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Article

Chefs Evaluate Syrup from the Wild Bigleaf Maple (*Acer macrophyllum*): A New Artisanal Food from Pacific Northwest Forests

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Abstract: This paper examines a new artisanal food product made from bigleaf maple trees (*Acer macrophyllum*). These trees are indigenous to, and thrive in, the moist and mild climate of the Pacific Northwestern regions of the United States and Canada. Small producers have a new artisanal product from this historically valuable tree. The sap is collected from family-owned woodland trees to produce maple syrup. To better understand the gastronomic potential of bigleaf maple syrup, we conducted sensory evaluations with culinary professionals. In this study undertaken in Oregon, the syrup from three small independent producers was subjected to sensory hedonic and attribute assessments by 62 chefs. The results of the sensory assessments and the details of the testing methods and analysis are presented. This paper examines the agreement among the chefs and the implications for the culinary acceptance of this new artisanal product. We discuss in detail (1) the complexity of flavor; (2) the most likely use of bigleaf maple syrup in various foods or as a sweetener; (3) and the four most important reasons for purchasing bigleaf maple syrup consisting of both environmental and taste attributes.

Keywords: bigleaf maple syrup; sensory analysis; chefs; non-timber forest products; cultural significance

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1. Introduction

The growth of hand-crafted artisanal food products in recent decades in the United States is widely recognized as a significant culinary trend by consumers and marketers alike. The trends include the growing emphasis on locally sourced foods, farm to table, sustainable food options, and transparency [1–3]. Maple syrup made from the indigenous bigleaf maple trees (*Acer macrophyllum*) of the Pacific Northwest are a new artisanal food product. Though bigleaf maple syrup producers are emerging with their products in or destined for the marketplace, culinary professionals such as chefs are not fully aware of bigleaf maple syrup. Dishes with bigleaf maple ingredients offered to restaurant patrons are yet to be seen. An important next step in bigleaf maple syrup promotion is to learn how culinary professionals evaluate the qualities and potential uses of a variety of small batch artisanal syrups. In this study undertaken in Oregon, the syrup from three small independent producers was subjected to sensory hedonic and attribute assessments by 62 chefs. The results of the sensory assessments, as well as the details of the testing methods and analysis, are presented. The agreement among the chefs and the implications for the culinary acceptance of this new artisanal product are presented.

2. Valuing Local Forest Products

The increasing demand for hand-crafted products and foods in countries of the Global North (Europe and North America) is associated with a reaction against the increasing consolidation of the global food supply by corporations, a process that undermines the

systems of locally produced food. The products, restaurants, department stores, and experiences have been made increasingly similar since the post-War era, regardless of location [4–6]. This global market is neoliberal and capitalist in nature and largely represents the "Americanization" of cultures around the world [7].

While society witnesses this homogenization from industrial foods on a global scale, there has been at the same time a cloak of invisibility placed upon wild gathered food, despite being a vital component as well as the daily fare in people's diets around the world, and their invisibility is now increasingly challenged [8–14]. Forests have always been an important source of local and natural foods around the world. However, in industrialized countries, with some exceptions (e.g., wild edible fungi and berry markets in the U.S.), there has been a parallel decline in the visibility and valorization of forest foods. Shackleton and DeVos [15] provide an extensive review of studies on locations from around the world to estimate the use of non-timber forest products [NTFPs]. The number of NTFP users globally in their assessment corresponds to approximately 3.5–5.8 billion people. In the Global North, the figure is 0.79 billion users. Forest products are directly collected or purchased, being found in thousands of small artisan products, in organic markets, and in businesses in villages and towns of the Global North. "Approximately half of NTFP users globally are located in more economically developed contexts, living and harvesting in both urban and rural areas. NTFPs are a lot more than a fallback for the rural poor" [15]. Forest policy, management, science, and corporate business in the Global North are and have been centered principally on timber production as a national and global commodity, often at the expense of non-timber forest product biodiversity and the diversified economy and culture that could exist if forests were sustainably managed [9]. Yet, despite the lack of active management for NTFPs, extensive subsistence, recreational, and commercial harvesting exists, even in highly industrial northern countries in North America and Western Europe [16–18].

The term "non-timber forest product" is specifically worded and broadly framed to call attention to the invisibility of NTFP biodiversity and use separate to but affected by the global spread of industrial forest management for timber [9,19,20]. The word "product" in "non-timber forest products" or NTFPs is not intended to generally promote the commercial production of all non-timber species. Rather, it is recognized that biological forms harvested with low technology and used for food, medicine, and small-scale livelihood generation activities are vital to forest dwellers and near-forest dwellers. Indigenous Peoples, in particular, have practices linked to rights and traditions. The exploitation of indigenous plant use and knowledge by industry without consent and fair practice does occur and is a cautionary tale that should guide all NTFP development [21]. The conservation of the environment can be effective when Indigenous Peoples and local communities are respected and form the bases of governance as leaders in the conservation of nature [22].

3. Pacific Northwest Forests

Pacific Northwest (PNW) forests are attractive to gatherers and regional artisans. The parts (e.g., bark, sap, and berries) and sometimes the whole organism (e.g., transplants) of over 400 species are sold. Some of these like salal, sword fern, and moss, though still gathered by hand, are global in scale. The PNW floral greens industry has shipped to the Netherlands and other places in Europe since the 1920s and is relatively large-scale compared to most other NTFPs [23,24]. Many other NTFPs are smaller scale, harvested from the wild, hand-processed with simple tools, and used in a variety of products, mostly sold locally. Examples include fragrant forest oils and herbs for soaps, creams, and candles; medicinal plants (e.g., Oregon grape, arnica, and pipsissewa) for tinctures; and a variety of botanicals (e.g., juniper berry and spruce tips) used in making beverages such as gin, teas, kombucha, and ale [25].

In the Pacific Northwest, a multitude of foraged foods are gathered and sold directly in local/regional marketplaces, including a variety of mushrooms, berries, edible greens and ferns, roots and tubers, nuts and seeds, and resins [26–28]. In some cases, this trend is

a revalorization of traditional resources and products [29,30]. These products and foods are bound to place; local and regional traditions; and harvesting, preparing, and consuming experiences [31,32]. In other cases where NTFP products are emerging, the traditional historical use is unknown or unclear and the products may very well be new uses or products made possible or economically viable by modern technology.

