



ORIGINS



Honey Composition

- Main honey content is sugars: Fructose, glucose, other monosaccharides (25 others), which make up ~95% dry weight
- Moisture 16-20%
- Small, variable percentage of other organic compounds, pollens

Phytochemicals (phenols and VOCs), such as:

- tannins, phlobatanins, flavonoids, terpenoids, glycosides, saponins, alkaloids and flourides.
- In honey, these can vary beyond just plant species, it goes deep
- Organic compounds (bug food & stable carbon) in the soil effect the productivity of plants ecosystem

We still know so little....

- Organic compounds that occur naturally from living organisms
 - Grayanotoxins (mad honey)
 - Dicarbonyl (manuka honey)
 - Phytochemicals produced by plants that make honey what it is

What makes honey special as a product for people...

- Reflection of botanical makeup of a time in place
- Honey can act as a record
- hygroscopic – it absorbs water from its surroundings
- Antioxidant (polyphenols) and antimicrobial (peroxides, sugars)
- Food and fermentable

But jump back to the bee...

- A teaspoon per bee per lifetime (perhaps)
- Bees forage a diverse diet of pollens, sugars, and saps
- These ingredients go through enzymatic (proteins) changes, and retain VOCs
- Regurgitate the honey, dehydrate, and store (seal)

It's not the bees that mess it up, its
once people get involved.

Adulteration & Contamination

- Feeding (preharvest)
- Micro filtering
 - Removes the unique identifier for detection of origins of
- Heating and Blending (post harvest)
- Early harvesting & heating (mishandling)
- Contaminated filtration or storage equipment

Challenges for the beeples

- Its a lot of work to manage bees and honey
- Honey that is produced for honey (not pollination) is a costly affair
- There is much competition -- substitutes
- Often infused with tradition (stories)
- Nothing replaces relationships
- Honey doesn't go bad (if harvested and stored properly) – you are necessary!





Testing & Samples



Certificate of Analysis

Central Honey Ltd
 56 Oerika St
 Ashland
 Auckland, Corey Wallis
 Phone: 0212461758
 Email: corey@centralhoney.co.nz

Laboratory: 22-14520
Submitted by: N/A
Date Received: 19/04/2022
Testing Initiated: 19/04/2022
Date Completed: 20/04/2022
Order Number: N/A
Reference: N/A

Report Comments:
 Samples were collected by purchaser (or your agent) and analysed in accordance with Analytica Laboratories. Samples were in acceptable condition unless otherwise noted on this report.
 Specific testing details are available on request.

Results Summary

MPI Microbe Classification for Honey*

Laboratory ID	Sample ID	MPI Microbe Classification*
22-14520-2	22-CHB-0174	MEDICAL/CPH/SHPL/A

MPI Microbe Classification for Honey* Appearance:

[Signature]
 Nauvoo Begman
 Technologist - Genomics

MPI Microbe HMA in Honey

Laboratory ID	Sample ID	Microbe DNA
22-14520-2	22-CHB-0174	22.01

MPI Microbe HMA in Honey Appearance:

[Signature]
 Nauvoo Begman
 Technologist - Genomics

MPI Microbe Meters in Honey

Laboratory ID	Sample ID	4-Hydroxyphenylacetic acid (4-HMPA)	2-Methoxyphenylacetic acid (2-MPA)	2-Methoxyacetophenone (2-MAP)	3-Phenylacetic acid (3-PLA)
22-14520-2	22-CHB-0174	5.8	2.3	0.8	0.9

All tests reported herein have been performed in accordance with the methodology scope of accreditation with the exception of tests marked *, which are not accredited.
 This test report shall not be reproduced except in full, without the written permission of Analytica Laboratories.



