Supplementary material

Physicochemical analysis and phenolic profiles of polyfloral and honeydew honey from Montenegro

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Table S1

Physicochemical parameters (water content, electrical conductivity, free acidity, diastase activity and HMF content) of honey samples.

Type of honey	No	Water content (%)	Electrical conductivity (mS/cm)	Free acidity (meq/kg)	Diastase activity (DN)	HMF (mg/kg)
Honeydew	1	16.33	1.11	30.16	29.26	< 5
Polyfloral	2	15.63	0.76	29.76	31.77	< 5
Honeydew	3	14.93	1.13	27.93	32.78	< 5
Honeydew	4	14.98	1.10	27.68	32.19	< 5
Polyfloral	5	16.45	0.73	28.55	41.17	< 5
Polyfloral	6	16.65	0.48	24.43	33.48	10.76
Honeydew	7	16.68	0.94	26.25	34.81	< 5
Honeydew	8	16.88	0.95	25.81	34.11	< 5
Polyfloral	9	15.70	0.54	28.21	40.63	< 5
Polyfloral	10	16.90	0.49	31.73	46.11	7.99
Polyfloral	11	15.65	0.70	27.67	32.43	< 5
Polyfloral	12	16.70	0.49	22.70	26.63	< 5
Polyfloral	13	15.85	0.64	29.16	33.67	< 5

Polyfloral	14	17.15	0.77	17.61	30.65	< 5
Polyfloral	15	15.93	0.54	23.75	39.07	< 5
Honeydew	16	16.28	1.07	32.18	31.50	5.50
Polyfloral	17	16.08	0.59	27.18	.34.14	< 5
Polyfloral	18	15.90	0.58	34.37	38.23	< 5
Polyfloral	19	17.10	0.51	30.96	33.12	< 5
Polyfloral	20	15.93	0.27	17.41	19.77	10.44
Polyfloral	21	14.90	0.28	17.58	25.56	< 5
Polyfloral	22	16.15	0.78	29.20	32.13	< 5
Polyfloral	23	16.83	0.61	27.65	35.81	6.50
Polyfloral	24	15.25	0.45	31.58	35.14	< 5
Honeydew	25	15.30	0.99	36.63	30.57	< 5
Honeydew	26	16.28	0.94	32.04	27.93	< 5
Polyfloral	27	16.03	0.75	32.04	42.16	10.95
Polyfloral	28	14.85	0.75	32.04	31.20	< 5

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Table S2

Comparison of the quantified average values for phenolic compounds of analyzed samples with some other reported results.

Type of honey	Authors of other studies	Similar values	Lower values	Higher values
Polyfloral	Gasic et al., 2014	Gal, Api, Chy, Lut, Pin, PchA	Kae, CA	p-Cou
	Nascimento et al., 2018	Que	No content of p-Cou and PchA	-
	Combarros-Fuertes et al., 2019	Chy	Que	Kae
Honeydew	Karabagias et al., 2016	Que and Kae (with higher maximum values)	Chy	-
	Vasić et al., 2018	Kae, Api, Kaef, Aca, Nar	Lower: Que, Chy, Pin, FA, SA For one size lower: p-HbA, PchA, VA, p-Cou, Nar-7-O-glu, Rut, Que-3-O-rham	p-HpaA
	Seraglio et al., 2017	Lut, PchA	Que, Kae, Pin, Nar, FA, p-Cou, CA, sum of phenolic compounds	
Polyfloral and Honeydew	Holouzka et al., 2016	VA, CA, p-Cou	For polyfloral: Pin, and no content of Tax, Nar, Eri, For honeydew: Nar, Tax, FA, and no content of Eri	Pin (for honeydew), PchA, p-HpaA
	Ciucure et al., 2019	Gal, Rut	Kae, Api, Pin, PchA, CA, p-Cou	-
	Orion et al., 2017	-	Que, Kae, Gal, Api, Lut, Pin, CA, p-Cou	-
	Escriche et al., 2014	-	-	Much higher: Que, Kae, Gal, Chy,

			Pin, Nar, CA, p-Cou
Salonen et al., 2017	For polyfloral: VA, p-Cou, FA, Que-3-O-rham	For polyfloral: Api For honeydew: p-Cou, FA, and no content of Api, VA, Que-3-O-rham	-
Socha et al., 2011	p-Cou (for polyfloral)	Lower: Kae, FA, For one size lower: Que, CA, FA (for honeydew), SA	p-Cou (for honeydew), Nar