4. Bigleaf Maple's Regional Cultural Value

Maple syrup from bigleaf maple (also known as Oregon maple or Pacific Coast Maple) is a PNW native species (*Acer macrophyllum*) that may be an example of a modern artisanal NTFP ingredient that is starting to be produced by small farmers and foresters in marketable quantities and that has acquired the attention of the media and consumers. [33–36]. To better understand the culinary interest of bigleaf maple syrup, we conducted sensory evaluations with culinary professionals.

Bigleaf maple syrup is made from the collecting and processing of sap from the tree. Bigleaf maple trees occur in abundance throughout the Pacific Northwest's western temperate forests west of the Cascade Range. The optimal trees to tap are in zones with periodic freeze–thaw cycles throughout the latter half of winter. The amount of maple a small farmer or forester needs to be a commercial producer depends both on the abundance of maple on their land or land they can access through partnerships and leases and also on other factors like elevation, building and road infrastructure, slope, and groundwater. Of the tens of thousands of small farms and forests west of the Cascade Range, an analysis of the Forest Inventory and Analysis data as a part of ongoing research by the authors shows thousands of parcels have commercially viable stocks of maple for sugaring. Some have abundant amounts with over 35,000 tappable stems on only 32 hectares. Bigleaf maple syrup has a flavor profile distinct from the sap of the sugar maple (*Acer saccharum*) and other native northeast American species (e.g., *Acer rubrum*). Most pure maple syrup sold in farm stands and farmers markets through the northeastern U.S. and eastern Canada and in grocery stores through both countries is from sugar maple or sugar maple blended with other eastern maple species [37]. Sugar maple procurement and the processing of the tree's sap most certainly extends back in time before indigenous contact with Europeans. Scholars have not reached agreement, however, on the exact timeline of the indigenous production of sap into maple sugar or syrup, but, regardless, artisanal maple sap collection and processing date back centuries over many generations [38,39].

In the West, however, written or oral history for indigenous procurement and the processing of sap into foods by regional tribes is lacking. Nonetheless, it is well documented that all western tribes had extensive knowledge of bigleaf maple tree uses [40–42], and, by extension, it is highly probable that tribes had knowledge that the sap of maple trees was edible. Bigleaf maple trees are so ubiquitous in the Pacific Northwest western ecosystems that tribes would have seen a frequently recurring phenomenon whereby limbs break after ice storms and ooze, sometimes gush, sap from the wound. Seeing birds and animals feeding off the sap would suggest it was also safe for human consumption. Bigleaf maple sap has 1–2 brix (% of dissolved solids, primarily sucrose, glucose, and fructose) on average and small amounts of beneficial nutrients like calcium and potassium. These nutrients increase as you concentrate sap into syrup by removing water through evaporation.

Beyond whatever sap use might have been occurring, there is ample evidence of the tree's overall regional cultural value. The ethnographic record illustrates some of the historic cultural importance of bigleaf maple to the Native Peoples of the Northwest Pacific coast of North America. The inner bark is recorded as having been used to thicken soup once dried and pulverized. The inner bark fiber was also traditionally used to make ropes and baskets [40]. The large leaves were used for food storage and were added to steaming pots to flavor food. An infusion of bark was used medicinally to treat tuberculosis [43]. The leaves were used to cover food in cooking pits, and the leaves were used to lay fish on while cleaning [40]. The leaves were also used in steaming pits to flavor deer, seal, or porpoise meat by the Coast Salish Indians of Vancouver Island [44]. The tree wood was

extensively used for making cooking utensils and bowls, canoe paddles, and other objects of use and construction [43].

The cultural importance of bigleaf maple "sugaring" (the process of collecting sap and making syrup or sugar) is growing rapidly through the emergence of hundreds of home hobby tappers. Additionally, dozens of small farmers and foresters throughout the PNW are venturing into commercial production and starting to sell at or supply farm stands, farmers markets, small groceries, and online. A limited number of artisanal bigleaf maple syrups have been for sale periodically since 1991, with all but two starting in the last five years. Many of the recent commercial entrepreneurs are actively collaborating with researchers at regional universities who are funded through the national Acer Access and Development Program to advance maple sugaring. Assistance includes access and training with equipment from eastern sugar maple production operations being evaluated and adapted to the Pacific Northwest. It also includes funding for sensory studies, including this present one with culinary professionals.

Between hobbyists and commercial interests, the Pacific Northwest now has hundreds of producers of bigleaf maple syrup. The emerging popularity of bigleaf maple sugaring is occurring simultaneously, if not synonymously, with the frequent coverage of bigleaf sugaring in the media (e.g., Oregon Public Broadcasting 2024), It is at this juncture of growing production and the regional awareness of bigleaf maple syrup as an ingredient that merits this study exploring professional chefs' views on bigleaf maple syrup usability.

5. Materials and Methods

Objective and Study Participants. The objective of this research conducted in Oregon, U.S.A., was to understand chefs' opinions of a new product category and regional culinary ingredient, bigleaf maple syrup (*Acer macrophyllum*). In 2023 and 2024, the chefs (n = 62) were engaged in blind-coded sensory evaluations to measure the overall sensory hedonics and descriptors, quality ratings, purchase intent, and perceptions of the syrup category with three different samples of bigleaf maple syrup. Selected results from the sensory qualities and attributes that chefs provided are presented along with the details of the testing methods and analysis. The syrups selected for testing were from three different producers from three different areas of the Pacific Northwest. Three bigleaf maple syrups were selected from a pool of syrups produced in 2023 from throughout the region. Our team chose three syrups with a diversity of sensory characteristics including color, viscosity, sweetness, and flavor.

The sensory testing of bigleaf maple syrup was conducted both with 20 professional chefs working in locally owned, independent restaurants in the Willamette Valley in Oregon tested at their workplace and one retired chef at his home (n = 21). Additionally, the same test was conducted with the same syrups with chefs attending the 2024 Northwest Food Show in Portland Oregon, the largest and oldest food-focused trade show in the Pacific Northwest (n = 41).

The Oregon State University Institutional Review Board for Research (IRB) approved the research. All participants were 18 years old or older. The individuals were informed that their participation was voluntary and they could freely opt out at any time. Their responses would be anonymized. Their consent was obtained. The participants were not compensated.

