Upper Midwest
Hazelnut
Development Initiative

Selling Hazelnuts to Midwest Consumers

Results of the 2023 Midwest Consumer Survey

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Regional Sustainable Development Partnerships
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American Hazelnut Company

Report Author:
Lead, **Jason Fischbach**, Emerging Crop Outreach Specialist,
University of Wisconsin-Madison Division of Extension

Project Team:
Connie Carlson, Assistant Statewide Director
U of MN Rural Sustainable Development Program

Emma Dempsey, Sales and Marketing Manager
American Hazelnut Company

The **Upper Midwest Hazelnut Development Initiative (UMHDI)** is a collaboration of researchers at the University of Wisconsin and University of Minnesota working with early-adopter growers and stakeholders to develop a sustainable hazelnut industry in the Upper Midwest. *More information about the UMHDI and the work of its researchers and collaborators can be found at* ***midwesthazelnuts.org.***

Contact:
For questions about this report or the UMHDI contact Jason Fischbach at jason.fischbach@wisc.edu.

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Why Midwest Hazelnuts?

Capturing a Share of the $42 Billion (and growing) Nut Economy

Annual global farm gate sales of tree nuts is estimated at $42 billion. Of that, US annual production is valued at $10.1 billion (USDA, 2022). Though there is some commercial hazelnut, walnut, and chestnut production in the Upper Midwest, it is very minor with less than 0.001% of US tree nut production. Hazelnuts can change that. Hazelnuts are native to the Upper Midwest and the new cultivars developed by the UMHDI are widely-adapted to the climate and soils of the region.

Carbon Sequestration, Clean Water, Healthy Soil

The agricultural landscape in the Upper Midwest is dominated by corn and soy production with significant negative soil, water, and climate impacts. Efforts to implement traditional conservation practices to mitigate the externalities have had limited impact. Cover cropping, for example, is utilized on less than 6% of corn/soy fields, despite millions of dollars in incentive payments and decades of outreach education programs (Wallander, et al 2021). Hazelnuts represent a new approach to conservation. They are a foundational species of regenerative agriculture that works to protect the environment *with* agriculture. The extensive perennial root systems of hazelnuts fix carbon in the soil and protect water and soil quality. When grown in agroforestry systems, like alley-cropping, hazelnuts can deliver the full suite of environmental benefits that consumers increasingly want from their food.

A Hazelnut Supply Chain With Competitive Advantages

Hazelnuts in North America are currently limited to the Mediterranean climate of the Willamette Valley of Oregon where land prices are high and competition with other specialty crops is intense. The shrub-type germplasm grown in the Upper Midwest is adapted to the zone 3 climate and soils, creating opportunities to produce hazelnuts on less expensive farmland. In addition, hazelnuts in the Upper Midwest are grown in hedgerows with nuts harvested direct from the shrubs instead of swept off the ground as is done in traditional orchard systems. This allows for a biologically diverse orchard floor that better protects water and soil quality, and it avoids the food safety, costs, and crop loss risks of sweeping nuts off the ground.

Figuring Out How to Market Midwest-Grown Hazelnuts

Hazelnut production in the Upper Midwest began in the 1990s when private breeders began selling seed-origin hybrid hazelnuts (plants grown from seed) to early-adopter growers primarily in Wisconsin and Minnesota. Though these seedlings, on average, have not been productive enough to support commercial production they were sufficient to launch the fledgling industry (Fischbach et al, 2011). Specifically, this plant material formed the basis for the UMHDI's ongoing breeding efforts and the grower-owned processing and marketing company, the American Hazelnut Company.

After more than a decade of work, the UMHDI has developed five high-performing cultivars (UMHDI 1st Generation Selections) that are being propagated for growers to plant. Combined with the modest production from the original seedling plantings, a Midwest hazelnut industry is starting to form.

Hazelnuts have not been produced in the Midwest historically and consumers don't regularly eat them. In fact, the US has one of the lowest per capita hazelnut consumption rates in the developed world. If Midwest consumers have eaten hazelnuts it's in Nutella®, chocolate candies, coffee flavoring, or an occasional in-shell nut during the holidays. This compares to Europe and Turkey where hazelnuts are regularly consumed. Thus, for the Midwest industry to be successful the growers and value-added processors need to figure out how to sell hazelnuts to consumers that don't regularly eat them.

The UMHDI was awarded a three-year USDA-LFPP grant in 2021 to conduct a three phase project to better understand Midwest consumers and how to market hazelnuts to them. Phase 1 was an analysis of the Midwest hazelnut market through a literature review of publicly available consumer data (ie, data and reports not behind a paywall). The report "**Selling Midwest Hazelnuts During Industry Establishment**" provides the findings. Phase 2 is a direct survey of Midwest consumers with results compiled in this report. The goal of this research is to better understand how consumers currently consume hazelnuts, which attributes of Midwest-grown hazelnuts are most appealing, and which group of consumers to target for product development, branding, and marketing. Using this information, Phase 3 will then develop a brand plan for Midwest hazelnuts generally and the American Hazelnut Company, specifically.