Flavonoids: Que – Quercetin, Kae – Kaempferol, Gal – Galangin, Api – Apigenin, Chr – Chrysin, Aca – Acacetin, Lut – Luteolin,, Pin – Pinocembrin, Nar – Naringenin, Eri – Eriodyctol, Tax – Taxifolin; Phenolic acids: p-HbA – p-Hydroxybenzoic acid, PchA – Protocatechuic acid, VA – Vanilic acid, p-HpaA – p-Hydrohyphenylacetic acid, CA – Caffeic acid, p-Cou – p-Coumaric acid, FA – Ferulic acid, SA – Sinapic acid; Glycosides: Nar-7-O-glu – Naringenin-7-O-glucoside (Naringin), Rut – Quercetin-3-O-rutinoside (Rutin), Que-3-O-rham – Quercetin-3-O-rhamnoside.

Table S3

Correlation between TPC (mgGAE/100g), RSA (%), and sum of phenolic compounds (mg/100g) in honey samples, according to their botanic origin.

Honey type	**Honeydew honey**			**Polyfloral honey**		
Parameters	**TPC**	**RSA**	**Sum of phenolic compounds**	**TPC**	**RSA**	**Sum of phenolic compounds**
TPC	1			1		
RSA	0.907	1		0.928	1	
Sum of phenolic compounds	-0.305	0.018	1	0.061	-0.012	1

