Survey

Consumer Attitudes on Olive Oil

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UC DAVIS OLIVE CENTER
at the Robert Mondavi Institute

Executive Summary: Consumer Attitudes Toward Olive Oil

This survey examined perceptions and attitudes toward olive oil among 2,234 US consumers. Results indicate that consumers believe that they know more about olive oil than they actually do, cook with olive oil despite conventional wisdom that claims that olive oil has a low smoke point, and value the taste of olive oil but do not believe that common descriptors of quality olive oil sound very tasty:

- While 55 percent believe that they understand the meaning of olive oil grades no more than 25 percent of consumers responded correctly to statements about the grades. Lack of consumer knowledge of the differences among olive oil grades indicates a need for clearer information on the quality difference among grades.

- Eighty-six percent of consumers sauté with olive oil, indicating that consumers correctly disregard the conventional wisdom that olive oil has a low smoke point. Consumers in high percentages also use olive oil for other cooking applications, including grilling and baking.

- Eighty percent of consumers cite flavor as an important factor in buying olive oil, which is noteworthy given that recent studies have found that much of the olive oil available to consumers has off-flavors such as rancidity. The importance of flavor may provide an opportunity for quality producers to urge consumers to experience the flavor contrast between fresh extra virgin olive oil and the substandard flavor quality that is familiar to many US consumers.

- "Fresh" is a word that received the highest agreement for describing tasty oil, but consumers did not agree that words often used to describe fresh olive oil sounded tasty ("fruity," "peppery" and "grassy"). Producers may want to avoid the terms "fruity," "peppery" and "grassy" until such time as the consumer accepts these words as descriptors of tasty oil.

- Health and taste are top reasons why consumers choose olive oil over other oils and fats. Only 25 percent of respondents indicated that they choose other oils because they are less expensive than olive oil, suggesting that consumers are willing to pay more for olive oil to receive health and flavor benefits. Given the importance of health to consumers, producers may want to examine thoroughly whether higher-quality olive oil is healthier than lower-quality olive oil.

- Survey results indicate that olive oil producers should consider modifying packaging to: (1) clearly indicate best uses on the package, (2) offer a harvest date to assist the consumer in assessing the freshness of the oil and (3) allow the consumer to see the color while still protecting the oil from light.

Consumer Attitudes Toward Olive Oil

This survey examined United States consumer perceptions and attitudes toward olive oil. Results indicate that there are opportunities for producers to modify marketing practices to assist consumers in making better-informed olive oil purchasing decisions.

Methodology

The research team designed an online survey based on information gathered through interviews with industry experts and a consumer focus group. The survey was conducted in two phases, with the first phase carried out from April 24 to June 5, 2012 via the UC Davis Olive Center's Facebook and LinkedIn networks; and the second phase conducted from May 24 to May 29, 2012 via SurveyMonkey. Before we ran the second phase, we updated some survey questions for clarity as well as added an additional question. We analyzed the results of the two phases, found the responses to be similar, and report the responses either separately or in aggregate as appropriate. We chose not to screen survey respondents so that we could gain understanding of the consumer market in general. To craft a survey of the appropriate length, we did not seek in-depth data regarding usage and purchase, nor did we develop a comprehensive analytical model. We analyzed results using SPSS, a social science statistical program, and also with Microsoft Excel with Data Analysis Add-in. A total of 2,234 persons responded to the survey. Data presented in the report may not add up to 100 percent due to rounding.