Procedures. The chefs were subjected to blind taste testing of the syrups. In addition, the syrups were numbered with three digit codes and the samples were served in a balanced design with six orders in the base design to avoid order effects when rating each product. The Compusense Cloud v21.0.25 (Academic Consortium, Compusense Cloud, Compusense, Inc., Guelph, ON, Canada) data acquisition computer-generated online questionnaire was used for the evaluation of the syrup samples. The questionnaire was accessed using a tablet computer or a smartphone by scanning the provided QR code. Each syrup sample was presented in spoons to the individual, making the sensory assessment correspond with the sample identification number (Figure S1).

The chefs rated their liking for each syrup using a 9-point hedonic category scale (where 1 = dislike extremely and 9 = like extremely). They were also asked to rate the attributes of color, sweetness, texture/viscosity, and flavor complexity using 5-point just about right (JAR) scales (Meilgaard et al., 1999), where 1 = not at all enough, 2 = somewhat not enough, 3 = just about right, 4 = somewhat too much, and 5 = much too much. The flavor intensity was rated on a 5-point scale, where 1 = not at all complex, 2 = slightly complex, 3 = somewhat complex, 4 = very complex, and 5 = extremely complex. Of interest were the chefs' descriptions of each syrup using the check-all-that-apply (CATA) methodology [45], where similar sensory descriptors were used from a previous maple syrup study with consumers [46]. Finally, the product quality was determined using a 3-point quality rating scale (where 1 = value, 2 = mainstream, and 3 = premium), as well as purchase intent, based on product liking, on a 5-point scale (1 = would definitely not buy, 2 = would probably not buy, 3 = might buy/might not buy, 4 = would probably buy, and 5 = would definitely buy). Furthermore, the chefs were questioned about how they might use this novel bigleaf maple syrup and the most appealing descriptors for the syrup.

6. Results

When considering the entire group of 62 chefs, there were significant differences in the overall liking of the three bigleaf maple syrups, with one being rated highly at 7.44 (between 'like very much' and 'like somewhat'), while another was rated significantly lower at 5.79 on average (between 'neither like nor dislike' and 'like slightly') (Table 1). The syrup with the highest rated flavor complexity (bigleaf maple 590) was also the syrup rated significantly lower in overall liking and purchase intent. Though not significant, the syrup with the lowest perceived quality score (184) at 'mainstream' was also the syrup that was rated highest in overall liking, while the converse was true and the syrup rated highest in quality and closest to 'premium' (590) was given the lowest average liking score. The two highest rated syrups were also rated highest in purchase intent and scored on average between 'might buy' and 'would probably buy'.

Table 1. Overall liking, flavor complexity intensity ratings, perceived quality, and purchase intent mean scores with +/− standard deviation values. The means with different letters were significantly different ($p < 0.05$) using Tukey's HSD test.

Coded Sample	Syrup Type	Overall Liking (9 pt. Hedonic Scale)	Flavor Complexity Intensity (5 pt. JAR Scale)	Perceived Quality (3 pt. Quality Scale)	Purchase Intent (5 pt. PI Scale)
371	Bigleaf	6.79 a +/− 1.79	2.95 a +/− 0.86	2.21 a +/− 0.67	3.15 a +/− 1.21
590	Bigleaf	5.79 b +/− 2.16	3.11 a +/− 1.06	2.26 a +/− 0.81	2.65 b +/− 1.26
184	Bigleaf	7.44 a +/− 1.35	2.37 ba +/− 0.94	1.98 a +/− 0.70	3.42 a +/− 0.95

Syrup 590 was rated statistically differently in both color and sweetness than the other two syrups (Table 2), with the color being darker than ideal and about a quarter of the chefs feeling the syrup was not sweet enough. Syrup 590 was also rated as just about right in flavor complexity only 48% of the time (Figure 1). These key attributes could have contributed to the lower overall liking mean score.

Due to the large standard deviation in the overall liking scores, further analysis was conducted to determine any clustering of assessors within the data. Using the attribute of overall liking, the chefs were clustered, and three separate clusters were found by the dendrogram (29 chefs in cluster 1, 19 chefs in cluster 2, and 14 chefs in cluster 3) (Table 3). The three clusters are markedly different in their liking of syrup 590. The largest cluster, comprising almost half of the chefs, liked all three syrups equally and rated each above 7.0 or 'like somewhat', with syrups 371 and 184 closer to 'like very much' on average. Cluster 2 strongly disliked syrup 590, which was rated as more complex in flavor profile, while cluster 3 rated all three syrups at or below 'like slightly' on average. These findings suggest

that this sample, which was rated as both the darkest and least sweet, was a polarizing sample to these chefs.

Table 2. Just about right (JAR) mean scores with +/− standard deviation values. The scale points for the attribute color: 1 = much too light, 2 = somewhat too light, 3 = just about right, 4 = somewhat too dark, and 5 = much too dark; for the sweetness: 1 = not at all sweet enough, 2 = somewhat not sweet enough, 3 = just about right, 4 = somewhat too sweet, and 5 = much too sweet; for the texture/viscosity: 1 = much too thin, 2 = somewhat too thin, 3 = just about right, 4 = somewhat too thick, and 5 = much too thick; and for the flavor complexity: 1 = not at all complex enough, 2 = somewhat not complex enough, 3 = just about right, 4 = somewhat too complex, and 5 = much too complex. The means with different letters were significantly different ($p < 0.05$) using Tukey's HSD test.

Coded Sample	Syrup Type	Color (5 pt. JAR Scale)	Sweetness (5 pt. JAR Scale)	Texture/Viscosity (5 pt. JAR Scale)	Flavor Complexity (5 pt. JAR Scale)
371	Bigleaf	2.98 b +/− 0.50	3.13 a +/− 0.61	2.69 ab +/− 0.53	2.77 a +/− 0.66
590	Bigleaf	3.73 a +/− 0.75	2.85 b +/− 0.76	2.85 a +/− 0.79	2.79 a +/− 0.91
184	Bigleaf	2.85 b +/− 0.40	3.21 a +/− 0.55	2.60 b +/− 0.53	2.56 a +/− 0.64