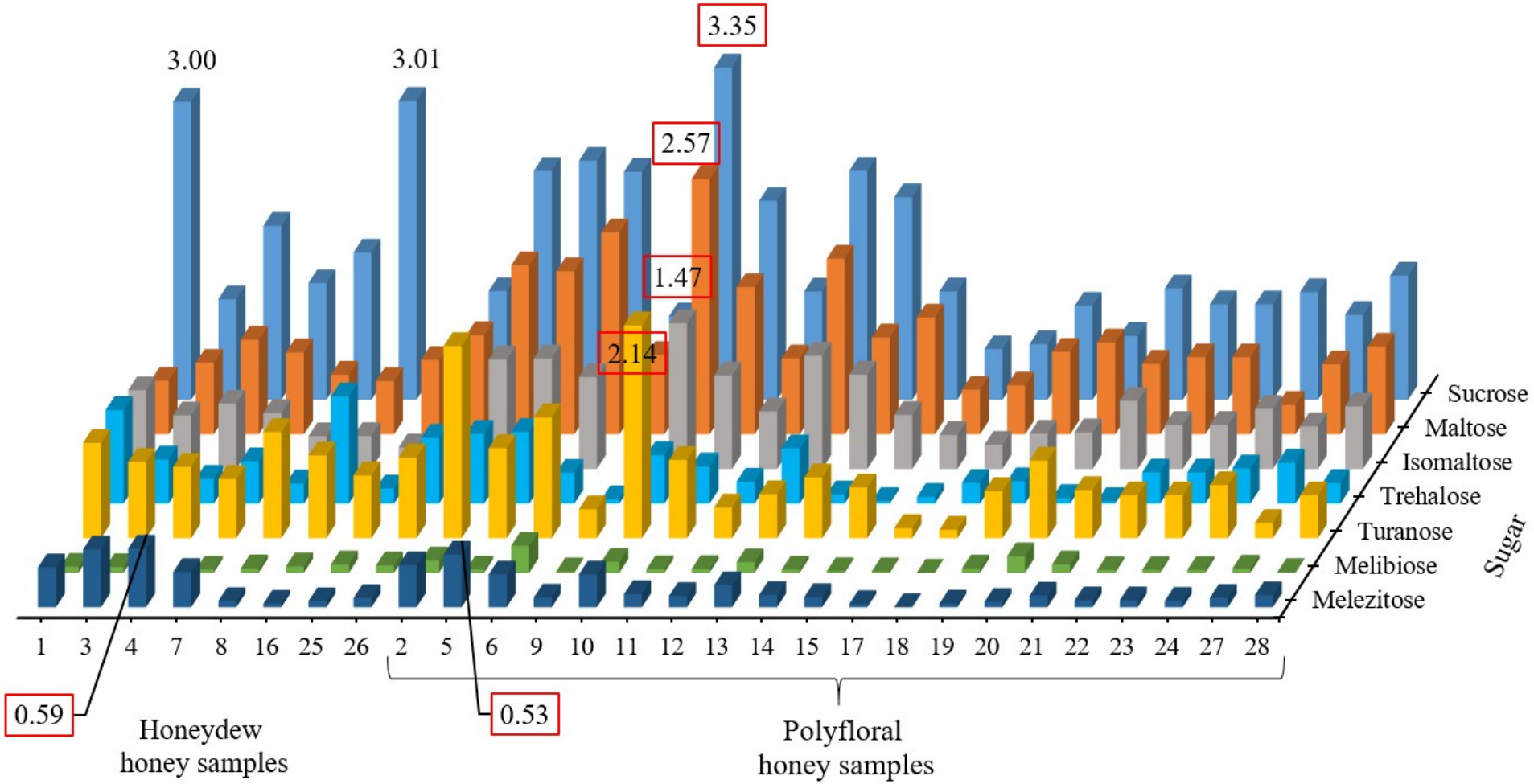

Figure S1. Distribution of content of oligosaccharides (g/100g) in honey samples.