Knowledge of Olive Oil Quality

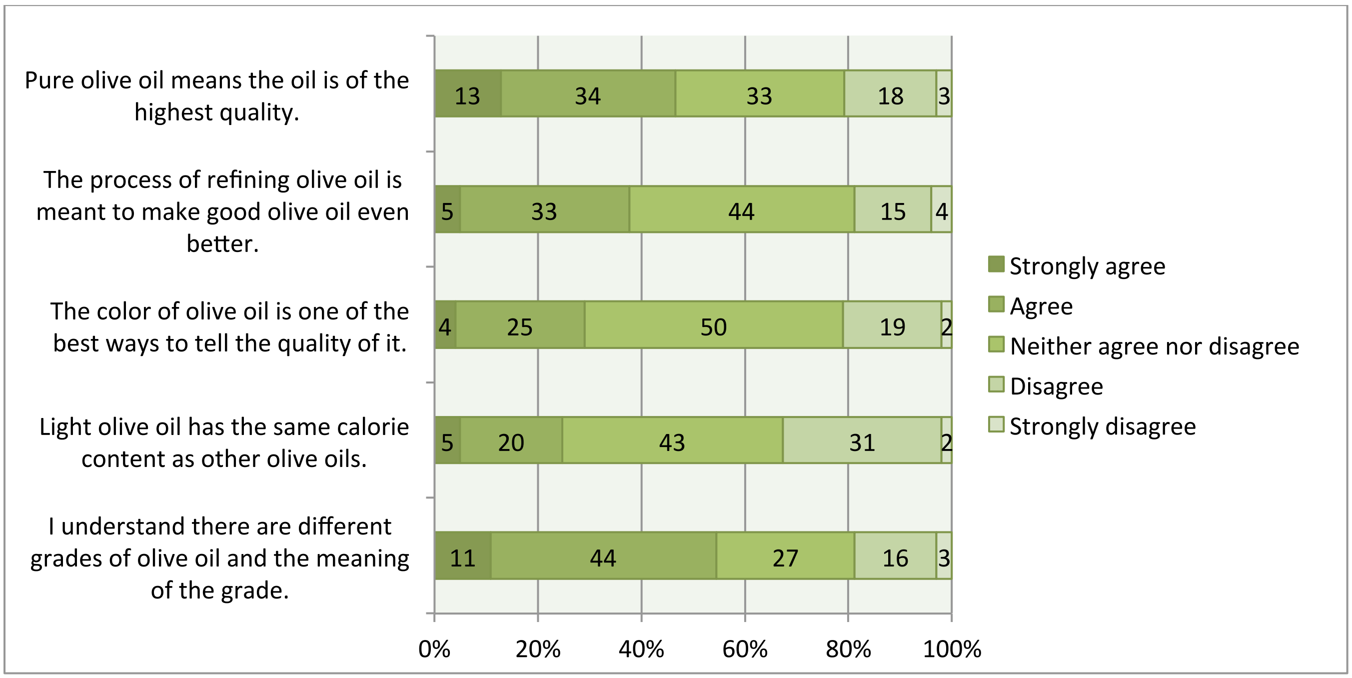
To assess consumer understanding of olive oil quality, we asked respondents to provide their best answer to three statements related to available grades, as well as a statement related to the extent that color relates to quality. Respondents had the option to strongly agree, agree, neither agree or disagree, disagree or strongly disagree with each statement.

The most common grades of olive oil available to US consumers are usually marketed as "extra virgin," "pure" and "light" or "extra light." No more than one-quarter of survey participants responded correctly to the statements assessing their knowledge of these grades. As shown in Chart 1, 21 percent of respondents responded correctly and 47 percent responded incorrectly to the statement "pure olive oil is of the highest quality" (pure olive oil actually is a blend of refined olive oil and virgin olive oil and is of a lower grade than extra virgin olive oil.) Just 19 percent responded correctly and 38 percent responded incorrectly to the statement "the process of refining olive oil is meant to make good olive oil event better" (refining actually is a process used to make inferior oil edible.) Only 21 percent responded correctly and 29 percent responded incorrectly to the statement "The color of the olive oil is one of the best ways to tell the quality of it" (color actually is an unreliable indicator of quality.) Only 25 percent responded correctly to the statement that "light olive oil has the same calorie content as other olive oils," while 33 percent answered incorrectly

("light" olive oil refers to refined olive oil that is lighter in flavor but not in calories compared to other olive oils.)

We then asked respondents to rate their understanding of olive oil grades and found that 55 percent of survey respondents agreed or strongly agreed with the statement "I understand there are different grades of olive oil and the meaning of the grade." Thus, while less than 25 percent of consumers actually provided correct responses to statements on olive oil grades, most consumers believe that they understand the differences among grades. The high percentages of respondents neither agreeing nor disagreeing with most of the statements indicate that many consumers are unsure when faced with olive oil choices. This finding is not necessarily surprising, given that consumers probably are no more knowledgeable about the grades of other foods, such as maple syrup.[1] This finding does indicate a need for clearer information so that consumers can better understand the olive oil choices available.

