GEORGIAN BEEKEEPERS UNION

SUMMARY REPORT

Decoding Honey

A Comprehensive Analyses of Georgian Honey and Consumer Preferences

INTRODUCTION

This study, *A Comprehensive Analyses of Georgian Honey and Consumer Preferences* was facilitated under the Swiss Development Cooperation (SDC), Austrian Development Cooperation (ADC) and Sweden funded project the Mercy Corps implemented Alliances Caucasus Programme 2; a market systems development programme targeting impact for rural producers[1] in Georgia anchored in financial, social and environmental sustainability. The research was carried out by the Georgian Beekeepers Union and its lead researcher, Erekle Chikvaidze. It offers an in-depth examination of Georgian honey, focusing on its classification, regional distribution, quality characteristics, consumer preferences, and market potential, with the aim of using these finding to maximize the development of the honey sector itself and the market potential for Georgian honey going forward. This briefing paper presents a summary of the key findings and recommendations from the full report. It does not include the detailed methodology, maps, or extensive discussions, such as a deeper analysis of the honey sector in Georgia. Instead, it provides a concise overview of the most relevant insights to guide decision-making and strategic planning within the honey industry. The full version of the report in Georgian is available on request from www.geobeekeepers.ge the Georgian Beekeepers Union site.

GOALS OF THE RESEARCH

Georgia's unique and varied biodiversity and climactic zones from subtropical, semi-desert, meadows, shrublands, forests to alpine, determines the production of various types of honey characteristic of each region.

This *Comprehensive Research of Georgian Honey Varieties and Consumer Preferences* aimed to systematically identify local honey types and investigate consumer preferences to improve Georgian honey marketing in local and international markets and address the lack of awareness among beekeepers regarding honey types. Key research questions focused on botanical composition, sensory profiles, and consumer taste and sensory preferences, with the goal of enhancing honey production and marketing strategies in Georgia. The research explores the botanical and geographical characteristics of honey types across Georgia, documenting rare honeys and their unique traits, which will add to scientific knowledge and conservation efforts. It also wanted to help address current inconsistencies in domestic honey labelling, including mislabelling and generalized labelling which undermines or underwhelms consumer interest and limits the sustainable growth of the honey market. Given Georgia's low annual per capita honey consumption of just under half a kilo a year, the study also aimed to identify local consumption patterns and use these to develop guidance for focused marketing campaigns aligned with consumer preferences. This included understanding the potential to expand the consumer base and per person consumption through promoting new uses of honey and marketing new honey varieties. The research also aimed to establish a baseline, laying the foundation for future phases that will refine and broaden the list of honey varieties in Georgia.

[1] In the dairy and meat, honey, wild botanical, forest reared bacon and silk market systems. www.alcp.ge the programme has worked in the honey market system since 2014.

STUDY AREA

The study encompassed all of Georgia, with samples from ten regions and sixty-one municipalities[2]. A total of 123 volunteer beekeepers participated, with efforts to evenly distribute samples across Georgia. Challenges in sampling, were faced by the study, leading to an uneven distribution of samples. The sampling area excluded the occupied Abkhazia region but did manage to include two samples from the occupied Tskhinvali region. For more details on sample distribution, see Annex One.

Figure 1. Map of Sampling Locations

In the second phase, after the classification of Georgian honey types, blind consumer tasting[3] of the eleven[4] most common honey varieties took place in Tbilisi and Batumi, during local festivals to engage a broad range of participants. A total of 152 individuals participated in the blind tasting experiment over three days, providing valuable insights into consumer preferences. See Figure 2 below.

[2] Georgia has 69 registered municipalities. Five of these municipalities are entirely within the occupied territories of Abkhazia and the former South Ossetia (Tskhinvali Region). The remaining 64 municipalities consist of five self-governing cities and 59 self-governing communities. The samples were collected from apiaries across all 59 self-governing communities, one self-governing city, and one occupied municipality, Kurta.