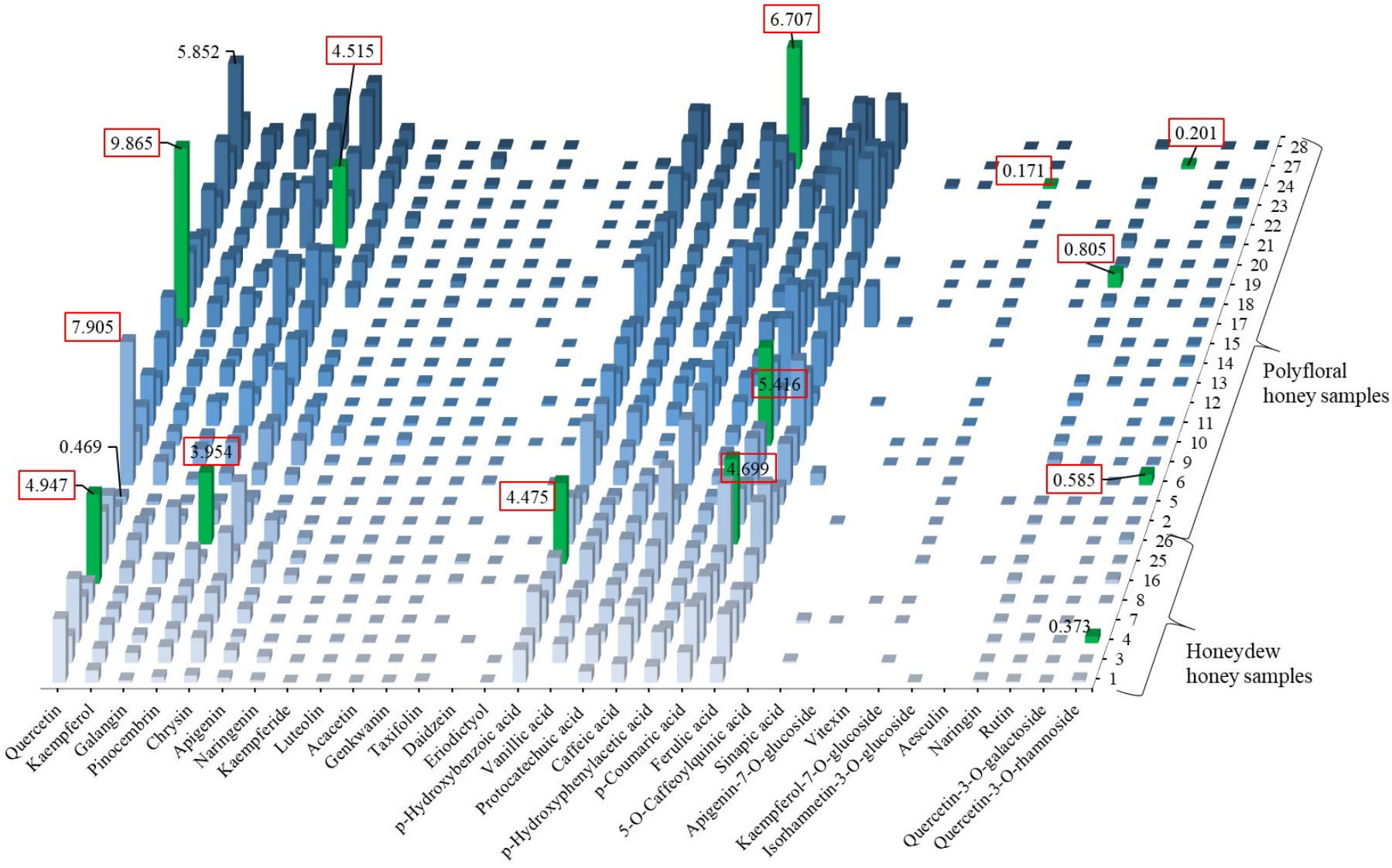

Figure S2. Distribution of content of each phenolic compounds (mg/kg) in honey samples.