Consumer Survey Methods

	In-Network	Commercial
Average Age	45.6	42.2
Age Standard Deviation	14.8	15.2
Percent with More Than Two In Household	36.3	50.8
% With Kids Under 18 at Home	19.6	39.1
Percent with $75k+ Household Income	53.6	40.8
Percent with Bachelor's Degree or More	79.4	48.3
Percent "Very" or "Extremely" Familiar with Midwest Hazelnuts	40.5	7.2

Figure A. Summary statistics of the two survey groups. More detailed information is in Appendix 1.

The online Hazelnut Consumer Survey (Appendix 2) was distributed in two ways. First, an invitation to take the survey was sent via email and social messaging to lists and followers of the authors of this report. As such, these respondents were likely to already know about the Upper Midwest Hazelnut Development Initiative, Midwest-grown hazelnuts, and/or have already eaten products made by the American Hazelnut Company. However, the invitation also encouraged the sharing of the invitation to friends, family, and social networks so not everyone in the group was necessarily aware of Midwest-grown hazelnuts. This “In-Network” group had 194 total respondents. Second, the survey was sent out to a list generated by the commercial survey service, Survey Monkey. In this report, they are referred to as the “Commercial” group. There were 404 total respondents.

In general, as shown in Figure A, the In-Network group was slightly older, was less likely to have kids at home, had higher household income, had more formal education, and was more aware of Midwest hazelnuts. Appendix 1 shows the detailed demographic data of each survey group. Though there are clear differences in the demographics between the two groups, neither group at large should necessarily be the target market for selling hazelnut products. Instead, the purpose of this survey is to determine which attributes of Midwest hazelnuts are most important to consumers, especially values-based attributes that can be used in branding.

SURVEY RESULTS

Who Eats Nuts?

How Often?		#	%
Often	At least once or twice a day	40	6.7%
	Almost daily	111	18.6%
	Every few days	109	18.3%
	About once or twice a week	102	17.1%
Seldom	About once or twice a month	81	13.6%
	Sometimes, but not very often	113	18.9%
	Only on special occasions	23	3.9%
Never	NEVER – I don't like nuts.	12	2.0%
	NEVER – I'm allergic to nuts.	6	1.0%
Total (n)		597	

Figure 1. How often survey respondents consume nuts.

As shown in Figure 1, 60% of respondents reported eating nuts at least once or twice a week and only 3% reported never eating nuts. Figures 2-5 combine the more detailed frequency responses into Often, Seldom, and Never categories as shown in Figure 1. Roughly the same percentage of men and women reported eating nuts at least once a week suggesting that nut consumption is not gender specific (Figure 2). The percentage of respondents that eat nuts "often" increases with age, with 74% of those over 60 eating nuts at least once a week compared to 45% of those between 18 and 29 (Figure 3). The correlation between household income and frequency of nut consumption is not as strong as the age correlation, but Figure 4 does suggest that those with higher household income eat nuts more often. However, even 51% of those with incomes less than $25k per year reported eating nuts at least once per week. The respondents with at least a Bachelors degree reported eating nuts more often than those with less than a Bachelors degree (Figure 5). Though older respondents with more formal education tended to have higher household incomes (data not shown), it is not clear from the data whether the higher income is why the older age classes eat nuts more often.

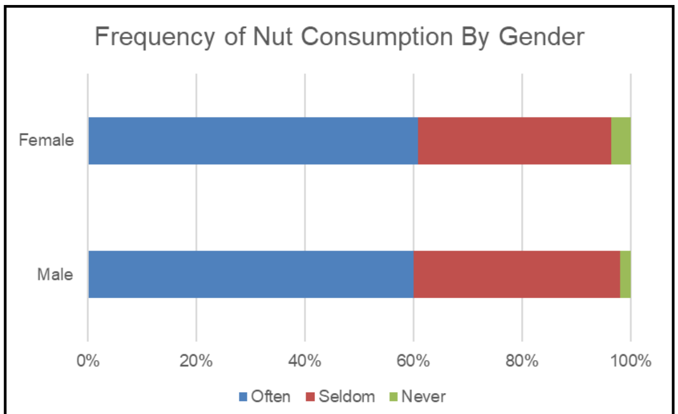


Figure 2. The frequency of nut consumption by gender (n=580)

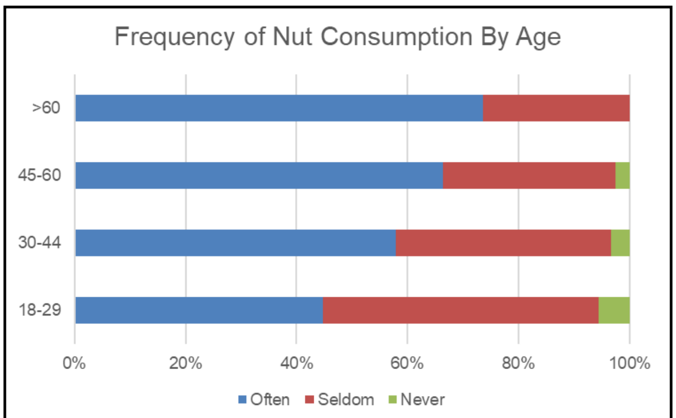


Figure 3. The frequency of nut consumption by age (n=567).