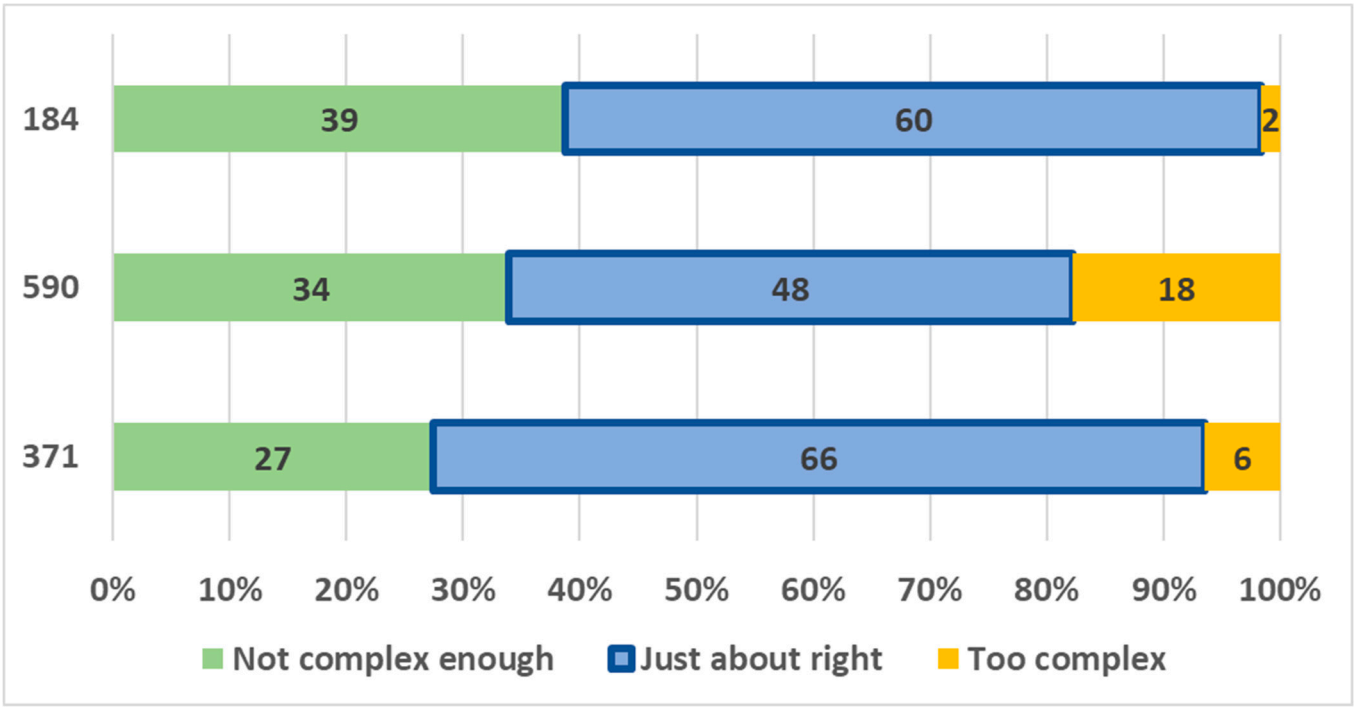

Figure 1. Flavor complexity just about right score distribution of bigleaf maple syrups.

Table 3. Overall liking (9-point hedonic scale) by cluster with +/− standard deviation values. The means with different letters were significantly different ($p < 0.05$) using Tukey's HSD test.

Coded Sample	Syrup Type	Cluster 1, n = 29	Cluster 2, n = 19	Cluster 3, n = 14
371	Bigleaf	7.72 a +/− 1.10	7.21 a +/− 1.18	4.29 a +/− 1.27
590	Bigleaf	7.45 a +/− 0.87	3.68 b +/− 1.06	5.21 a +/− 2.39
184	Bigleaf	7.79 a +/− 0.73	7.89 a +/− 0.81	6.07 a +/− 1.98

A correspondence analysis (CA) was run on the CATA data (Figure 2). Syrup 184 was most associated with the attributes 'maple', 'vanilla', 'sweet', and 'light', while syrup 371 was most related with lighter notes such as 'honey', 'buttery', and 'butterscotch'. Finally,

the terms 'molasses', 'coffee', 'burnt sugar', 'strong flavor', 'toasted', 'bourbon', 'bitter', and 'woody (pine, resin, cedar)' were closely related to syrup 590. A principal coordinate analysis of the terms shows those terms that were most associated with the liking of the three products. The syrups that were most well liked exhibited the qualities of 'maple', 'sweet', 'vanilla', and 'honey' (Figure 3). According to these chefs, the attributes addressed in the CATA question that had the highest impact on the overall liking mean scores were 'sweet', 'maple', 'buttery', 'vanilla', 'honey', and 'butterscotch' (Figure 4). This is pertinent information for producers as these are the terms that describe the syrups most preferred by these chefs and are well-liked qualities. Less liked were attributes such as 'burnt sugar', 'pungent', 'raisin/prune', 'strong flavor', 'mineral', or 'bitter'.