Informe de Perfil Político y Sensorial de Miel					
Id. N°	Servicio para Miel del Sur	Fecha recepción:	Fecha de entrega:		
322	Muestra N° JCG 03	01/04/2021	06/04/2021		
Nombre	José Cuajtinán de Guzmán	Lote N°	95 00	Comuna	Puerto Aislado

Nombre de Plantas	N° granos contados	% de presencia
Familia: Eucalyptaceae Especie y NC: <i>Eucalyptus cordifolia</i> (Hale)	431	86,4
Familia: Proteaceae Especie y NC: <i>Eubolus coccineus</i> (Nobis)	6	1,2
Familia: Bromeliaceae Especie y NC: <i>Bromelia spica</i> (Vasey)	25	5,0
Familia: Cistaceae Especie y NC: <i>Callitriche paniculata</i> (Tuckerm)	21	4,2
Familia: Leguminosae (Fabaceae) Especie y NC: <i>Lathyrus sp.</i> (L. Alex)	1	0,2
Familia: Myricaceae Especie y NC: <i>Eucalyptus globulus</i> (Eucalyptus)	5	1,0
Familia: Cistaceae Especie y NC: <i>Wickstroemia bicksoniana</i> (Tuckerm)	3	0,6
Familia: Especie y NC: Sin identificar	7	1,4
Total de Granos contados:		499
		100

Observaciones:

Clasificación de la Miel: Miel Monofloral de Ume

Nota de Cata: Miel de aromas florales y herbáceos en nariz, de mediana intensidad y persistencia, miel en proceso de cristalización. En su sabor primario encontramos dulzor y acidez media, y en el retronasal encontramos aromas florales muy intensos y persistentes, con sabores notas dulces y a almendra.



[Signature]
 Nauvoo Fariña Miranda
 Especialista en Miel
 Meliflora SpA

Attn: Brian Woerner Method: MET-104

REPORT OF ANALYTICAL TEST RESULTS Original Report

Applicant Sample ID: ACV-001 Laboratory ID: AS33318

Pesticide Residue	Result PPM	LOD PPM	Pesticide Residue	Result PPM	LOD PPM
1-Naphthol	N.D.	500	Cyazofamid	N.D.	0,8
2,4-DMPF	N.D.	10	Cyflumetofen	N.D.	0,8
2,6-Dichlorobenzamide (BAM)	N.D.	2	Cyfluthrin	N.D.	4
3-hydroxycarbofuran	N.D.	2	Cyhalothrin lambda	N.D.	25
4-OH-Chlorothalonil	N.D.	2	Cymiazole	N.D.	25
Acetophate	N.D.	20	Cymoxanil	N.D.	3,2
Acetamiprid	N.D.	3,2	Cypermethrin	N.D.	1,6
Acetochlor	N.D.	100	Cyphenothrin	N.D.	25
Acrinathrin	N.D.	100	Cyprodinil	N.D.	1000
Alachlor	N.D.	100	DDE p,p'	N.D.	1,2
Aldicarb	N.D.	3,2	DEET	N.D.	3
Aldicarb sulfone	N.D.	5,2	DEET	N.D.	5,2
Aldicarb sulfoxide	N.D.	10	Deltamethrin	N.D.	50
Amelotradin	N.D.	1,2	Diazinon	N.D.	25
Atrazine	N.D.	1,2	Diazinon oxon	N.D.	1,6
Avermectin	N.A.	25,2	Dichlorvos	N.D.	2
Azinphos methyl	N.D.	25	Dicloran	N.D.	25
Azoxystrobin	N.D.	0,8	Dicofol	N.D.	150
Bensulfide	N.D.	2	Difenoconazole	N.D.	1,6
Berthelzone	N.D.	15,2	Diflubenzuron	N.D.	1,2
Bifenazate	N.D.	1,6	Dimethamid	N.D.	1,6
Bifenthrin	N.D.	25	Dimethoate	N.D.	2
Boscalid	N.D.	2	Dimethomorph	N.D.	30
Bromacil	N.D.	4	Dinotefuran	N.D.	10
Bromopropylate	N.D.	25	Diphenamid	N.D.	1,2
Bromuconazole	N.D.	5,2	Diphenylamine	N.D.	3
Buprofezin	N.D.	0,8	Diuron	N.D.	2
Captan	N.D.	125	Endosulfan I	N.D.	25
Carbaryl	N.D.	2	Endosulfan II	N.D.	25
Carbendazim	N.D.	10	Endosulfan sulfate	N.D.	25
Carbofuran	N.D.	0,8	Epoiconazole	N.D.	1,6
Carfentrazone-ethyl	N.D.	2	Esfenvalerate	N.D.	13
Chlorantraniliprole	N.D.	5,2	Ethion	N.D.	25
Chlorfenopir	N.D.	13	Ethofenprox	N.D.	125
Chlorfenvinphos	N.D.	50	Ethofumesate	N.D.	6
Chlorothalonil	N.D.	10	Etoazoxole	N.D.	0,4
Chlorpropham	N.D.	6	Famoxadone	N.D.	3,2
Chlorpyrifos	N.D.	5	Fenamidone	N.D.	10
Chlorpyrifos methyl	N.D.	10	Fenarimol	N.D.	10
Chlorthol-dimethyl	N.D.	3	Fenazaquin	N.D.	0,4
Clofentezine	N.D.	5,2	Fenbuconazole	N.D.	1,2
Clothianidin	N.D.	3,2	Fenhexamid	N.D.	3,6
Coumaphos	N.D.	2	Fenoxoprop-ethyl	N.D.	1,6
Coumaphos oxon	N.D.	0,4	Fenpropathrin	N.D.	25
Cyantraniliprole	N.D.	5,2	Fenpyroximate	N.D.	1,2