Chart 1. Assessing olive oil knowledge

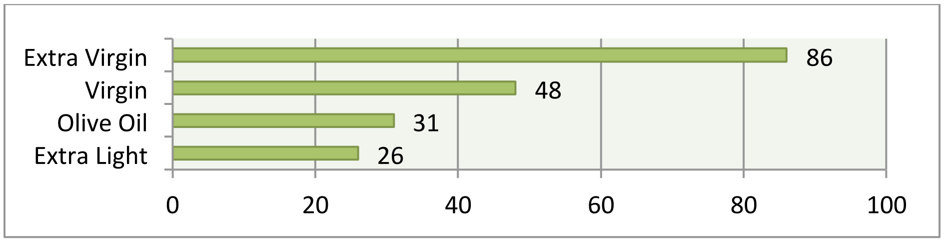


Olive Oil Purchasing

When asked about the grades of olive oil that they purchase, Chart 2 shows that respondents purchase extra virgin olive oil more than other grades. Many respondents also indicated that they purchase "virgin" olive oil, even though olive oil is rarely labeled as virgin in the US. Olive oil grades that are mostly or completely refined ("olive oil" and "light") were the least-purchased types of olive oil.

[1] James, R. E., and James, B. H., Consumer Preferences for Maple Syrup Grade Names, *Journal of Food Distribution Research*, **1994,** *25*, 64-68.

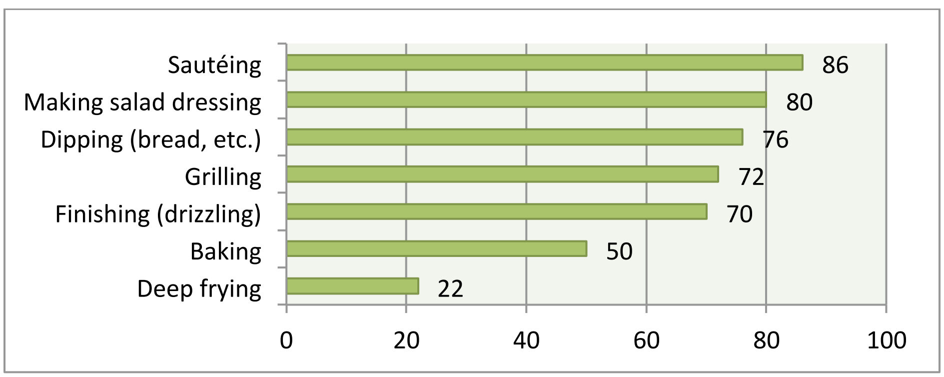
Chart 2. **Which olive oil grade do you buy? (%)**



Olive Oil Use

When asked how they use olive oil, Chart 3 shows that more than 70 percent of respondents indicated that they sauté, make salad dressing, dip, grill and finish with olive oil, with 50 percent indicating that they bake and 22 percent saying that they deep-fry with olive oil. The high percentage (86 percent) of those indicating that they sauté with olive oil is striking given the conventional wisdom that olive oil has a low smoke point and should not be used in cooking.[2] Olive oil actually has a sufficient smoke point for most cooking applications, including sautéing and deep-frying,[3] and consumers apparently have concluded on their own that olive oil is fine for cooking. The relatively high percentage of respondents who bake with olive oil suggests that many consumers are agreeable to using a flavorful fat to replace flavorless or unhealthy fats in baking, which may offer producers an opportunity to begin marketing olive oil as a healthy and flavorful baking option.

Chart 3. **How do you use olive oil? (%)**



[2] "But culinary experts in the United States typically say that olive oil's smoke point is too low for (deep frying.)" Wolke, R. L. Where There's Smoke, There's a Fryer. *The Washington Post*, May 16, **2007**.

[3] The smoke point of virgin olive oil was measured at 391°F (199°C) by Detwiler Jr., S. B.; Markley, K. S. Smoke, Flash, and Fire Points Of Soybean and Other Vegetable Oils. *Oil & Soap*, **1940**, *17*, 39-40.

Reasons Why Consumers Buy Olive Oil

The survey presented to consumers a variety of reasons as to why they purchase olive oil and asked them to rate the importance. Chart 4 shows that flavor was the most frequently cited factor influencing consumer purchase of olive oil, with 80 percent indicating this factor to be extremely or very important. This result is noteworthy given that two-thirds of samples of top-selling brands analyzed by the UC Davis Olive Center were found to have rancidity or other defects.[4] The importance of flavor may provide an opportunity for quality producers to urge consumers to experience the flavor contrast between fresh extra virgin olive oil and the substandard "extra virgin" familiar to many US consumers.