[3] Consumers selected their preferred honey without any identification of the specific honey type on the jars.

[4] Unfortunately, the remaining seven identified honey types were not available in sufficient quantities to be included in the blind testing survey.

Acacia	Christ's Thorn	Goldenrod
Alpine Wildflower	Common Thyme	Ivy
Apiaceae	False Indigo	Lime
Bird's-foot Trefoil	Forest Honeydew	Sweet Chestnut
Blossom	Forget-Me-Not	Unknown Plant
Brown Knapweed	Fruit	White Clover

Figure 2. Identified honey varieties from the survey (18 types), highlighting the eleven most abundant ones included in the blind testing.

METHODOLOGY

This study utilised melissopalynology[5] to analyse one hundred and twenty-three honey samples, identifying their floral and geographical origins through microscopic examination of pollen grains and honeydew elements. The analysis assessed nine parameters, including yeast content, pollen composition, colour, aroma, and electrical conductivity[6].

Honey samples were collected from sixty-two municipalities in Georgia via volunteer beekeepers, ensuring geographical diversity. Each sample was coded and mapped using GPS coordinate. Data was compiled and analysed into an interactive Power BI report allowing for detailed visualization, trend analysis, and comparative insights into honey types, floral origins, and regional patterns.

While the first phase of the study focused on the classification and analysis of honey types, the second phase aimed to assess consumer preferences for different varieties identified during the study. Rather than testing all sixty-two individual samples, the survey focused on the eleven most common honey types identified during the initial classification phase. These varieties were selected based on their prevalence across multiple regions and their availability in sufficient quantities for blind tasting.

The blind tasting experiment took place during local festivals in Tbilisi and Batumi, where 152 individuals evaluated honey samples without prior knowledge of their floral origin. In addition to sensory preferences, the survey examined consumer purchasing habits, price expectations, packaging preferences, and key decision-making factors when buying honey.

To complement the blind tasting, an additional market survey was conducted in **supermarket chains**, analysing the availability, pricing, and packaging of honey products. This provided further insight into how Georgian honey varieties are positioned in the retail sector.

[5] The study of pollen (and sometimes including honeydew and spores) in honey, allowing for the identification of the botanical and geographic origins of honey through microscopic analysis

[6] The analysis was conducted by the Intertek International Laboratory in Bremen, Germany.

Classification and Characteristics of Georgian Honey

Classification of Georgian Honey Types: Eighteen distinct honey types were identified, including fourteen monofloral and four polyfloral varieties. Seven rare honey types come from a single region, while eleven common types are found in multiple regions. Honeydew honey[7] is the most prevalent (24%), followed by blossom and alpine wildflower varieties. Notably, chestnut honey, the most favoured type among domestic consumers and smugglers, was found in 9% of the samples. Meanwhile, acacia honey, Georgia's primary bulk export variety, constituted 4% of the samples.

Colour Characteristics: Half of Georgian honey is extra light amber, 20% is light amber, and 15% is white. While colour classification helps determine honey variety, some variation does exist within a single type. Consumers in Georgia prefer honey that is either water-white or amber in colour, that is, they prefer either very light or very dark honey. The study did not detect dark amber honey, but it is believed to exist in Georgia[8], with sampling limitations likely preventing its identification.