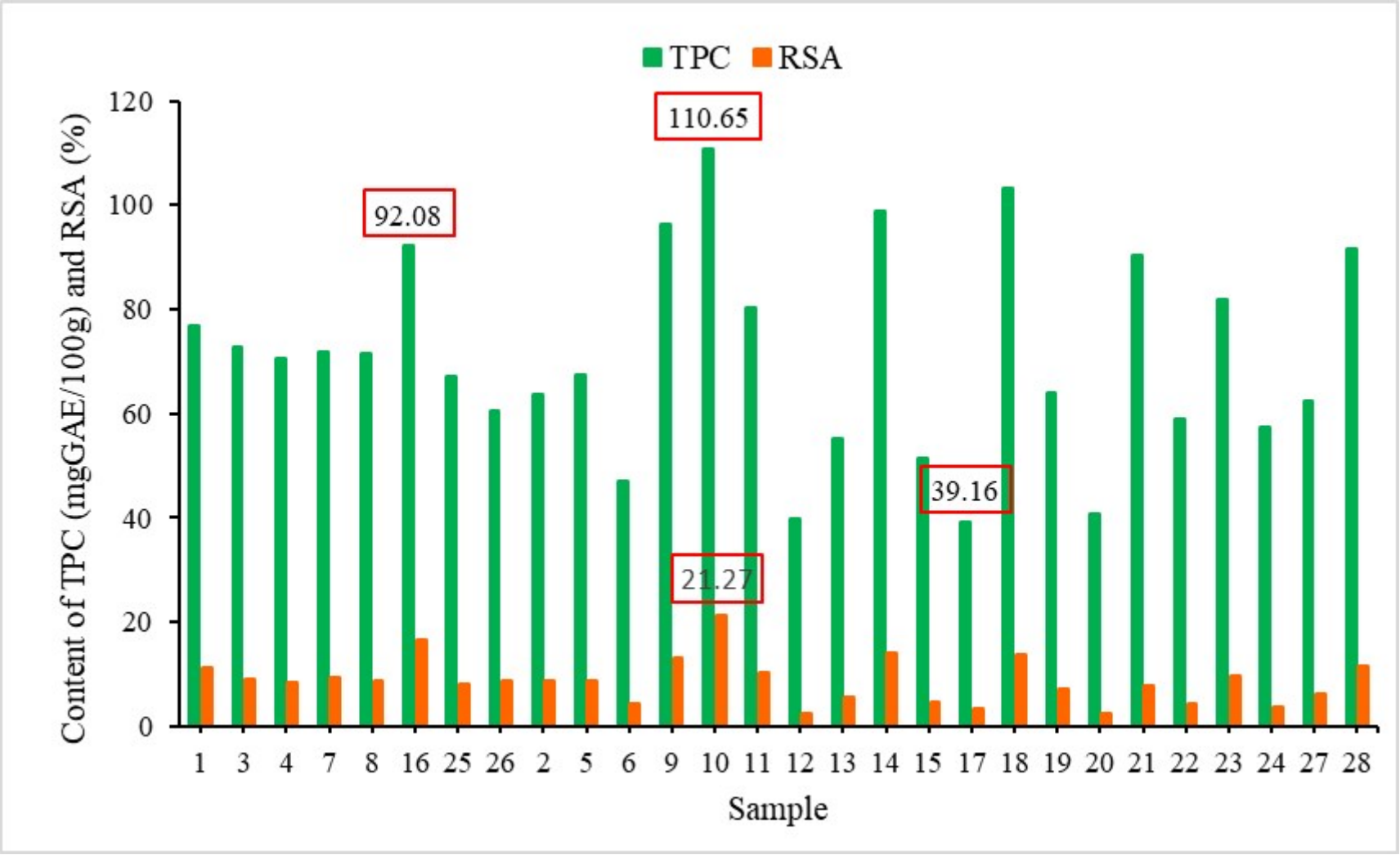

Figure S3. Distribution of content of TPC (mgGAE/100g) and RSA (%) in honey samples.

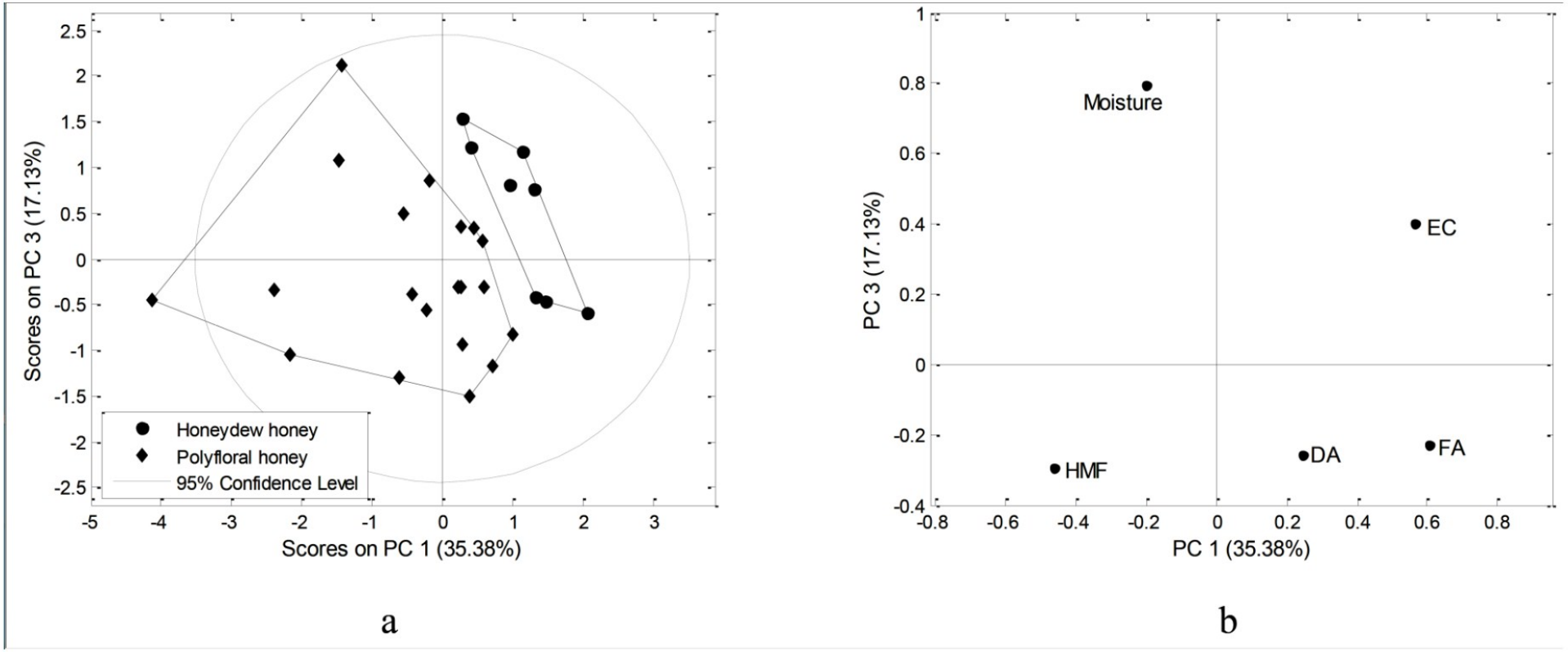

Figure S4. PCA applied on physicochemical parameters: a) score plot, b) loading plot.