The second most-cited reason for purchasing olive oil was "intended use," considered extremely or very important by 78 percent of respondents. This result suggests that producers may wish to clearly indicate on the package the best uses for their oil, such as drizzling and dipping for premium quality extra virgin; drizzling, sautéing, grilling, and dipping for good quality extra virgin, and deep-frying for refined olive oil.

The third most-cited factor in olive oil purchasing decisions is "best-before date, " which 60 percent of respondents considered extremely or very important. In research conducted by the UC Davis Olive Center, the best-before date actually has little relationship to the quality of the oil, with some oils showing defective aromas and flavors even with a best-before date set more than a year in the future. The Olive Center has found that a best-before date is more useful if the label also includes a harvest date, which our research typically found on better-quality olive oil. Producers may want to consider offering a harvest date along with a best-before date to assist the consumer in assessing the freshness of the oil.

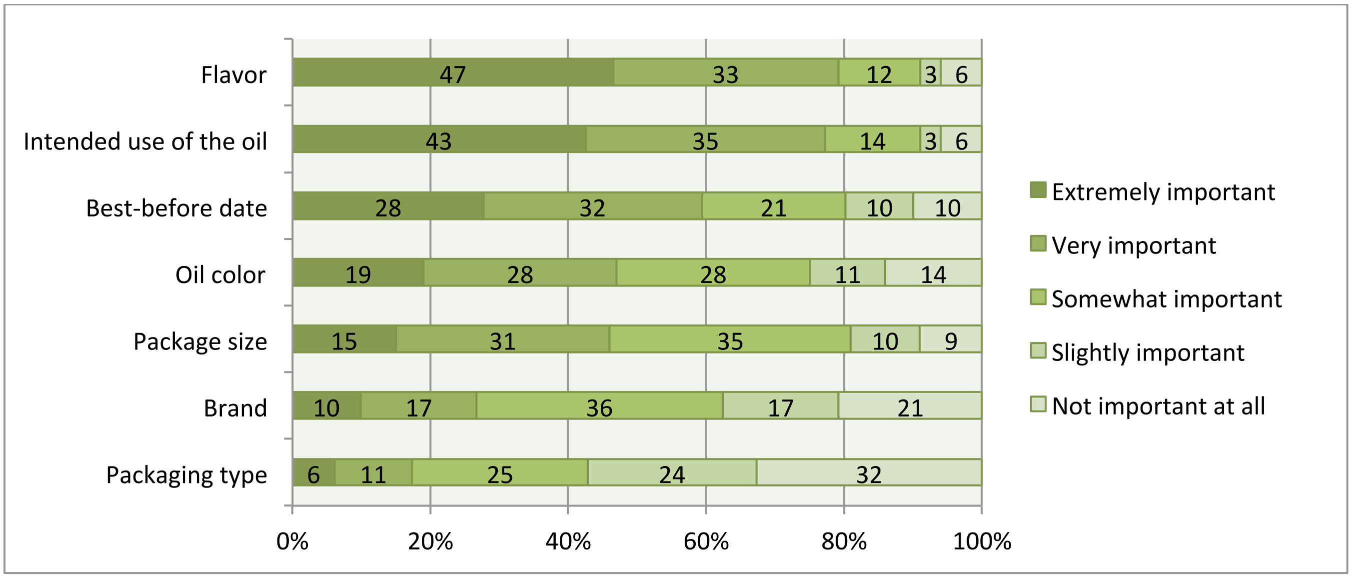
"Color," was noted as extremely or very important by about half of respondents. As previously noted, color is not an reliable indicator of quality, but the importance of color to consumers explains why many producers offer olive oil in clear containers. Producers may wish to educate consumers about the insignificance of color as a quality indicator, and the benefits of protecting olive oil from light. Producers may also want to consider packaging that allows the consumer to see the color while still protecting the oil from light to the maximum extend possible (e.g., with a label that covers almost all of a clear container.)