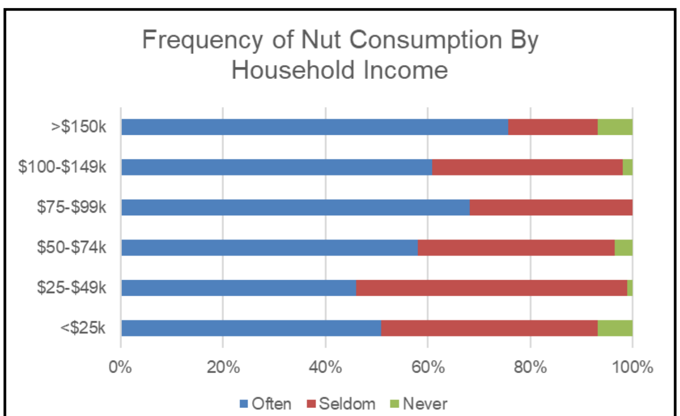


Figure 4. The frequency of nut consumption by household income (n=536).

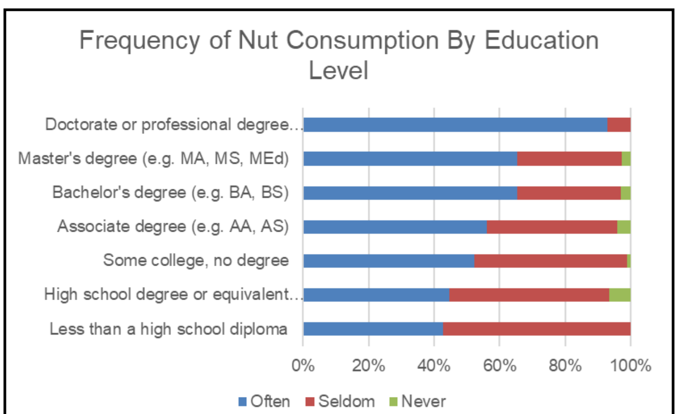


Figure 5. The frequency of nut consumption by amount of formal education (n=597).

Who Likes Hazelnuts?

Survey participants were asked to rank the nine types of nuts shown in Figure 6 from 1 to 9 with 1 being their favorite. Cashews ranked the highest and chestnuts the lowest with hazelnuts toward the bottom with an average rank of 5.5. The survey did not ask how often the respondents consumed each of the nuts listed, so it's not clear whether the lower ranked nuts are actually preferred less or there is just less familiarity with those nuts.

	Average	StDev
Cashews	3.8	2.6
Pistachios	4.2	2.5
Peanuts	4.3	2.6
Pecans	4.3	2.3
Almonds	4.5	2.4
Walnuts	5.1	2.2
Hazelnuts	**5.5**	2.3
Macadamia	5.9	2.2
Chestnuts	7.4	2.0
n=	**584**	

Figure 6. Average ranking of nine different nut types. 1 is most preferred, 9 is least preferred.

The average hazelnut ranking was between 5 and 6 across all the different demographic groups—men or women, young or old, high incomes or low incomes, the ranking was the same. There was, however, a difference in hazelnut ranking between the two survey groups. The average hazelnut ranking of the In-Network group was 4.5 and the Commercial group was 6.0 (data not shown). This suggests that with more familiarity, consumers will rank hazelnuts higher on their nut preference list. This is consistent with anecdotal evidence that most consumers like hazelnuts when given the opportunity to consume them.

Though Figure 6 is interesting, it isn't particularly useful for developing a branding strategy for hazelnuts. That said, the fact that the sweetest nut (cashews) is the most preferred does suggest that sellers might want to focus on selling the sweeter varieties of hazelnuts—or at least conduct tasting trials to determine if, in fact, consumers like a sweeter hazelnut.

Of the 584 respondents to the nut ranking question, 204 (35%) ranked hazelnuts either their 1st, 2nd, 3rd, or 4th favorite nut. These 204 people would be a logical target customer group so it's useful to learn more about them. Figure 7 shows the percentage of each gender-age group that ranked hazelnuts 1-4. Men were slightly more likely to rank hazelnuts in their top 4 than women (35% compared to 31%). Consistent with the data in Figure 3, both older men and women were more likely to rank hazelnuts in their top 4, though the trend is not as strong as in Figure 3. The 22% of men over 60 may be an outlier due to the lower sample size, however, it is a trend worth exploring further as it is possible men over 60 don't prefer hazelnuts for some reason. A slightly higher percentage of those with more education and higher household incomes ranked hazelnuts in their top 4, however, the differences were small (data not shown).

	#	n	%
Female	117	375	31.2%
18-29	24	81	29.6%
30-44	28	113	24.8%
45-60	37	104	35.6%
> 60	17	52	32.7%
Male	68	193	35.2%
18-29	9	29	31.0%
30-44	34	88	38.6%
45-60	19	53	35.8%
> 60	4	18	22.2%

Figure 7. The percentage of each age group that ranked hazelnuts 1st, 2nd, 3rd, or 4th favorite.

Taken together, the data suggest there is no specific demographic group looked at in this survey (age, gender, education, household income) that has a significantly stronger preference for hazelnuts over another group.

Which Hazelnut Products Have Consumers Tried?