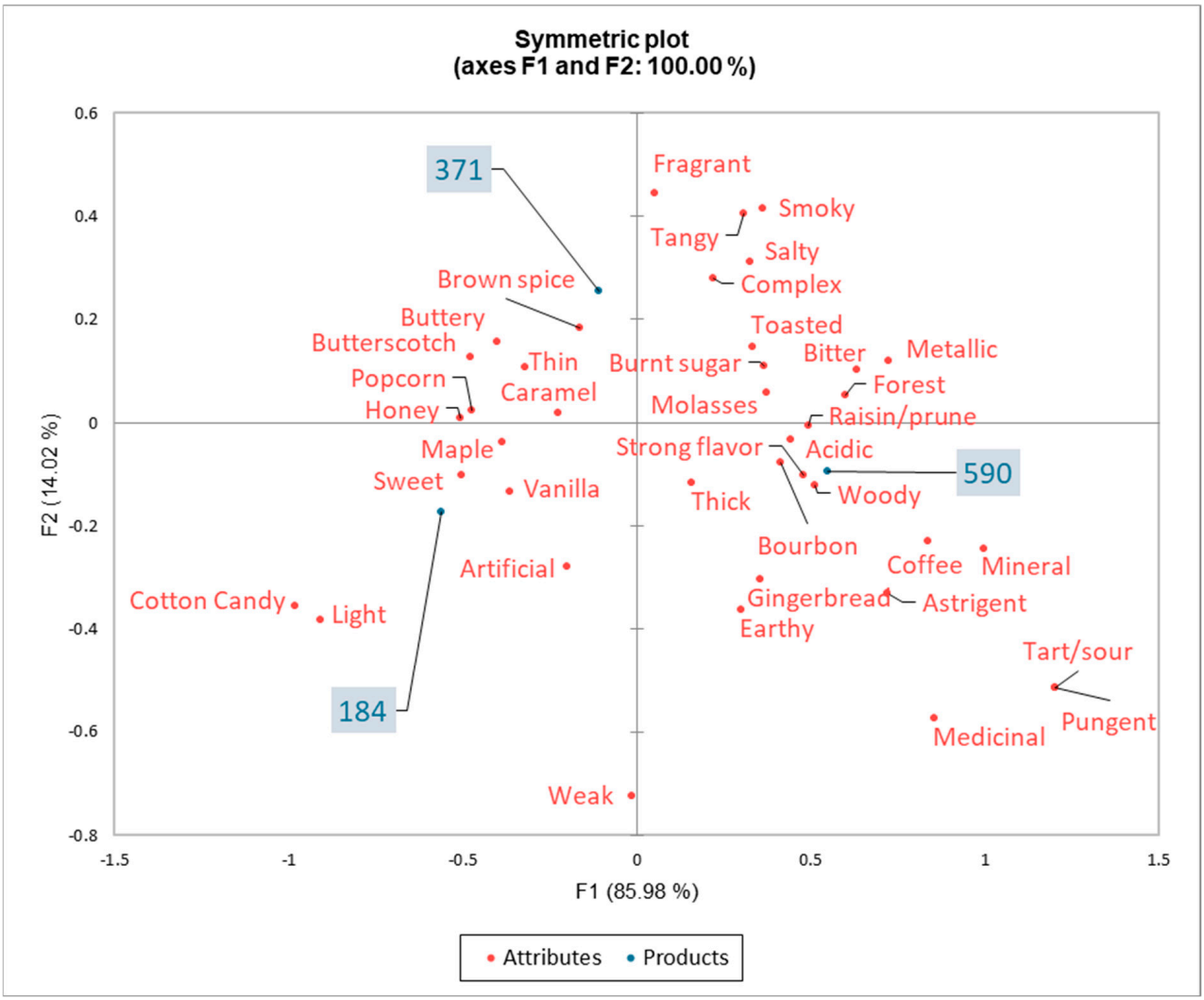

Figure 2. Correspondence analysis using the data from CATA questions on the products and attributes of bigleaf maple syrups in the first two dimensions with axes F1 and F2: 100%.

The chefs were most interested in using the product as 'an ingredient in baked goods', on breakfast items, 'as a glaze/marinade', or 'as an ingredient in sauces' (Figure 5). When asked to rank the most important reasons for purchasing bigleaf maple syrup, the group of 29 chefs who were clustered together based on rating all three products highly, felt 'complex flavor profile', 'local production', and 'sensory appeal' were more important that attributes such as 'price', 'health benefits', 'consistent supply', and 'packaging size' based on the number one rankings (Figure 6). However, those chefs who liked less some or all of the syrups (clusters 2 and 3) rated 'sensory appeal', 'health benefits', and 'locally sourced'

with the most first place rankings; 'complex flavor profile' was ranked less important (Figure 7). It is noteworthy that more chefs in cluster 1 ranked 'complex flavor profile' first than clusters 2 and 3 combined. This could be a primary driver of liking for chefs or others who are interested in a unique product like bigleaf maple syrup as opposed to sugar maple or maple-flavored products [46]. Additionally, when asked about the most appealing terms used to describe maple syrup, 'locally sourced/produced' was chosen by 90% of the chefs tested, followed by '100% pure', which was selected by 87% of those who participated (Figure 8). These findings show the potential for a new product in the maple syrup category for foodservice applications and that high-quality bigleaf maple syrup is a well-liked product of interest in Oregon, USA.