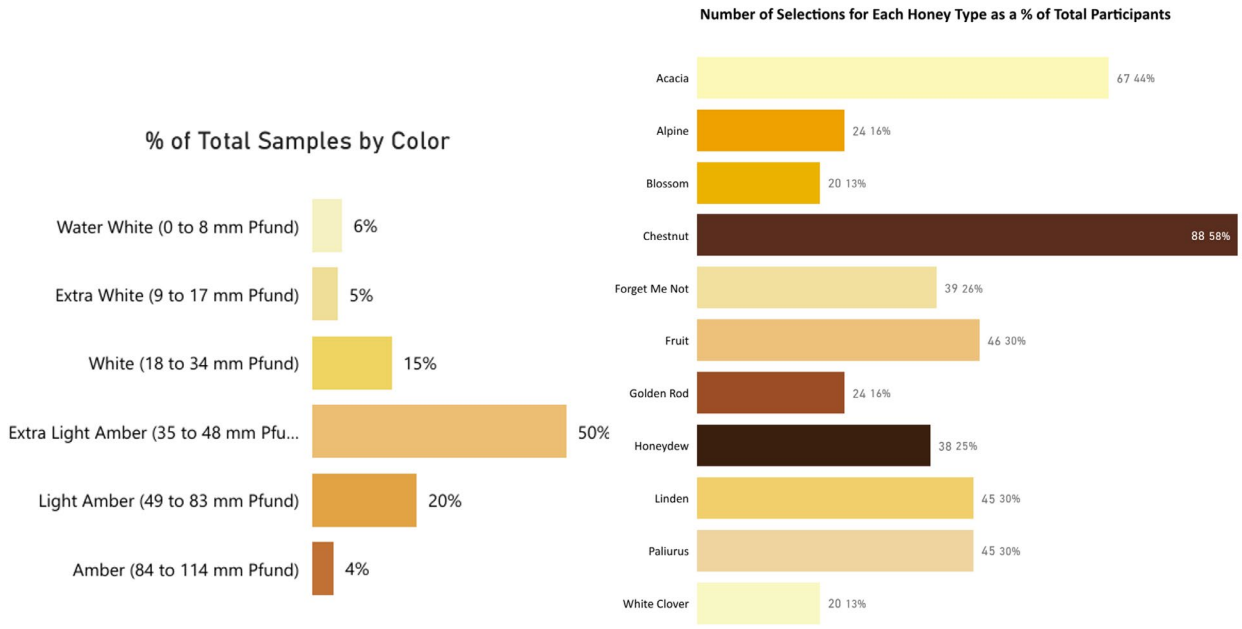

Figure 3 Colour Categorization of Honey Survey Samples and Consumer Preference

Crystallization Levels: About 73% of Georgian honey samples show partial crystallization, while 21% remain liquid. Crystallization is influenced by glucose-to-fructose ratios, and consumer preference leans toward liquid (higher fructose) honey, as crystallized honey is often believed to be low quality or adulterated. Acacia, chestnut, and honeydew honey are the least prone to crystallization among Georgian honey varieties.

Taste Profiles: Thirty distinct taste profiles were identified, with 41% characterized as sweet, fruity, spicy, malty, or bloomy. A significant 78% of samples have a bitter taste, often due to sweet chestnut pollen

[7] Honeydew honey is a type of honey made from the sugary secretions of aphids and other plant-sap-feeding insects rather than floral nectar. It is typically darker, richer in minerals, and has a stronger, less sweet taste compared to blossom honey.

[8] The GBU plans to conduct further research to locate the darkest honey varieties in the country.

and honeydew. This makes bitter taste one of the main taste characteristics of Georgian honey and shapes consumer expectations and perceptions of authenticity and quality.

Electrical Conductivity as a Quality Indicator: Darker honeys, such as chestnut and ivy, exhibit higher electrical conductivity[9]. Conductivity is linked to mineral content; health benefits and helps differentiate honey types. Which could be used in marketing. In Europe chestnut honey for example is well known and marketed for its health benefit as well as taste.

Other Natural Components and Contaminants: Low starch content (<5%) ensures purity. While yeast levels are mostly low, 27% of samples had increased yeast content, posing a spoilage risk. Additionally, 60% of samples contained natural contaminants like plant fibres, bee parts, and crystals, impacting honey quality.