Meta, the gateway to los llanos



Campo Verde









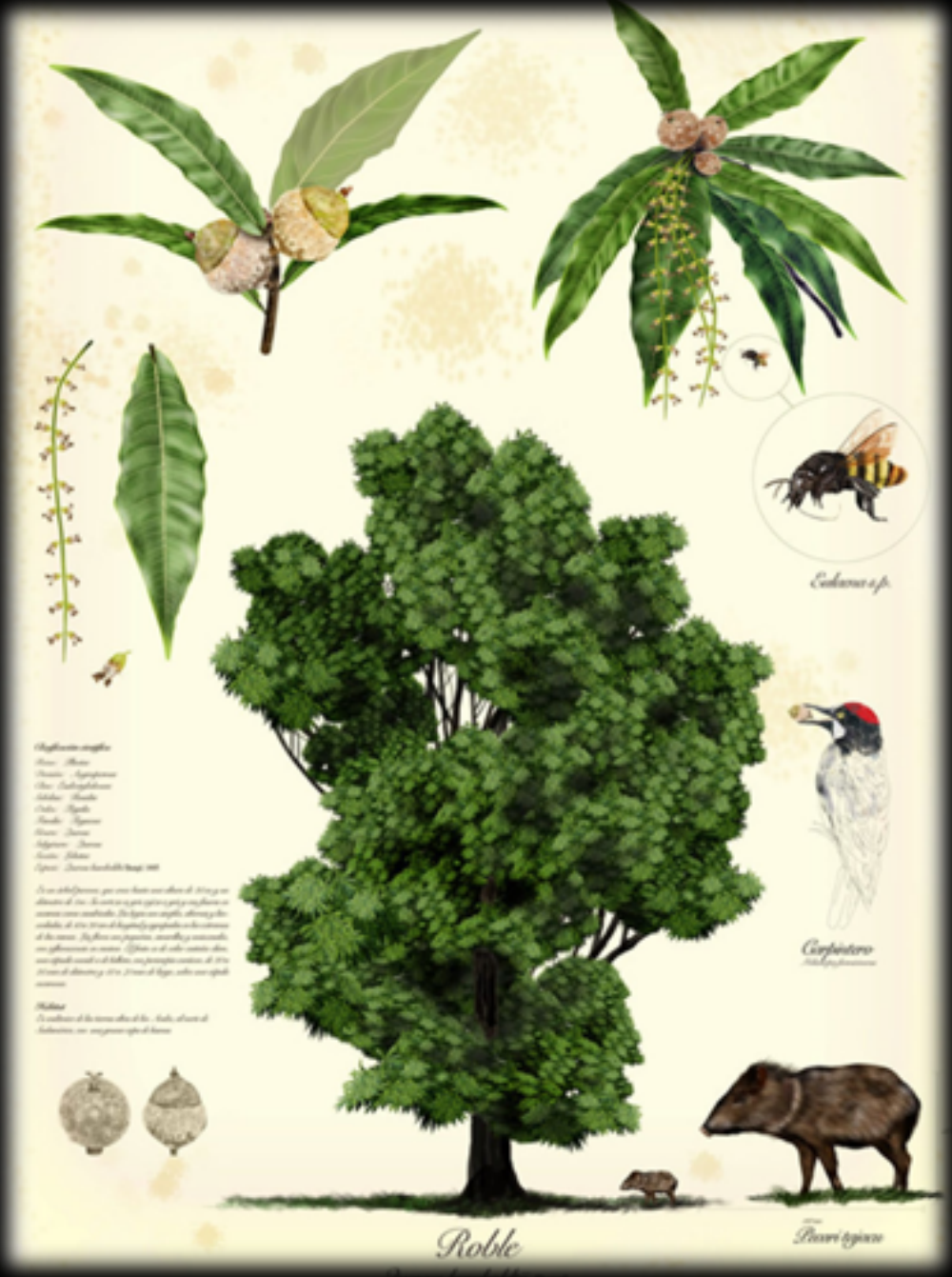




Mielato de Roble (Andean Oak Honeydew)



Quercus Humboldtii



Chile (Patagonia)





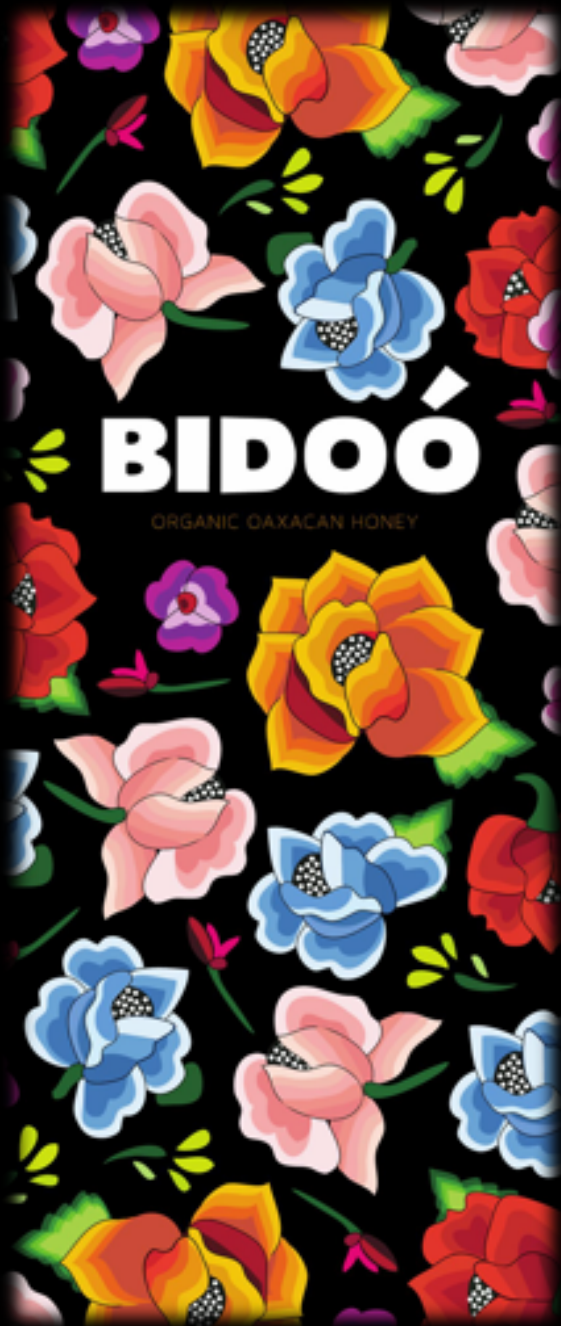






Mexico







Bidoó Collective

- Using a Langstroth system
- Coop had dissolved to to political issues, currently reorganizing.
- Also lost trust in large sourcing partners due to lack of diverse market
- Seasonal shifting of hives by foot (mule)



