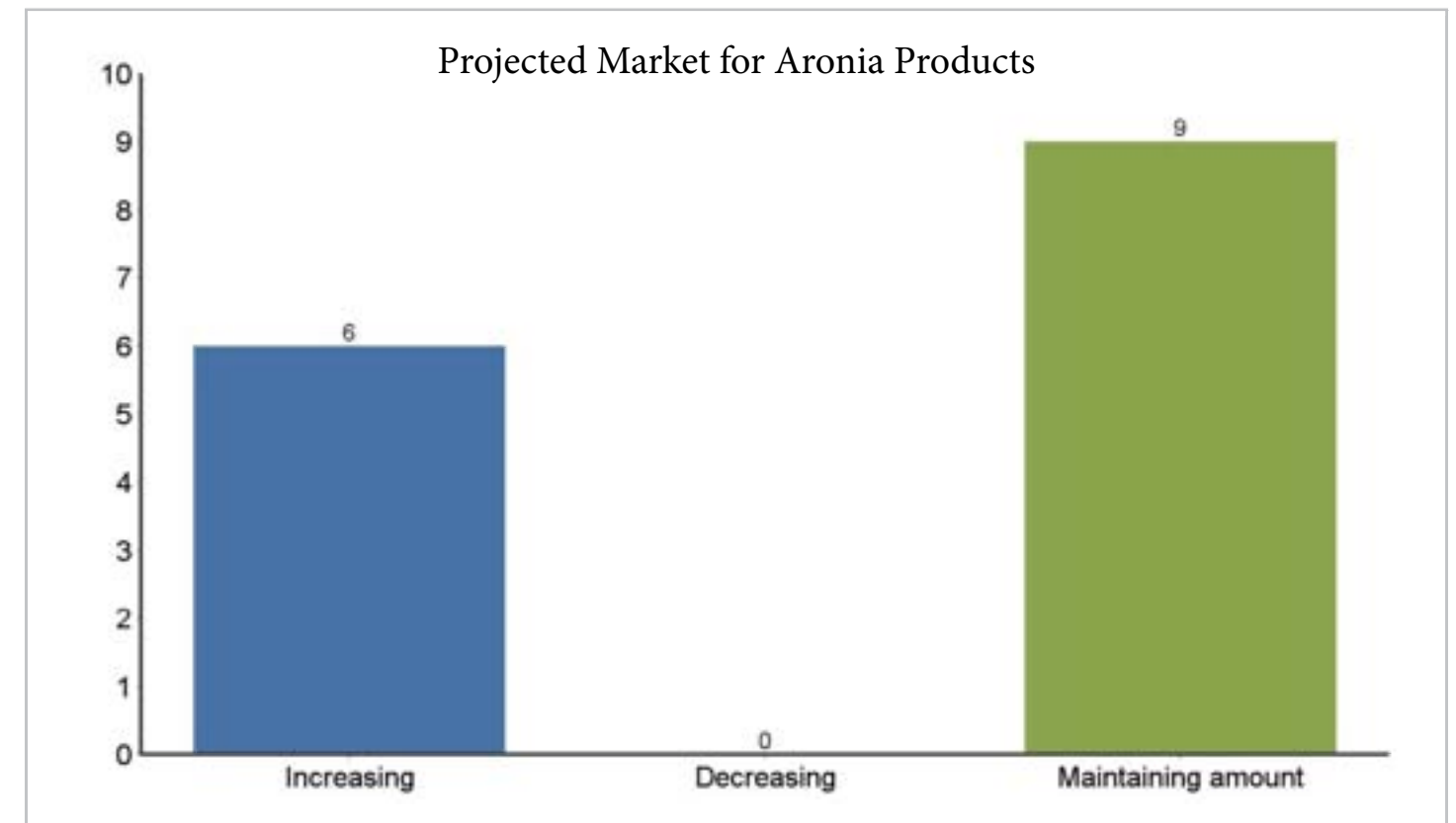
**Trends & Issues Over Next 18 Months**

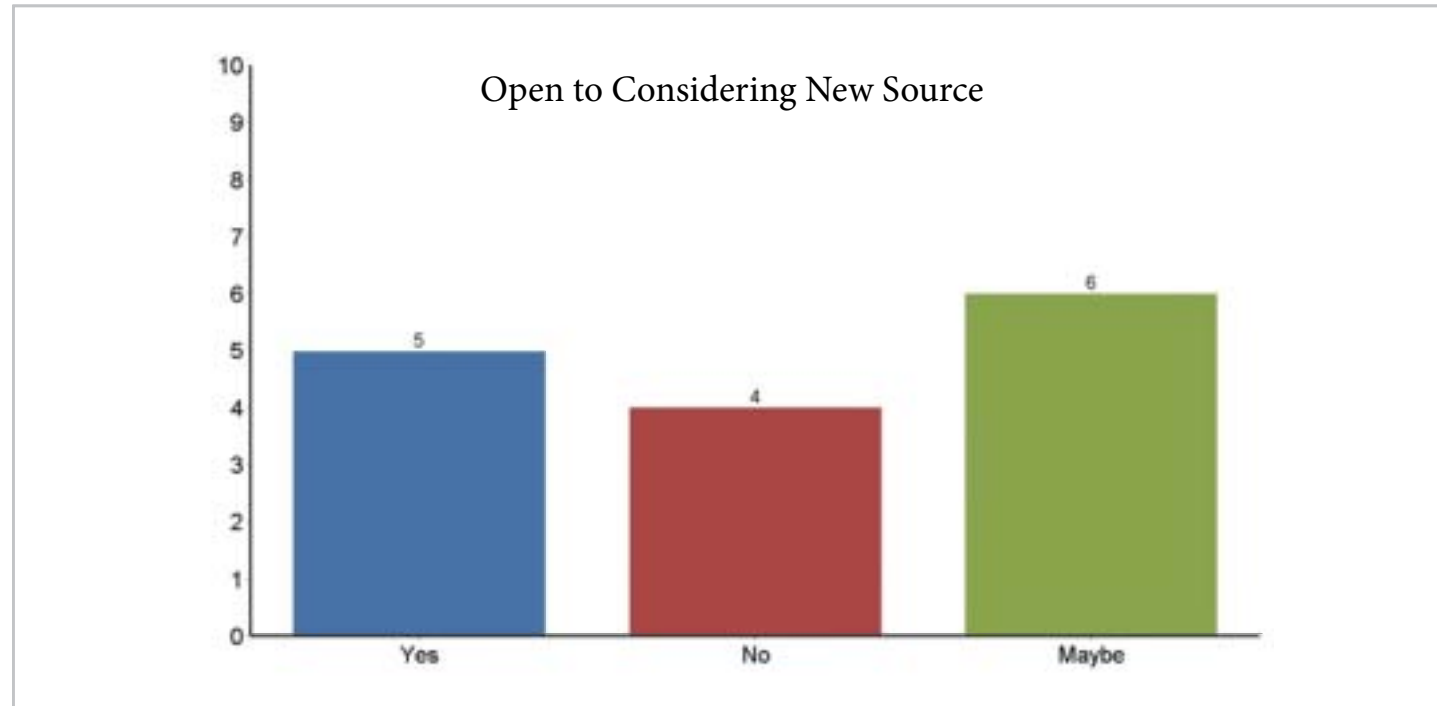
Many of the purchaser's responses point out a need for a driving market demand or awareness of aronia berries, the variety of uses and superior health benefits. Many responses included that there needs to be a "Dr. Oz special" or significant research/report by a reliable source that will educate the consumers. They think that the health benefits and antioxidant properties would drive many people into the aronia berry market. Some said provide consumers with recipes for how to use the berry in different forms would help prevent consumer drop-off due to the

stringent tastes of the whole berry. Some purchasers also expressed that Europe, more specifically Poland, is cheaper to buy from.

**Recent Market Trends**

The question was asked, 'In the past three years what market trends have you noticed for aronia berries? In particular, is demand increasing, remaining the same or decreasing?' All five respondents said that the market has grown in the past three years. Comments provided by survey respondents indicate that they see definite potential with aronia berries but, like some of the purchasers, they thought that there needs to be more





education and press about the berries to attract more acceptance and trial by the consumers. One grower said that health professionals and nutritionists are starting to recognize the health benefits of aronia. Consumers who are extremely health conscious are prime target customers because they are specifically looking for more products that can improve their health and wellness.

The size and production capacity of the aronia farms are recognized as important success factors in this market. One respondent from Star Valley Flowers expressed the opinion that there is not enough acreage dedicated to aronia at this time. He said that there is a supplier in Michigan that is looking for large quantities of aronia, but when analysts

contacted the representative from Graceland Fruit, they did not confirm interest in aronia. In contrast, one respondent said that if better sales results are not seen, producers will start leaving the market. Some growers are still waiting on a big player to get in the game like OceanSpray or Dole.

**What Is Driving Demand**

Growers were asked, What do you think is driving the demand for aronia berries at this time? The main answer across the board from growers was the health benefits and antioxidant levels. Growers also said that people need to know how to prepare it in order for it to be successful since the berry eaten alone is not very appealing. One respondent said that Poland grows aronia because of its high yield per acre.