Geographic and Apiary Insights

Regional Distribution: Honeydew honey is the most widely distributed across all regions. Eight of the eighteen honey varieties are region-specific, such as acacia honey in Imereti and thyme honey in Samtskhe-Javakheti. The highest pollen diversity is found in Samegrelo-Zemo Svaneti (75 pollen types), followed by Kvemo Kartli (73) and Kakheti (72), while Guria has the least pollen diversity (27 types). For more details, refer to Annex Two.

Apiary Distribution: Nearly half of the honey samples contained Pyrus (pear), Prunus (cherry/plum), and Rubus (blackberry/raspberry) pollen as either main (dominant), accompanying, or significant isolated components. When including even trace amounts, these pollen types were present in 90% of the samples, reflecting the characteristics of Georgian beekeeping. This suggests that most apiaries are stationary and located in home gardens rather than following transhumance practices, which would allow beekeepers to take advantage of Georgia's diverse floral resources.

Consumer Preferences, Market Trends, and Pricing

Preferred Honey Types and Attributes: Chestnut honey (58%) and acacia honey (44%) were the most favoured varieties. Transparent and liquid consistencies were preferred, while crystallized or opaque honey was less popular. Taste (76%), quality[10] (58%), and colour (44%) were key purchasing factors, while aroma and price were secondary considerations. Additionally, a notable portion of consumers (22%) expressed a preference for honey with honeycomb.

Premium Honey Type: Chestnut honey holds a unique position among Georgian honey varieties, emerging as the most preferred choice due to its dark colour, lack of crystallisation, and distinctive taste. Rich in mineral ions, chestnut honey is also valued for its health benefits. Blind taste tests confirmed its strong consumer appeal, reinforcing its potential as a premium product.

Consumer Willingness to Purchase: Following a blind tasting, 88% of participants expressed willingness to purchase honey, with 500 gram and 1,000 gram jars being the most popular sizes (51%). Consumers

[9] The electrical conductivity of eleven chestnut honey samples ranged from 1.13 to 1.77 mS/cm, while the single identified ivy honey sample had a conductivity of 1.44 mS/cm.

[10] The survey questionnaire did not define "quality" for the respondents, nor were the respondents able to clearly define what they understood by quality, due to the complexity of its assessment. However, those who mentioned quality identified the following factors: taste (76%), colour (38%), price (28%), aroma (27%), organic certification (24%), consistency (19%), and honeycomb content (19%).

can easily estimate the price of one kg of honey. Price sensitivity was observed, with 63% willing to pay a maximum of 25–30 GEL per kilogram.

Purchasing Channels: Despite some differences between consumers in Tbilisi and Batumi, the main purchasing channels remain the same. Direct purchases from beekeepers were the most common method (Tbilisi 34%, Batumi 68%), followed by gifts from relatives (Tbilisi 23%, Batumi 16%) and supermarkets (Tbilisi 13%, Batumi 7%). Notably, in Tbilisi, online or phone orders direct to honey companies accounted for a significant 14%, whereas this option was less popular in Batumi.

Price Analysis: A brief supermarket analysis showed that only six[11] of the eleven common honey varieties were available, often under different or mixed names without clear labelling. Jar sizes ranged from 160g to 1kg[12]. *Chestnut honey* was the most expensive at *41.25 GEL/kg* ($14.7), followed by *Linden (36.25 GEL/kg - $13), Forest (33 GEL/kg -$11.7), Alpine (31.03 GEL/kg -$11.1),* and *Blossom (29.95 GEL/kg-$10.7)* as the most affordable. Larger jars were more common and supermarket markups inflated prices. Notably, the consumer survey set a 30 GEL/kg price limit, revealing a potential gap between market pricing and consumer expectations.