Figure 8 shows the percentage of respondents that have consumed each of the listed hazelnut products. The vast majority of respondents have consumed Nutella (79%) and 50% have consumed hazelnut-flavored coffee creamer. The fact that less than 30% of respondents have eaten raw or roasted hazelnuts may be a reason why the nut preference ranking was as low as it was. If respondents had consumed hazelnuts it was as an inclusion in a food product. Clearly, there is not as much familiarity with hazelnut kernels, oil, or flour, indicating both a marketing opportunity and a challenge. Not surprisingly, the In-Network group had tried a wider range of hazelnut products than the Commercial group, due likely to having tried the American Hazelnut Company's kernel, oil, and flour products (Figure 9)

Hazelnut Product	#	%
Nutella (brand-name chocolate-hazelnut spread)	468	78.8%
Hazelnut-flavored coffee creamer	299	50.3%
Other product made with hazelnuts and chocolate	235	39.6%
Other chocolate-hazelnut spread (not Nutella)	235	39.6%
Hazelnut kernels (raw or roasted)	165	27.8%
Hazelnut oil	129	21.7%
Hazelnut meal/flour	89	15.0%
Hazelnut milk	70	11.8%
Flavored hazelnut kernels	57	9.6%
None of the above	31	5.2%

Figure 8. The percentage of respondents that have tried each of the listed hazelnut products.

Hazelnut Product	In-Network	Commercial
Nutella (brand-name chocolate-hazelnut spread)	85.6%	75.2%
Hazelnut kernels (raw or roasted)	55.7%	14.4%
Other product made with hazelnuts and chocolate	53.6%	32.7%
Hazelnut-flavored coffee creamer	51.0%	50.0%
Other chocolate-hazelnut spread (not Nutella)	47.4%	36.1%
Hazelnut oil	38.7%	13.6%
Hazelnut meal/flour	30.4%	7.7%
Flavored hazelnut kernels	18.6%	5.2%
Hazelnut milk	10.3%	12.4%
None of the above	2.1%	6.9%

Figure 9. The percentage of In-Network and Commercial respondents that have tried the listed hazelnut products.

Figure 10 shows the percentage of each age group that had tried the listed hazelnut products. Interestingly, the percentage of respondents that had eaten hazelnut kernels increased with age, possibly due to mixed in-shell nuts being more commonly consumed 20-30 years ago and thus more familiarity with hazelnuts. Conversely, more young people have tried hazelnut milk than older people.

Which Hazelnut Products Do Consumers Want to Try?

Figure 11 shows the percentage of respondents in each age class that want to try each of the listed products. The data in the figure suggest there may be reasons to market certain products to certain age groups. For example, 45% of respondents in the 18-29 age class want to try hazelnut milk, compared to only 21% of the over 60 group. Though the differences aren't as great, the same is true for hazelnut oil and hazelnut flour/meal. Conversely, the older age classes seem more interested in "other products made

Hazelnut Product	18-29	30-44	45-60	> 60
Nutella (brand-name chocolate-hazelnut spread)	80.0%	81.8%	73.3%	76.4%
Hazelnut-flavored coffee creamer	54.4%	55.0%	47.2%	37.5%
Other chocolate-hazelnut spread (not Nutella)	48.0%	43.1%	33.5%	31.9%
Other product made with hazelnuts and chocolate	37.6%	38.3%	39.8%	36.1%
Hazelnut oil	25.6%	18.2%	25.5%	13.9%
Hazelnut kernels (raw or roasted)	16.0%	25.8%	31.1%	36.1%
Hazelnut meal/flour	15.2%	13.4%	17.4%	9.7%
Hazelnut milk	15.2%	13.9%	8.7%	5.6%
Flavored hazelnut kernels	6.4%	8.6%	13.0%	6.9%
None of the above	4.0%	4.8%	8.1%	4.2%

Figure 10. The percentage of respondents in each age class that have tried the listed hazelnut products.

with hazelnuts and chocolate" than the younger age classes.

Hazelnut Product	18-29	30-44	45-60	> 60
Hazelnut milk	44.8%	34.0%	34.8%	20.8%
Hazelnut oil	37.6%	33.5%	30.4%	26.4%
Hazelnut meal/flour	32.8%	31.1%	22.4%	19.4%
Hazelnut kernels (raw or roasted)	27.2%	28.7%	21.7%	22.2%
Other product made with hazelnuts and chocolate	25.6%	28.7%	29.2%	36.1%
Flavored hazelnut kernels	20.0%	27.8%	23.0%	16.7%
Other chocolate-hazelnut spread (not Nutella)	19.2%	22.0%	23.6%	13.9%
Hazelnut-flavored coffee creamer	18.4%	16.3%	9.3%	6.9%
Nutella (brand-name chocolate-hazelnut spread)	16.8%	22.0%	9.3%	11.1%
None of the above	8.8%	15.8%	19.9%	19.4%