**Most Popular Product & Emerging Markets**

Growers were asked, In your opinion, what is the most popular aronia product? and What are some emerging markets for aronia? Most growers indicated that the most popular product is either fresh, as concentrate, juice, wine, as well as combining it with other berries. Growers also had differing opinions on some emerging markets for aronia. Concentrate is

popular because it is easy to use and is fairly reasonable. Juice is also very popular. One respondent mentioned cider because aronia is more like an apple than a berry. Another good use is as powdery substance and in dehydrated form. In terms of emerging markets, comments indicated that a liqueur would be interesting. They also could see aronia in chocolate, jams, cakes, candies, bars, beer, and even salsa.

| Company Name                        | City/State          | Revenue   | Employees |
|-------------------------------------|---------------------|-----------|-----------|
| Sawmill Hollow Family Farm          | Missouri Valley, IA | \$1.8M    | 14        |
| Bellbrook Berry Farm                | Brooklyn, WI        | \$0.21M   | 2         |
| Pitspone Farm                       | Kendall Park, NJ    | -         | -         |
| Chokeberry Farms LLC                | Shenandoah, IA      | \$66.31K  | 1         |
| Blazer Farmz LLC                    | Easton, MO          | \$143.03K | 3         |
| Black Squirrel Vineyard and Winery  | Council Bluffs, IA  | \$240K    | 3         |
| SweetAire Farm                      | Darlington, MD      | -         | -         |
| Barham Gardens                      | Blanchardville, WI  | -         | -         |
| Simply Incredible Foods             | Port Edwards, WI    | \$730K    | 6         |
| Meristem Farm and Nursery           | Papillon, NE        | \$82.63K  | 1         |
| Star Valley Flowers                 | Gays Mills, WI      | \$260K    | 6         |
| Aronia Unlimited                    | Minneapolis, MN     | -         | -         |
| Levi's Indigeneous Fruit Enterprise | Keota, IA           | \$72K     | 2         |
| BerryView Orchard                   | Mt. Morris, IL      | \$55K     | 2         |
| Sunset Valley Organics              | Corvallis, OR       | -         | -         |
| Lenz Organic Farms                  | Maquoketa, IA       | -         | -         |
| Henry Fields Nursery                | Aurora, IN          | -         | -         |
| Starck Bros                         | Louisiana, MO       | -         | -         |
| Van Drunen Farms                    | Mommence, IL        | \$103K    | 300       |
| McKay Nursery                       | Waterloo, WI        | \$170K    | 4         |
| Coldbrook Farms                     | Crete, IL           | -         | -         |
| CurrantC                            | Straatsburg, NY     | \$610K    | 5         |

| Industry  | Revenue   | Profit   | Annual Growth 10-15 | Annual Growth 15-20 | Exports | # of Businesses |
|---|-----------|----------|---------------------|---------------------|---------|-----------------|
| Fruit Juices                                    | \$13.6 bn | \$668.4m | 2.3%                | 1.4%                | \$1.0bn | 207             |
| Canned Fruit and Vegetable Production in the US | 42.4 bn   | 1.4 bn   | 0.8%                | 1.4%                | 4.1bn   | 3,308           |
| Nutritional Supplements                         | \$17.6 bn | \$1.7 bn | 6.4%                | 3.0%                | \$709.9 | 1,015           |
| Wineries  | 18.7 bn   | 1.4 bn   | 2.6%                | 3.8%                | \$1.6bn | 5,978           |
| Fruit and Nut Farming in the US                 | 29.0 bn   | 4.6 bn   | 6.4%                | 2.7%                | 12.6bn  | 79,359          |

### Aronia Growers in the United States

The listed companies were identified through the Midwest Aronia Association and other on-line sources. Revenue and employee counts are provided when available through Hoover's business database. Please see previous page for chart.

### Market and Industry Analysis

This industry analysis will provide information and trends on markets relevant to the production of aronia berries. The fifteen interviewed companies fall into one or more of these market segments. The table above depicts the revenue, profit, annual growth rate (2010-2015), annual growth rate (2015-2020), exports, and number of businesses for the researched industries as reported by IBISWorld.

### Best Marketing Practices

Each of the above berries have needed some sort of marketing to get the

word out about them. After forming a co-op, berry growers inform local news organization about what the new berry they are bringing to market. As local interest grows so can efforts to be recognized in a state or regional press outlet. When reaching out to these publications and in all marketing material keywords such as "superfruits" or the ORAC level aronia has compared to other berries can be used to grab views attention. However, marketers must then promote the actual health benefits of aronia for consumers to make the purchase. For example, instead of labeling aronia products "high in antioxidants" marketers should label it heart healthy or reduces risk of heart disease and stroke. It is also important to have a third-party test and label the product for both quality control as well as informing customers the product does what it says. This will also ease consumers' concerns when buying a new food.