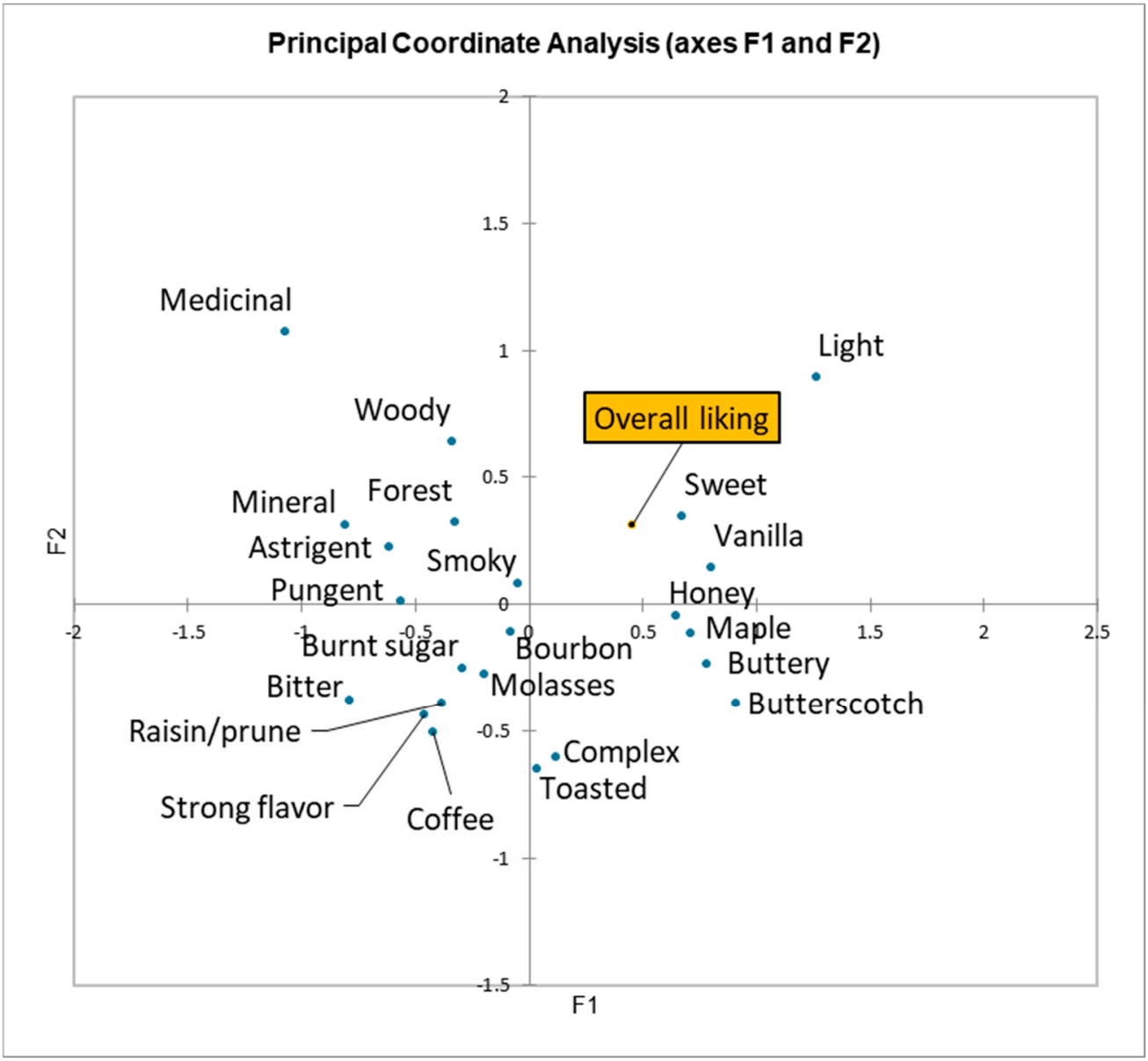

Figure 3. Principal coordinate analysis of bigleaf maple syrups with sensory descriptors.

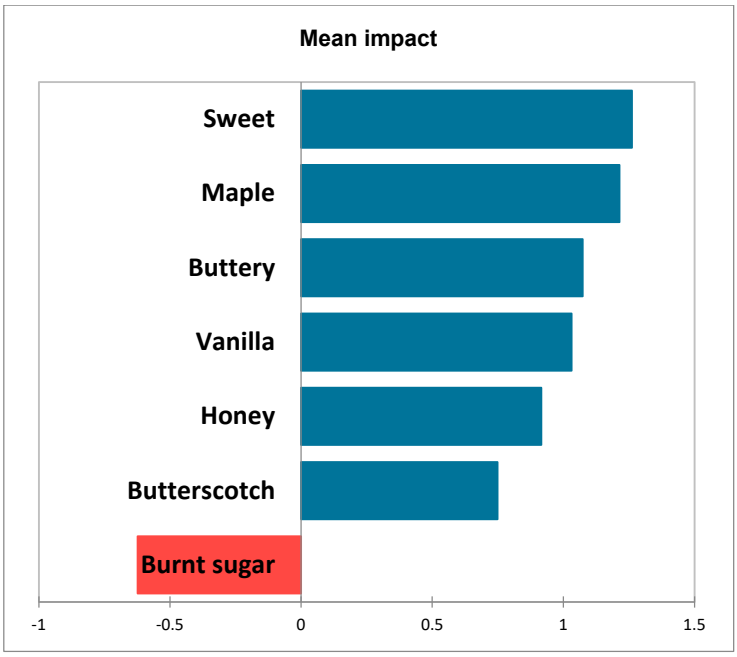

Figure 4. CATA sensory attributes that significantly impacted chefs' overall liking of the bigleaf maple syrups. Attributes in blue had a positive impact on mean scores, while attributes in red negatively impacted overall liking.

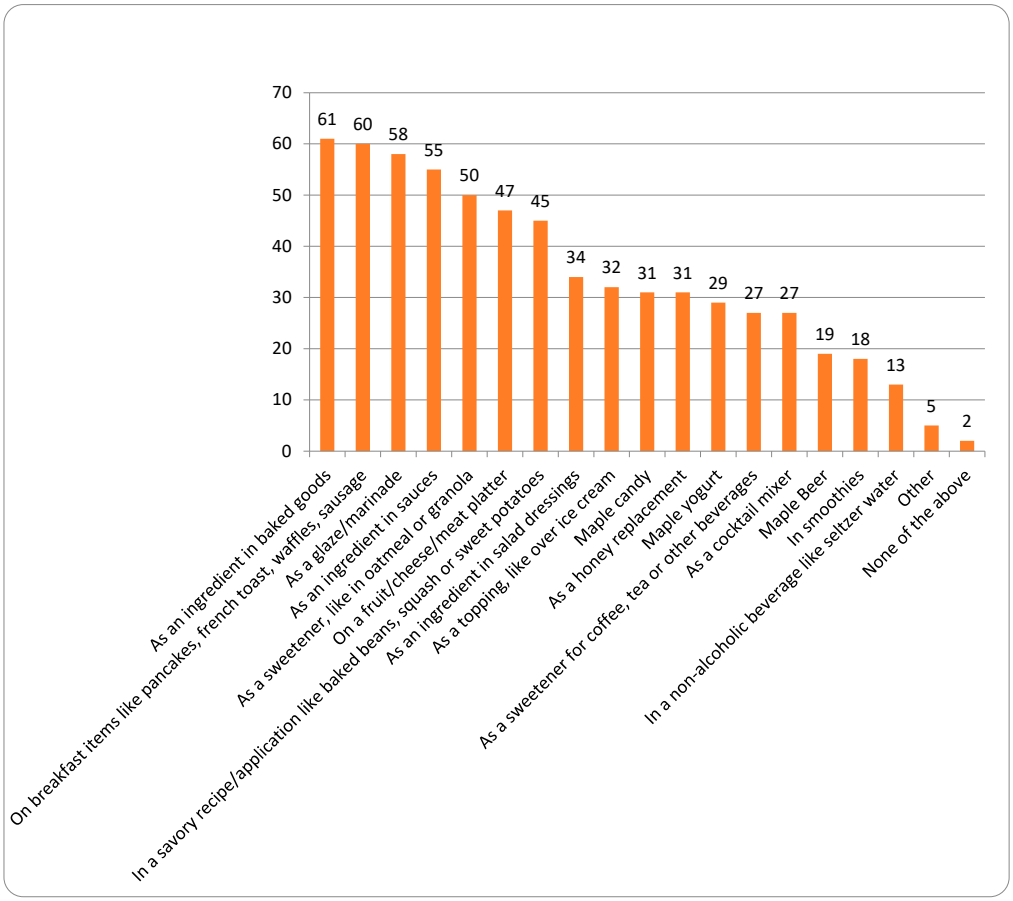

Figure 5. How chefs would most likely use bigleaf maple syrup, using the check-all-that-apply methodology, shown in percent response, $n = 62$.