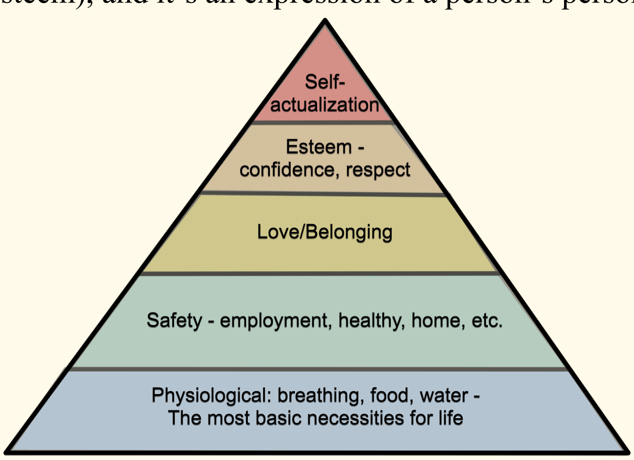
Figure 11. The percentage of each age group that wants to try each of the listed products.

The low overall percentages of respondents wanting to try the products at face value suggest interest in any of these products is not particularly strong, but this is likely a result of how the survey was designed. This question about which products respondents would like to try was preceded by the question about which products they had already tried. Thus, respondents may have not clicked hazelnut oil, for example, as a product they would like to try if they had already tried it, which is why Figure 11 is roughly the inverse of Figure 9.

Marketing, Branding, and Maslow's Hierarchy of Needs

There are as many theories of marketing as there are mousetraps, but a common theme to all is providing a product that meets one or more needs of a target consumer. In other words, what problem does the product solve for the consumer….and not just consumers in general, but the problem of a specific consumer. Harold Maslow proposed a hierarchy of needs that all humans seek to fill. The more the needs are met the happier and more fulfilled the person. Thus, the theory goes, the more needs of an individual consumer that are fulfilled by a product or service the more likely that consumer will buy it. Selling a food product using this model starts with creating a product that meets the caloric needs of the consumer—pretty easy to do. Selling food as food, however, usually isn't enough and that's where branding comes in. The goal of branding is to convey to consumers how the product or service meets the other needs in the pyramid. To use hazelnuts as an example, they can be branded as providing safety by being healthy to eat. Or, eating Midwest hazelnuts can be a form of belonging by being part of a movement to do good for the environment or to "think global, act local".

Ultimately, the goal for any product (or service or idea) is self-actualization, where the product becomes part of the consumer's identity. In other words, the consumer can't be who they are without that product. Maybe the best current example of this is Tesla. Driving a Tesla is more than just getting from A to B. It's about being part of the climate change solution (belonging), it's about being avant garde, hip, and cutting edge (self-esteem), and it's an expression of a person's persona and how they think of themselves in the world (self-actualization). So, how should Midwest hazelnuts be branded such that a critical mass of consumers become just as committed to them as Tesla owners are to their Tesla, Packers fans are to their Packers, and Trekkies are to their Star Trek? Unfortunately, there is no easy answer….but there is a first step…..talking to consumers to understand how hazelnuts can meet their needs.



Which Characteristics of Midwest Hazelnuts Are Important to Consumers?

Healthy	Hazelnuts are regarded as being healthy to eat. They are high in protein and a good source of omega-3 fatty acids. They are high in antioxidants and have compounds which can help lower inflammation, cholesterol, and cancer risk. Do these factors make you more or less likely to purchase Midwest hazelnuts?
Environmentally Friendly	Hazelnuts are very environmentally friendly. They are a perennial crop, meaning they grow back year after year. They require little to no fertilizer, and their roots protect soil and water quality. Do these factors make you more or less likely to purchase Midwest hazelnuts?
Climate Friendly	Midwest hazelnuts show promise at fighting climate change. They are drought resistant, provide numerous ecological services to ecosystems, and help sequester carbon. Do these factors make you more or less likely to purchase Midwest Hazelnuts?

Hazelnut *growers* in the Midwest view hazelnuts as a means to improve nutrition, protect soil and water quality on agricultural lands, and help reduce climate change. But, are these attributes important to *consumers*? The survey asked respondents whether each of the three statements in the box above made them more or less likely to purchase Midwest hazelnuts. Seventy-two (72) percent of respondents said the health attributes made them somewhat or much more likely to purchase Midwest hazelnuts. Seventy-two (72) percent of respondents were somewhat or much more likely to purchase hazelnuts because they are environmentally friendly. Though the climate-friendly attributes were important to the majority of respondents, they were less motivating as only 66% of respondents were much or somewhat more likely to purchase Midwest hazelnuts because of the climate benefits. If looking at just the "much more likely" response, it appears the environmental attributes of hazelnuts are more motivating than the health or climate attributes.

	Healthy		Environmentally Friendly		Climate-Friendly	
	#	%	#	%	#	%
Much more likely	177	29.6%	222	37.4%	199	33.4%
Somewhat more likely	252	42.2%	208	35.0%	193	32.4%
No difference	126	21.1%	128	21.5%	167	28.0%
Somewhat less likely	27	4.5%	25	4.2%	26	4.4%
Much less likely	15	2.5%	11	1.9%	11	1.8%
n=	**597**		**594**		**596**	

Figure 12. How likely respondents are to purchase Midwest hazelnuts due to each attribute.

Do Consumers Care That Midwest Hazelnuts Are Environmentally Friendly?