### Conclusion

Since the aronia product presents a relatively unknown market, FERC suggests that it would be in the best interest of Bellbrook Berry Farm to join an organization that would be able to provide support to them. Networks such as the *Midwest Aronia Association and Aronia Berry Services of Northeast Iowa* provide valuable resources to growers and marketers of aronia products. A list of resources for cultivation and marketing of aronia berries is provided in the Market Analysis section of this report. For example, Tony Heisterkamp of Akron Apple and Aronia, heads a network of growers across the Midwest where he acts as a wholesale distributor for the farms. Tony is also a part of the National Aronia Growers, which is a marketing arm for the aronia industry.

Another suggestion, as noted in the growth opportunities section, identify large consumer product companies like Ocean Spray, Dole, and Snapple that have not yet produced any aronia related

products. Meetings with these Buyers would be highly recommended to identify how to get aronia added to their product lines/extensions.

Many representatives that were interviewed had common responses that more awareness and education of the berry's health benefits and different uses is needed to gain market acceptance and trials. Focus on gaining relationships with Buyers in the specialty food, health food, beverage and snack food categories is highly encouraged to introduce aronia to broader retail markets.

Forecasting and managing the production and supply chain with a relatively new product offers some challenges in matching potential supply with the level of demand generated. This seems to be a challenge in the aronia industry currently. Bellbrook Berry Farm could excel with their supply chain management and has staying power. The market may see a contraction in supply due to some producers walking away from the market due to the long production cycles and cost of capital investment.



### Key Takeaways

United States aronia growers must form a co-op and begin investment into an efficient supply chain. Both the Blueberry and Cranberry examples show us there is no standard size to a berry co-op, as long as farmers work together unforeseen risk can be decreased. The main objective of the co-op needs to be creating demand for aronia. The marketing must inform consumers of the unmatched health benefits of aronia while keeping in mind the poor taste. To avoid any negative impact of taste, marketing can should be pushed to the alternative forms aronia is produced. The researchers recommends Juice production to be pursued first with vitamins and supplements only pursued if the resources are available.

### Bellbrook Berry Farm

Bellbrook Berry Farm, LLC is a 15 acre farm located in Brooklyn, Wisconsin, with 12 acres devoted to the production of organic aronia berries. William O'Brien and Dale Nelson are the Managing Partners/Owners of the farm. As a family owned business, Bellbrook Berry Farm produces organic, non-GMO, sustainably grown aronia berries. William

and Dale Nelson provide their customers with the highest quality organically produced aronia berries. They focus on quality and customer service. Their berries are grown locally in Wisconsin so they can ensure the highest of quality and maximum freshness.



William O'Brien (right) and Dale Nelson (left), are Managing Partners/Owners of Bellbrook Berry Farm.

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# Contributors Facts

FERC Director with Principal Researcher  
Russell Kashian, Ph.D.  
Professor, UW – Whitewater,

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In Partnership with Principal Researcher  
Cynthia K. Jaggi, Principal  
CEO/Founder of Food to Market, LLC.

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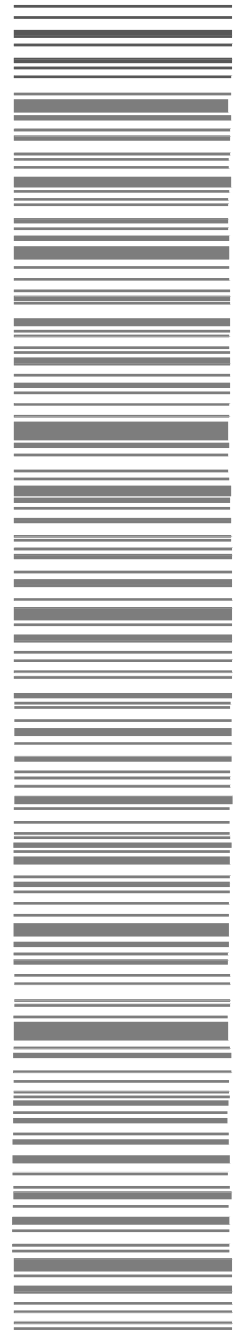
FERC Research Analysts  
Emmett Storts  
Paul Lloyd

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Report Partnership  
William O'Brian, &  
Dale Nelson  
Bellbrook Berry Farm Managing Partners

FERC Graphic Designer  
Taylor McDarison



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