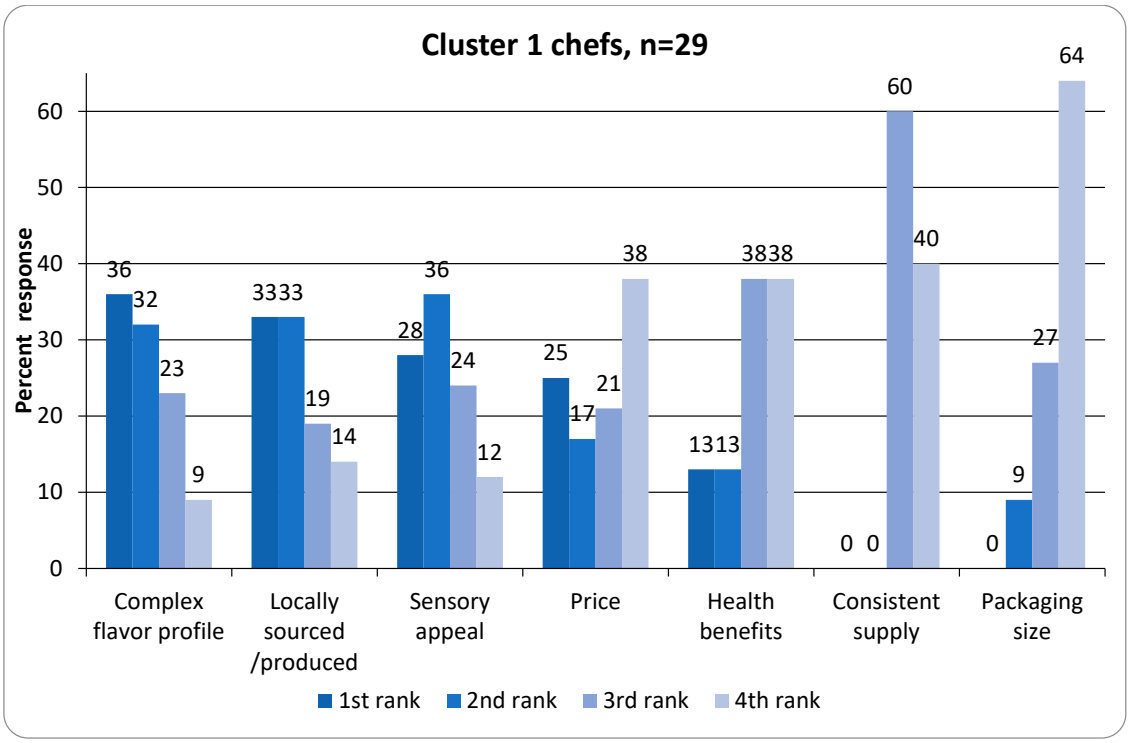

Figure 6. Terms ranked by importance to purchase intent of bigleaf maple syrup, where the top four were ranked, shown in percent response, by chefs who, when clustered on overall liking, were in a group who liked all three syrups, n = 29.

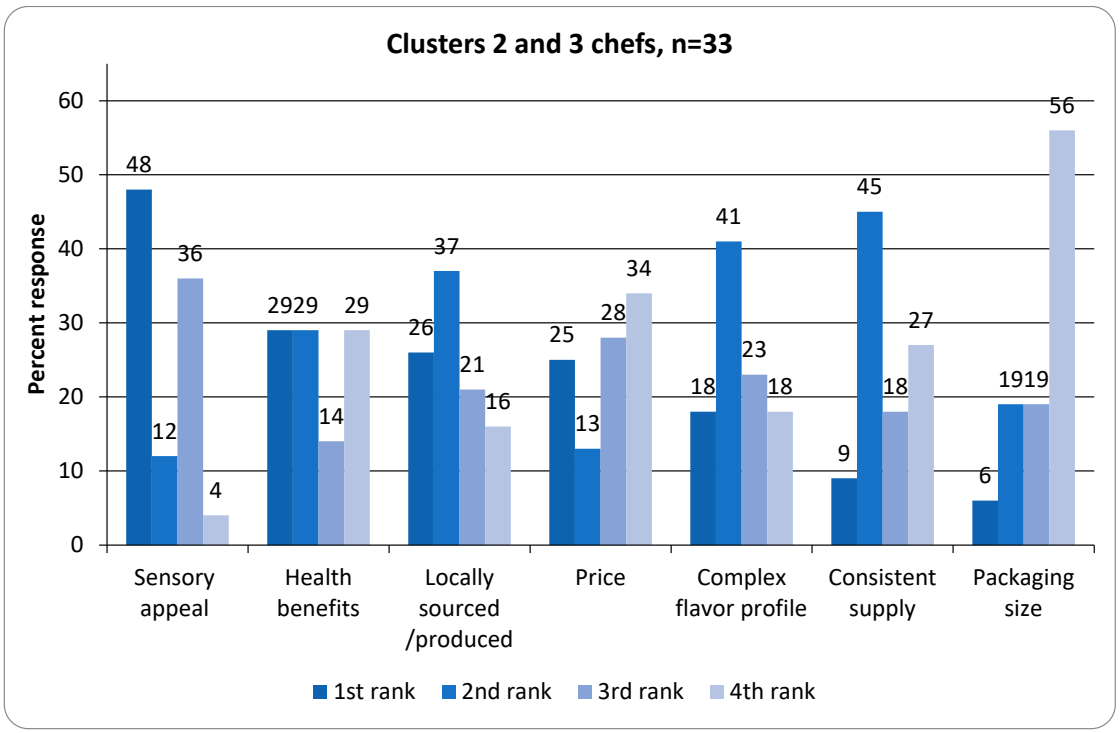

Figure 7. Terms ranked by importance to purchase intent of bigleaf maple syrup, where the top four were ranked, shown in percent response, by chefs who, when clustered on overall liking, were in groups who liked less some or all three syrups, n = 33.