These data do support the grower's inclination to promote the environmentally-friendly attributes of Midwest-grown hazelnuts. But, other factors influence purchasing decisions such as price, flavor, and product quality. The survey asked respondents to rank the importance of the factors shown in Figure 13 when purchasing nuts with 1 being most important. Despite a large majority saying environmental benefits would make them more likely to purchase Midwest hazelnuts (Figure 12), it is clear from Figure 13 that such benefits are the least important factor affecting nut purchasing decisions. Flavor, price, and quality were ranked

	Ave. Rank
Flavor	2.7
Price	2.9
Quality	3.0
Availability	4.0
Local	4.5
Environmental Benefits	4.7

Figure 13. Average ranking of factors considered when purchasing nuts. 1=most important, 7=least important.

as more important.

Figure 13 is the average of all respondents. To probe further, the survey asked respondents to indicate how often they try to eat foods that are locally-grown, environmentally friendly, and/or healthy. As is shown in Figure 14, more than 80% of respondents always or sometimes tried to purchase healthy, local, or sustainable. This would suggest, then, that those that "Always" try to eat sustainably grown foods would rate the "Environmentally-Friendly" factor affecting their nut purchasing as more important than those that only "sometimes" or "never" try to eat sustainably grown foods. As shown in Figure 15, this is, in fact, the case. However, even among those that "Always" try to eat sustainably, flavor, quality, and price are still more important factors affecting purchasing decisions, on average.

	Healthy	Local	Sustainable
Always	38.5%	22.1%	23.3%
Sometimes	60.8%	71.6%	64.7%
Never	0.7%	6.4%	11.4%
Total (n)	**597**	**580**	**576**

Figure 14. The percentage of respondents that always, sometimes, or never try to purchase foods that are healthy, local, or sustainable.

Importance of Factors When Purchasing Nuts	I Try to Eat Foods That Are Sustainably Grown	
	Always	Sometimes/Never
Flavor	2.8	2.7
Quality	3.0	2.9
Price	3.7	2.7
Locally Grown	3.8	4.7
Environmentally-Friendly	4.0	4.9
Availability	4.3	3.8

Figure 15. Average ranking of the importance of the factors listed when purchasing nuts for respondents that Always or Sometimes/Never try to eat foods that are sustainably grown.

Do Midwest Consumers Care That Midwest Hazelnuts Are Produced Locally?

As shown in Figure 14, more than 90% of respondents said they "Always" or "Sometimes" try to purchase foods that are locally produced. As is the case for the environmental benefits, even among those that try to "Always" purchase local, flavor and quality are more important factors influencing their purchasing decisions (Figure 16).

Importance of Factors When Purchasing Nuts	I Try to Eat Foods That Are Locally Grown	
	Always	Sometimes/Never
Flavor	2.7	2.7
Quality	2.8	3.0
Locally Grown	3.7	4.7
Price	3.7	2.7
Environmentally-Friendly	4.2	4.8
Availability	4.2	3.9

Figure 16. Average ranking of the importance of the factors listed when purchasing nuts for respondents that Always or Sometimes/Never try to eat foods that are locally grown.

Taken together, the data suggest that although the values-based attributes of environmental and local are appealing to consumers, those attributes alone are not enough. Hazelnut producers should focus on producing high quality products with excellent flavor that meet the desires and needs of the consumer.

The example of the local tomato is a good one, as it is symbolic of why "local" has been a successful marketing strategy. Producers promote the importance of buying local as a means to support local farmers. Consumers will say they too support local, but at the end of the day, consumers purchase local tomatoes only when they have better flavor and higher quality than imported tomatoes. Local sells…..when local equates to better quality, flavor, or price.

Do Consumers Care Which Species of Hazelnut Their Hazelnuts Come From?

The vast majority of global hazelnut production comes from cultivars of European hazelnut (*Corylus avellana).* Though it might someday change, right now there are no European hazelnut cultivars suitable for widespread commercial production in the Midwest due mainly to susceptibility to a native fungal pest called Eastern Filbert Blight and susceptibility to winter injury. European hazelnut is not native to the Midwest. Instead, hazelnut production in the Midwest currently comes from American hazelnut (*Corylus americana)* or from progeny from crosses between European and American hazelnut, what growers refer to as "hybrid hazelnuts". American hazelnut is native to the Midwest and is found in large wild stands primarily in northern Wisconsin and Minnesota. It is generally not considered suitable for commercial production because the nuts are tiny with very thick shells. Work is underway to find and breed for American hazelnuts that have larger nuts, but the effort to improve nut size with hybrids is much further along, which means Midwest growers will be selling hazelnuts from hybrid plants for years to come.

There continues to be debate within the Midwest grower community about the use of hybrids instead of pure American hazelnut. There is some concern traits from the hybrids could move into wild American hazelnut populations, but there is also concern that using hybrids could make Midwest hazelnut production less "local" and, thus, be less appealing to consumers.