RECOMMENDATIONS

Recommendations for Honey Producer Companies

- Expand the product range and actively promote Georgian honey varieties to enhance market potential, drive sales growth and build sustainability. By offering a greater variety of honey types highlighting authenticity, quality, and health benefits, businesses can encourage new purchases, and increase customer loyalty, supporting both customer purchasing and long-term customer retention.
- Enhance honey aggregation and processing to improve production capacity, final product quality, and alignment with consumer preferences. Investing in specialized equipment (such as honey melters, pasteurizers, homogenizers, and filters), utilizing laboratory services, and implementing effective distribution management will help optimize quality control and scalability.
- Strengthen branding and packaging to align with consumer expectations. Labels should be more informative and visually appealing, clearly highlighting key attributes such as honey type (dominant flower pollen content), taste, colour, crystallization level, health benefits, price, and volume.
- Refine pricing and marketing strategies based on consumer preferences. Premium pricing should be applied to low-crystallization, extra-light and extra-dark, monofloral, and rare honey varieties, while more common types should be positioned at a lower price point.
- Increase the promotion of rare honey varieties and develop attractive gift packaging to enhance product appeal.
- Organize regular consumer awareness campaigns to educate buyers on key topics such as natural crystallization, honey colour variations, health benefits, and authenticity. These initiatives will help address common misconceptions and foster greater consumer trust in Georgian honey.

[11] At the time of the survey, only five honey types were identified in supermarkets. However, acacia honey, despite not being found on store shelves, was included as available since at least two known producers actively sell it to supermarkets.

[12] Occasional 3 kg jars were excluded from the core analysis

Recommendations for Beekeepers:

- Enhance hygiene standards in honey extraction, filtering, and storage to improve overall quality control. Regularly monitor yeast levels and minimize the presence of natural contaminants to reduce spoilage risks and extend honey shelf life.
- Increase awareness of pollen diversity and how regional floral sources impact honey classification.
- Expand transhumance beekeeping practices to maximize the use of wild and alpine flora, increasing honey diversity and optimizing nectar resource utilization for higher productivity.
- Improve direct marketing strategies to connect with consumers and increase profitability.
- Invest in and implement climate adaptive inputs and practices to mitigate the effects of climate change on honey production, maintain biodiversity and ensure consistent honey production.

Recommendations for GBU and other Honey Stakeholders:

- Develop targeted awareness-raising campaigns to educate both consumers and producers about rare honey varieties, honey uses and honey benefits, as well as to counteract popular myths such as crystallization meaning honey is contaminated. This includes creating visually appealing packaging, informative labelling, and storytelling that highlights their unique characteristics and health benefits. Encourage informed purchasing decisions based on quality indicators such as taste, consistency, and region of origin. Organize events, workshops, and tasting festivals to increase consumer engagement. Highlight the unique attributes of Georgian honey through digital campaigns and collaborations with influencers to reach a broader audience.
- Conduct regular surveys and tasting sessions to capture evolving consumer preferences. The insights gained can guide product development, marketing strategies, and pricing models to align with market demands. Encourage further research to conduct a more in-depth analysis of the health benefits associated with different Georgian honey varieties.
- Initiate cooperation with research institutions, laboratories and other industry stakeholders to increase the existing pollen database, honey production mapping and its characteristics. This would enable the verification of honey's geographical origin, enhancing its credibility and marketability in international markets.
- Promote transhumance practices to access a wider range of floral resources. This practice can significantly boost honey production, diversify offerings, and ensure sustainable utilization of floral landscapes.
- Develop and promote a structured honey categorization system within the industry, encouraging beekeepers to adapt practices accordingly. Promote certification and trademark initiatives, and offer laboratory services to honey-producing companies. Encourage beekeepers to adopt best practices, such as improving hygiene, managing pollen sources, and ensuring proper extraction and storage methods, to uphold product quality in line with the categorization system.
- Encourage beekeepers to adapt to climate change by considering its impact on honey types, floral sources, and seasonality. Promote the cultivation of climate-resilient honey flowers and trees like chestnut and acacia, which are vital for producing the most popular honey varieties. Provide resources and incentives for adopting climate-smart practices, including the use of climate adapted hives and high-quality beeswax, to ensure consistent honey production and mitigate climate-related challenges.
- Promote local honey consumption and maintain the country's apicultural heritage.
- Strengthen efforts to position chestnut honey in global markets, emphasizing its premium quality and unique attributes.