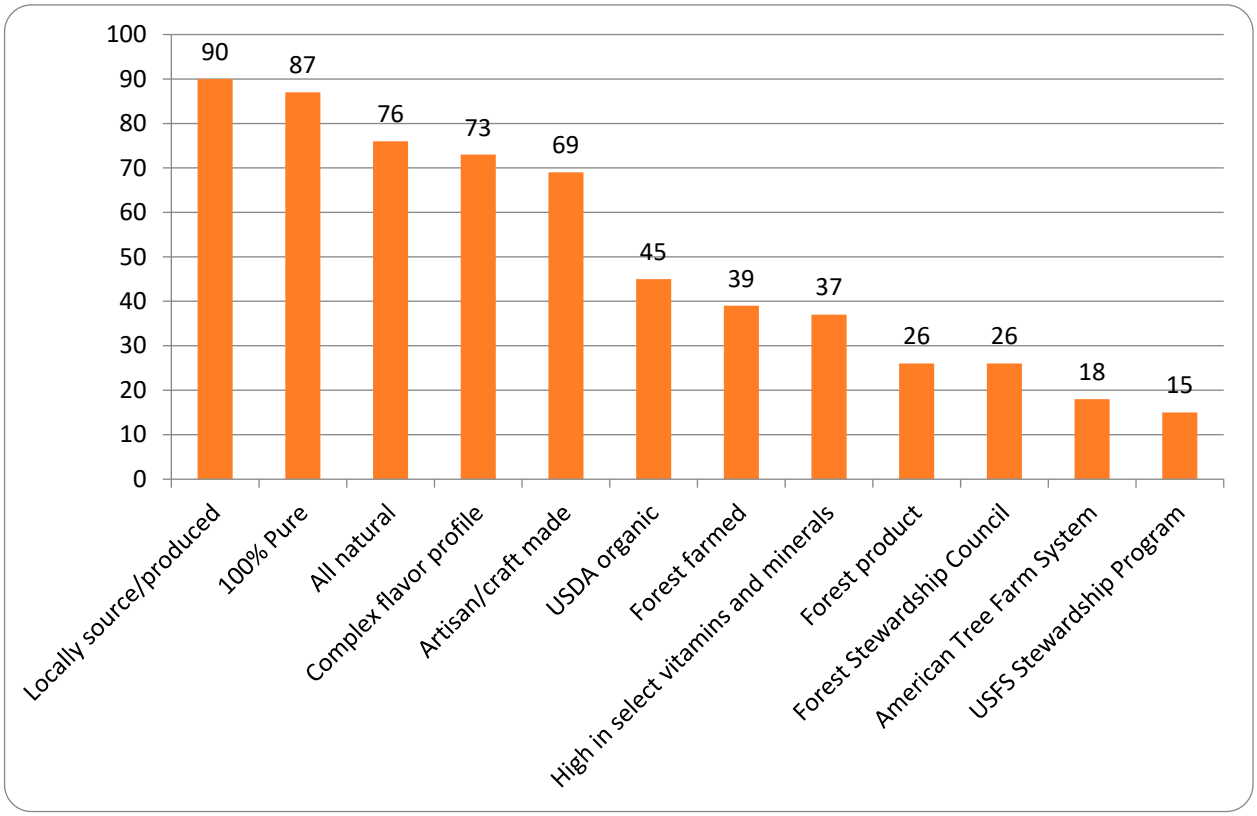

Figure 8. Terms used to describe maple syrup that chefs find most appealing, using the check-all-that-apply methodology, shown in percent response, $n = 62$.

7. Conclusions

The chefs evaluating the syrup samples in our study illustrate the importance of a selection of qualities for food marketing trends. Of the most appealing descriptions of the bigleaf maple syrup, three qualities appear before a taste quality of the product. The number one most appealing description (90% of responses) is that a product is 'locally sourced/produced'. Local products, by virtue of being local, make the product traceable. The product should also be '100% pure' and 'all-natural', qualities more easily verifiable when a product is local, lending greater potential for transparency and ease of traceability. These were the top three most appealing product attributes of those listed. 'Complex flavor profile' and 'artisan/craft made' were also listed as important. The flavor complexity of each product, especially the two most well-liked syrups, was rated as 'just about right' a majority of the time, and interestingly each producer's syrup had unique flavor attributes. The flavor attributes that contributed highly to the overall liking of these syrups included 'maple', 'sweet', 'vanilla', and 'honey'.

Though all the syrups are novel products, there were significant differences in the overall liking of the three syrups. When segmented into clusters based on similar overall liking scores, about half the chefs very much liked all three syrups, while the other two group clusters were less interested specifically in the darker, less sweet, more complex product. It could be suggested from the results that the perception of a more intense flavor complexity suggested a more premium syrup but does not necessarily translate to higher product liking or purchase intent. In the ways they could envision using bigleaf maple syrup as chefs, their selections leaned towards use as an ingredient. The syrup, however, was not very attractive for use as a substantial sweetener (in coffee or tea or as a replacement for honey). The three most common uses include baked goods, as a glaze or marinade, or with breakfast items. The ultimate evaluation indicates the product preferred is one that is locally sourced/produced, 100% pure, and all-natural; has a complex flavor;

and is produced by an artisan/craft maker. In total, 39% of chefs tested felt "forest-farmed" was important. This compares to 90% of responses for locally sourced/produced as the most appealing term to describe the bigleaf maple syrup as an artisanal product. This is a clear and important sign that small bigleaf maple syrup artisanal producers can compete locally against national and global brands.

This study will help producers identify taste profiles that appeal to chefs, opening a market for their product in local, independent restaurants and other professional culinary businesses. Bigleaf maple syrup holds cultural significance for both the Indigenous Peoples of the region and early settlers that displaced and nearly erased them. Today, many tribes are seeing a cultural resurgence, while small farmers are struggling with aging populations and the consolidation of food production and processing. The resurgence of greater appreciation for bigleaf maple and the emergence of bigleaf maple syrup and other bigleaf maple sap-based food enterprises come at an opportune time. Both tribes and farmers can leverage this trend and produce artisan food during the winter when most farm and forest food production in the PNW is dormant.

Growing respect from culinary professionals situates bigleaf maple sugaring as an economically and culturally significant non-timber forest product (NTFP) in the Pacific Northwest. This model is needed to help steer forest management beyond timber and toward protecting the biodiversity of the forest foods and other NTFPs that form the basis of resilient ecosystems. This focus on locally sourced, artisanal ingredients is an alternative counterpoint to the homogenization of the global food supply. To fully experience the unique taste and culture surrounding bigleaf maple products, consumers must visit the Pacific Northwest.

8. Limitations of This Study

The research data are based on a targeted sample rather than a random selection from the broader population of chefs in the Pacific Northwest, which limits our ability to generalize. Despite this limitation, our findings offer timely insights that are valuable for advancing the bigleaf maple industry in the region. Our team deliberately selected the syrups for testing based on our extensive expertise in food science and food studies. Our assessment of the diverse sensory characteristics reflects this professional knowledge.

Moving forward, further research could enhance its impact by gathering additional demographic data to explore how preferences vary across different types of food establishments and other relevant associations.

Supplementary Materials: The following supporting information can be downloaded at: https://www.mdpi.com/article/10.3390/gastronomy2040012/s1, Figure S1: photograph of the sensory testing set-up.

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