The survey asked the following question: "*The new Midwestern hazelnut variety was created by breeding wild hazelnuts native to the Midwest with other varieties of hazelnuts. To you, how important is it that the new Midwestern hazelnuts are partly made from native species?"*

	In-Network		Commercial	
	#	**%**	**#**	**%**
Extremely important	38	19.6%	20	5.0%
Very important	56	28.9%	59	14.6%
Moderately important	65	33.5%	134	33.3%
Slightly important	28	14.4%	108	26.8%
Not at all important	7	3.6%	82	20.3%
n=	**194**		**403**	

Figure 17. The importance of hazelnuts coming from native hazelnut species.

Forty-nine (49) percent of the In-Network and only 20% of the Commercial group thinks it's extremely or very important that Midwestern hazelnuts are partly made from native species. This suggests the issue may not be particularly important to consumers overall, however, there are clearly some consumers that feel very strongly about it, which likely means there are market opportunities for those growing American hazelnuts. But, as with the environmental and local attributes, it's unlikely consumers will purchase hazelnut products simply because they are made from American hazelnuts. Such products will still need defensibly superior flavor, quality, and/or pricing.

What is the Best Way to Market and Sell Midwest-Produced Culinary Hazelnut Oil?

Hazelnut oil is an attractive value proposition for growers and the Midwest industry. It has a very similar chemical composition to olive oil with 75-80% oleic acid and high vitamin E, but it has a slightly higher smoke point than olive oil making it a more adaptable culinary oil. Current hazelnut production in the Midwest is from genetically diverse plantings of hybrid hazelnuts, which means the kernels have widely different flavors, size, and shapes. This means mixing them all together and pressing them for oil can be easier than trying to meet narrow specifications of a confectionary market, for example. However, it is unclear how best to market hazelnut oil and even more specifically, Midwest hazelnut oil.

The survey asked respondents a series of questions specific to hazelnut oil:

Hazelnut oil is high in vitamin E and antioxidants, which helps protect against cancer. It has a higher smoke point than most cooking oils, and has a very light flavor. Which of these factors make you MORE LIKELY to purchase hazelnut oil?

	High Vitamin E	Higher Smoke Point	Light Flavor
More likely	50.3%	47.4%	49.6%
No difference	44.9%	46.5%	43.3%
Less likely	4.9%	6.1%	7.1%
n=	597	559	552

Figure 18. The likelihood respondents will purchase hazelnut oil because of high vitamin E, a higher smoke point, and a light flavor.

Averaged across all the respondents, none of the three attributes listed are more appealing than another. Further, only roughly 50% of respondents are “more likely” to purchase hazelnut oil for any one of these attributes. Of just the respondents that had tried hazelnut oil, 46%, 52%, and 57% were “more likely” to purchase hazelnut oil due to the light flavor, high vitamin E, and higher smoke point. This suggest that perhaps there is potential to market hazelnut oil as “an olive oil with a higher smoke point”.

How likely are you to purchase hazelnut oil as a locally-sourced alternative to olive oil?

	In-Network	Commercial
Likely	24.7%	11.9%
Somewhat likely	49.0%	33.1%
Neither likely nor unlikely	16.5%	35.8%
Somewhat unlikely	6.7%	10.7%
Unlikely	3.1%	8.5%
n=	**194**	**402**

Figure 19. The likelihood respondents purchasing hazelnut oil as a local alternative to olive oil.

As shown in Figure 19, 74% of In-Network and 45% of Commercial respondents said they were “likely” or “somewhat likely” to purchase hazelnut oil. Of those that said they were “likely to purchase hazelnut oil, 34% said it was “extremely important” or “very important” that hazelnuts come from native species, 71% said the health benefits of hazelnuts made them “much more likely” to purchase Midwest hazelnuts, 81% said the environmental benefits of Midwest hazelnuts made them “much more likely” to purchase hazelnuts, and 43% said they “always” try to purchase local foods. Taken together, this suggests that promoting the health, environmental benefits, and smoke point of Midwest hazelnut oil may be more effective than promoting it as locally produced.

Conclusion

This survey confirmed that most Midwestern consumers (even those with some familiarity with Midwest hazelnuts) are not regular consumers of whole hazelnuts, hazelnut oil, or hazelnut meal. Instead, they typically have only eaten hazelnuts as a flavoring (inclusion) with chocolate or coffee products. Clearly, there is potential to market the environmental benefits, “localness”, and healthy benefit attributes as the “why” of Midwest hazelnuts, but first more consumer research needs to be done to figure out what basic needs consumers have that can be met by specific hazelnut products. Selling hazelnut oil as olive oil but with a better smoke point is an example of meeting a need. What other problems are there that hazelnuts can solve?

Appendix 1. Demographics and Characteristics of the Two Survey Groups

Gender. Both survey groups are predominantly female with the Commercial group more so than the In-Network group (Figure 1). The larger percentage of those reporting non-binary gender in the In-Network group is reflective of the In-Network survey methodology. The In-Network survey invitation was shared via email and social media outlets, which means the respondents are likely multiple communities (or nodes) of people, such as friend groups. This likely explains the higher percentage of non-binary respondents in the In-Network group compared to the Commercial group.

Age. The age ranges of both survey groups are similar with a good distribution of ages for both groups (Figure 2).

Household Size. The Commercial group has more people in their households with 51% having three or more in the house as compared to 26% (Figure 3) This suggests the In-Network group has more retirees with empty nests or more young people without kids. However, the age distributions of the two groups are very similar so its unclear why the household size tends to be smaller in the In-Network group.