"Package size" was an extremely or very important factor for 46 percent of respondents. Future surveys may wish to explore why consumers are motivated to select specific package sizes. "Brand" was extremely or very important to only 27 percent of respondents. The least-cited reason for buying olive oil was "packaging type," which just 17 percent of respondents cited as important. In fact, the packaging type can have a significant impact on the quality of olive oil, with containers that admit little to no light helping to prevent photo-oxidation.[5]

[4] Frankel, E. N.; Mailer, R. J.; Wang, S. C.; Shoemaker, C. F.; Guinard, J.-X.; Flynn, J. D.; Sturzenberger, N. D Evaluation of Extra-Virgin Olive Oil Sold in California, *UC Davis Olive Center Publication*, **2011**.

[5] See, for example, Dabbou, S.; Gharbi, I.; Dabbou, S.; Brahmi, F.; Amel N.; Hammami, M. Impact of packaging material and storage time on olive oil quality. *African Journal of Biotechnology,* **2011,** *10*, 16937-16947.

Chart 4. When deciding to purchase olive oil, how important are the following?



Olive Oil Flavor Descriptors

When asked whether specific words described tasty olive oil, 79 percent strongly agreed or agreed that "fresh" describes tasty oil, as shown in Chart 5. Olive oil quality is in fact highly correlated with freshness. Extra virgin olive oil is minimally processed, much like a fresh, unpasteurized apple juice (the fruit is crushed and juice is extracted), and quality declines with time. Processors that sell high quality extra virgin may wish to highlight the freshness of the oil on the packaging and validate freshness by including a harvest date on the container.

Terms often used to describe fresh oil are "fruity," "peppery" and "grassy," but the survey found that these terms have little resonance with respondents. Thirty percent agree that "fruity" describes tasty oil while 32 percent disagree, 23 percent agree that "grassy" describes tasty oil while 35 percent disagree, and 28 percent agree that "peppery" describes tasty oil while 33 percent disagree. Producers may want to consider avoiding these terms when marketing quality olive oil until such time as the consumer accepts them as descriptors of tasty oil.

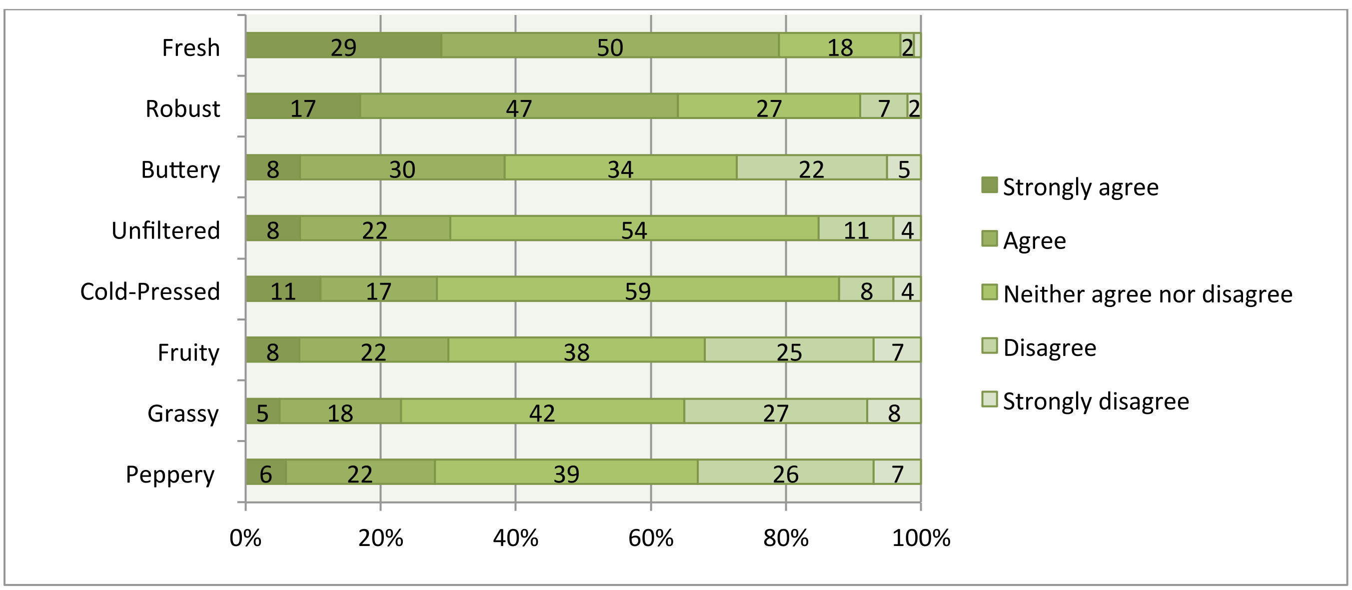
Chart 5 also shows that 64 percent of respondents believe that "robust" described tasty oil, with just 9 percent disagreeing. Robust is a word used by olive oil competitions to categorize oil intensity (less intense categories are Delicate and Medium. When describing high-quality olive oils, "robust" indicates substantial fruitiness, bitterness and pungency. On the other hand, one major brand of olive oil uses the term "robust" prominently on the front label, but UC Davis analysis of this brand found that most samples had off-flavors such as rancidity.