Tololote tree blossom



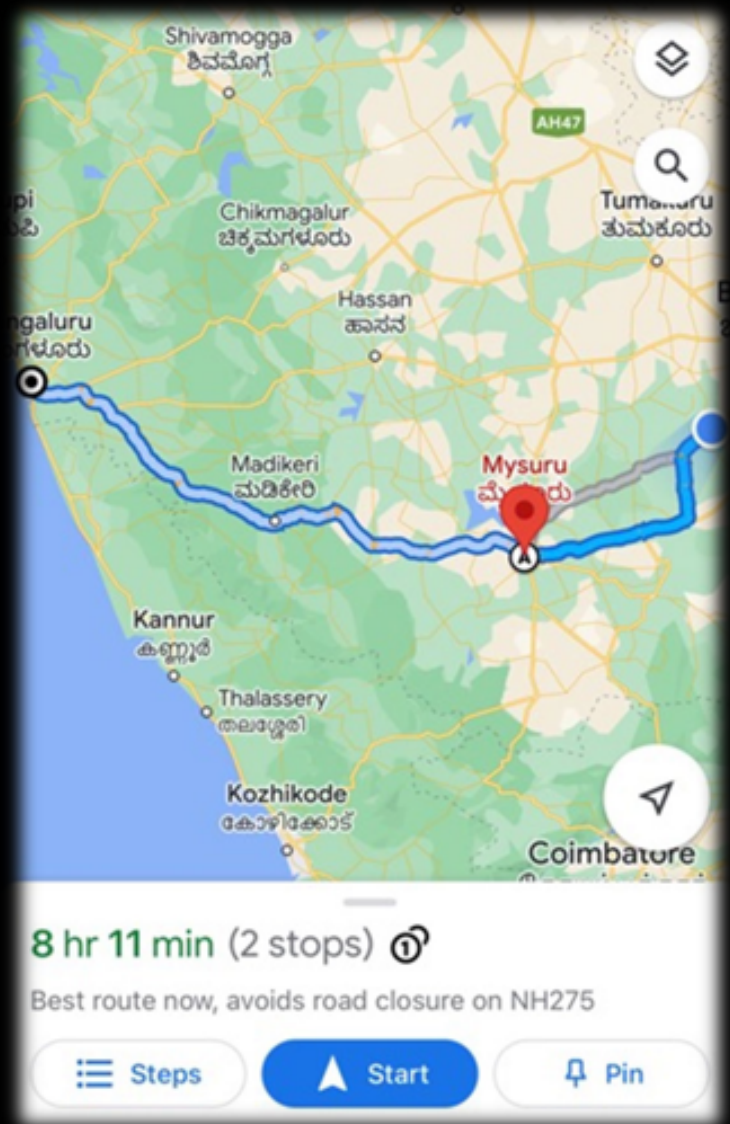
Cacahaunancha



Campanilla (bell flowers)











Western Ghat Mountains, Karnataka (South)



