ANNEX 1. HONEY SAMPLE DISTRIBUTION ACROSS REGIONS AND MUNICIPALITIES

AJARA A.R.	10
Kobuleti	2
Keda	2
Khelvachauri	2
Shuakhevi	2
Khulo	2
Batumi (city)	0

Guria	5
Lanchkhuti	2
Chokhatauri	2
Ozurgeti	1

IMERETI	20
Khoni	2
Tkibuli	1
Samtredia	2
Terjola	2
Vani	2
Zestafoni	1
Tskaltubo	2
Kharagauli	2
Baghdati	2
Sachkhere	2
Tchiatura	2
Kutaisi (city)	0

SAMEGRELO-ZEMO SVANETI	14
Mestia	2
Senaki	2
Tsalenjikha	2
Martvili	2
Zugdidi	1
Abasha	1
Khobi	2
Chkhorotsku	2
Poti (city)	0

Racha-Lechkhumi-Kvemo Svaneti	6
Lentekhi	2
Ambrolauri	1
Tsageri	2
Oni	1

Mtskheta-Mtianeti	7
Mtskheta	2
Kazbegi	2
Dusheti	2
Tianeti	1
Akhalgori	0
Tbilisi (city)	0

Samtskhe-Javakheti	9
Adigeni	2
Aspindza	1
Akhaltsikhe	1
Akhalkalaki	2
Borjomi	2
Ninotsminda	1

Kakheti	15
Akhmeta	2
Gurjaani	2
Telavi	2
Lagodekhi	2
Kvareli	2
Sighnaghi	1
Sagarejo	2
Dedoflistskaro	2

Kvemo Kartli	13
Tsalka	2
Marneuli	2
Dmanisi	2
Gardabani	2
Tetritskaro	2
Bolnisi	2
Rustavi (city)	1

Shida Kartli	10
Khashuri	2
Gori	2
Kareli	2
Kaspi	2
Kurta (occ.)	2
Eredvi (occ.)	0
Tighvi (occ.)	0

Abkhazia A.R. *(occupied territory)*	0

ANNEX 2. DISTRIBUTION OF HONEY TYPES BY REGION

Part of Blind Testing	Honey Types	Ajara	Guria	Imereti	Kakheti	Kvemo Kartli	Mtskheta - Mtskheta	Racha-Lechkhumi-Kvemo Svaneti	Samgrelo- Zemo Svaneti	Samtskhe-Javakheti	Shida Kartli	# Honey Types
		3	*4*	*6*	*8*	*7*	*4*	*3*	*6*	*5*	*6*	
+	Acacia			5								5
+	Alpine Wildflower					5	2			6	1	14
	Apiaceae						1					1
	Bird's-foot Trefoil					1						1
+	Blossom		2	5	2			1	4		2	16
	Brown Knapweed				1							1
+	Christ's Thorn				2	2	3					7
	Common Thyme									1		1
	False Indigo		1									1
+	Forest Honeydew	5	2	2	7	2		4	4			26
+	Forget-Me-Not					1	2			1	3	7
+	Fruit	1	1	2	1				2	1	1	9
+	Goldenrod				1				2			3
	Ivy				1							1
+	Lime			1	1	2		3	3		1	11
+	Sweet Chestnut	4		7								11
	Unknown Plant								1			1
+	White Clover					1				3	3	7
	# Samples	*10*	*6*	*22*	*16*	*14*	*8*	*8*	*16*	*12*	*11*	

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The views expressed in this document may not necessarily reflect the views of the Swiss Development Cooperation, the Austrian Development Cooperation, the Swedish International Development Cooperation or Mercy Corps.

ALCP Alliances Caucasus 2
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