After "fresh" and "robust," there is much less agreement on words that describe tasty oil. For example, 38 percent agree that "buttery" describes tasty oil, while 27 percent disagree. "Buttery" is a term often used by trained sensory panels to describe an olive oil that is low in bitterness and pungency, as opposed to the higher levels of bitterness and pungency that sensory panels would describe as "robust."

A majority of respondents were unsure of "unfiltered," with 54 percent neither agreeing nor disagreeing that "unfiltered" described tasty oil. Many processors choose to rack rather than filter the oil (racking describes a process of periodically drawing off water and sediment and labeling the oil as unfiltered.) Unfiltered oil is not necessarily an indicator of quality, however, and there is some evidence that filtering olive oil can extend the freshness of the oil.[6]

Similarly, 59 percent of respondents were unsure of "cold pressed," a term often found on olive oil labels. "Cold pressed" actually has little relevance in modern olive oil production, since nearly all commercially available olive oil is extracted by centrifugation rather than by a press. The relatively low level of respondents who responded favorably to "cold pressed" indicates that this archaic term no longer is an indicator of quality to most consumers.

Chart 5. How well do the following words describe tasty oil?



[6] See, for example, Lozano-Sańchez, J.; Cerretani, L.; Bendini, A,; Gallina-Toschi, T.; Segura-Carretero, A.; Fernańdez-Gutieŕrez, A. New Filtration Systems for Extra-Virgin Olive Oil: Effect on Antioxidant Compounds, Oxidative Stability, and Physicochemical and Sensory Properties, *Journal of Agricultural and Food Chemistry*, **2012**, *60*, 3754−3762.

Comparisons of Olive Oil to Other Fats

Chart 6 indicates that consumers choose olive oil over other fats because they agree it is healthier (81 percent). The importance of health to consumers suggests that producers may want to conduct research on whether higher-quality olive oil is healthier than lower-quality olive oil.