Kids at Home. Consistent with the smaller household size, only 20% of the In-Network group has kids under 18 at home compared to 39% of the Commercial group (Figure 4).

Education Level. Figure 5 shows the education level of the two survey groups. The In-Network group has had more formal education with 79% of respondents having a Bachelor's degree or more compared to 48% of the Commercial group respondents.

Household Income. The In-Network group has a higher household income than the Commercial group with 54% of the In-Network respondents making $75k or more compared to 41% of the Commercial respondents.

Demographic Summary. In general, the In-Network group tends to be older, less likely to have kids at home, have more formal education, and have a higher household income than the Commercial group. Despite these differences, they only matter if hazelnut products, marketing, and branding are targeted to this specific group of respondents. Instead, the differences are more reflective of the demographics of the UMHDI audience—those that are on the mailing lists and following the social media feeds of the UMHDI and its followers.

	In-Network		Commercial	
Gender	**#**	**%**	**#**	**%**
Female	112	57.7%	271	67.6%
Male	71	36.6%	127	31.7%
Non-binary	11	5.7%	2	0.5%
Not Reported	0	0.0%	1	0.2%
Total (n)	**194**		**401**	

Figure 1. Reported gender of respondents in the In-Network and Commercial groups.

	In-Network		Commercial	
Age range	**#**	**%**	**#**	**%**
18-29	33	19.2%	92	23.3%
30-44	68	39.5%	141	35.7%
45-60	51	29.7%	110	27.8%
>60	20	11.6%	52	13.2%
Total (n)	**172**		**395**	

Figure 2. Reported age of respondents in the In-Network and Commercial groups.

	In-Network		Commercial	
Household size	**#**	**%**	**#**	**%**
1	37	19.1%	68	17.1%
2	106	54.6%	128	32.2%
3	19	9.8%	85	21.4%
4	11	5.7%	56	14.1%
5+	21	10.8%	61	15.3%
Total (n)	**194**		**398**	

Figure 3. Number of people living in the household for the In-Network and Commercial survey groups.

	In-Network		Commercial	
Kids under 18 at home?	**#**	**%**	**#**	**%**
No	156	80.4%	246	60.9%
Yes	38	19.6%	158	39.1%
n=	**194**		**404**	

Figure 4. The percentage of the In-Network and Commercial survey groups that have kids under 18 at home.

Knowledge Level of Midwest-Grown Hazelnuts. Figure 8 shows the percentage of respondents that knew about Midwest-grown hazelnuts prior to taking the survey. As expected, the In-Network respondents were more aware with 58% being at least "somewhat aware" compared to only 17% of the Commercial respondents.

The responses were similar for the question asking respondents to indicate how much they knew about efforts to build a hazelnut industry in the Midwest with 37% of the In-Network group and 76% of the Commercial group knowing nothing about the efforts (data not shown).

	In-Network		Commercial	
Education	**#**	**%**	**#**	**%**
Less than a high school diploma	2	1.0%	5	1.2%
High school degree or equivalent (e.g. GED)	5	2.6%	72	17.8%
Some college, no degree	23	11.9%	69	17.1%
Associate degree (e.g. AA, AS)	10	5.2%	63	15.6%
Bachelor's degree (e.g. BA, BS)	85	43.8%	123	30.4%
Master's degree (e.g. MA, MS, MEd)	57	29.4%	56	13.9%
Doctorate or professional degree (e.g. MD, DDS, PhD)	12	6.2%	16	4.0%
Total (n)	**194**		**404**	

Figure 5. Education level of the In-Network and Commercial survey groups

	In-Network		Commercial	
Household Income	**#**	**%**	**#**	**%**
Less than $25,000	14	7.2%	45	11.3%
$25,000 - 49,999	19	9.8%	79	19.8%
$50,000 - 74,999	31	16.0%	82	20.6%
$75,000 - 99,999	33	17.0%	58	14.5%
$100,000 - 149,999	37	19.1%	65	16.3%
$150,000 or more	34	17.5%	40	10.0%
Prefer not to say	26	13.4%	30	7.5%
Total (n)	**194**		**399**	

Figure 6. Household income of the In-Network and Commercial survey groups.

	In-Network	Commercial
Average Age	45.6	14.8
Age Standard Deviation	42.2	15.2
Percent with More Than Two In Household	36.3	50.8
% With Kids Under 18 at Home	19.6	39.1
Percent with $75k+ Household Income	53.6	40.8
Percent with Bachelor's Degree or More	79.4	48.3

Figure 7. Summary statistics of the demographics of the two survey groups.

	In-Network		Commercial	
Awareness of Midwest Hazelnuts	**#**	**%**	**#**	**%**
Extremely familiar	36	18.9%	8	2.0%
Very familiar	41	21.6%	21	5.2%
Somewhat aware	34	17.9%	38	9.4%
Aware of them, but very little	18	9.5%	41	10.2%
Never heard of them	61	32.1%	295	73.2%
Total (n)	**190**		**403**	

Figure 8. Familiarity with Midwest-grown hazelnuts prior to taking the survey.