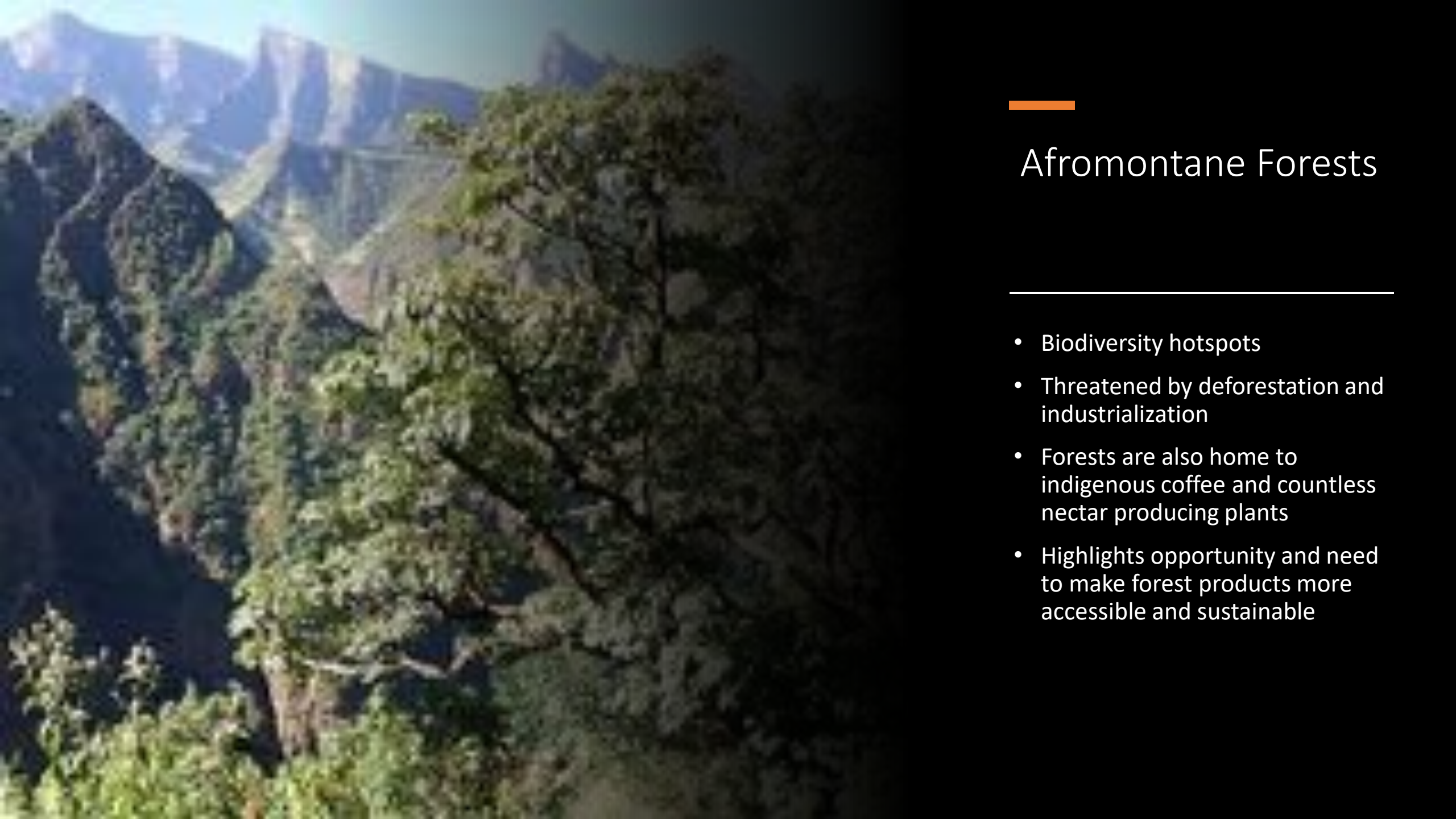








Rich culture of
tej and
consumption



Afromontane Forests

- Biodiversity hotspots
- Threatened by deforestation and industrialization
- Forests are also home to indigenous coffee and countless nectar producing plants
- Highlights opportunity and need to make forest products more accessible and sustainable

Sheka Biosphere Reserve





Geteme & Tree Hives





Atchafalaya Basin



Atchafalaya

- North America's largest swamp/floodplain
- Self cleaning water system
- Russian bee strains from USDA research in 90s
- Home to





A pristine picture of botanical diversity in our backyard

- Large spectrum of nectar producing botanicals
- Consider origins as not just botanicals, but places
- Much of the honey origin has to do with hive management
- Gives us broader context to think about vintage (year, season, place) rather than poly or monofloral
- How do we accurately and sustainably source honey
- Atchafalaya Swamp Honey







Modern Meadmakers' role

- You will play a huge part on how the honey industry evolves in the decades to come!
- Where does great mead start?
- What are those key components?
- How does using origin honey add value?
- Meadmakers positioned to be advocates for honeys (places) of the world



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“Don’t make a wedding dress out of a burlap sack, you might get some compliments, but you won’t be the show.”

-- Avery Allen