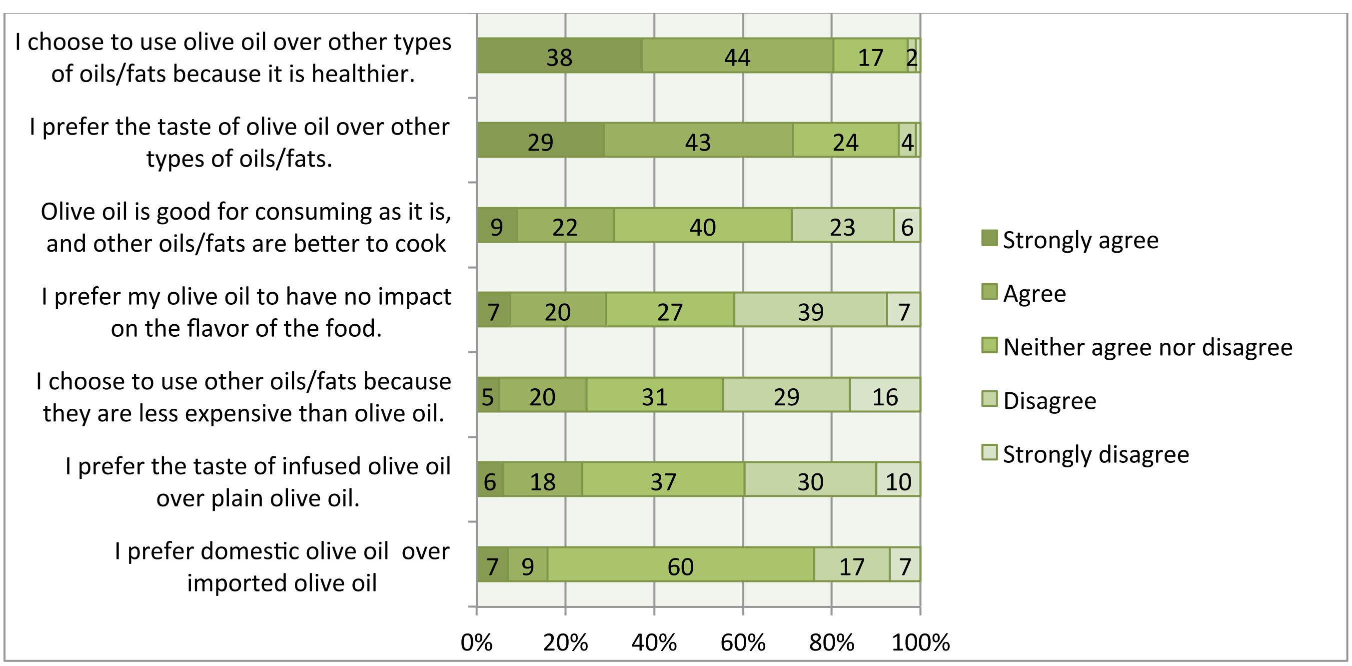
Respondents addressed several statements about flavor. Seventy-two percent agreed that they choose olive oil over other oils because it tastes better, yet only 31 percent agreed that "olive oil is good for consuming as it is, and other oils/fats are better to cook with than olive oil." The response to the second statement could mean that many consumers actually do not like the flavor of olive oil or that these respondents disagreed that olive oil is not as suitable for cooking as other oils. Twenty-seven percent agreed with the statement "I prefer that my olive oil have no impact on the flavor of food."

Only 25 percent of respondents agreed that they "choose to use other oils because they are less expensive than olive oil," suggesting that consumers are willing to pay more for olive oil than for other oils to receive health and flavor benefits.

Respondents tended to disagree (40 percent) with the statement "I prefer the taste of infused olive oil over plain olive oil," with just 24 percent agreeing. This result is unsurprising given that the infused olive oil is not a widely available product, tending to be limited to specialty outlets.

Most respondents (60 percent) were neutral as to whether they had a preference for domestic or imported oil. For those indicating a preference, imported beat domestic, 24 percent to 16 percent. A future survey may want to delve into why respondents are largely unconcerned about the origin of the olive oil.

Chart 6. What are your preferences and views on olive oil?



Conclusion

This survey offers insights into consumer attitudes toward olive oil. Survey results suggest a need for clearer information so that consumers can better understand the olive oil choices available. About half of consumers bake with olive oil, which may offer producers an opportunity to begin marketing olive oil as a healthy and flavorful baking option. The importance of flavor may provide an opportunity for quality producers to urge consumers to experience the flavor contrast between fresh extra virgin olive oil and the substandard oil familiar to many US consumers. Producers may want to avoid the terms "fruity," "peppery" and "grassy" until such time as the consumer accepts these words as descriptors of tasty oil. Given the importance of health to consumers, producers may want to examine thoroughly whether higher-quality olive oil is healthier than lower-quality olive oil. Producers may also want to clearly indicate the best uses for their oil on the package, offer a harvest date to assist the consumer in assessing the freshness of the oil, and consider packaging that allows the consumer to see the color while still protecting the oil from damaging light.

Future surveys could further explore use, preference and purchasing behavior, as well as more detailed understanding of specific demographics. It also would be worthwhile to gain consumer insights on the importance of price, harvest date, flavor and shelf life.

AUTHORS

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Dan Flynn Mr. Flynn is the executive director of the UC Davis Olive Center. He previously served 16 years as a legislative and policy consultant in the California State Capitol. He has a MA in Political Science from Rutgers University. The UC Davis Olive Center seeks to do for olives what UC Davis did for wine. The self-funded center features 30 faculty members, research specialists and farm advisors who form an effective multi-disciplinary partnership. Mr. Flynn leads the center's efforts to advance research, education, and product testing for growers, processors and buyers of table olives and olive oil.