

Maharishi Honey

Laboratory Results

*Quality Services International GmbH
Bremen*

C-7-03

Madhu Taste 3

Item Tested	Range	Result	Comments
Water	Below 18-19%	18.7% 17% 15.8%	Ideal is below 18% German Law says it should be less than 21% Tested 27 April 2004
HMF (Hydroxymethyl- furfural) <i>Indicator of whether the honey has been heated</i>	<40 mg/kg	12.9 mg/kg	Each time honey is heated, a chemical HMF is created. Freshly extracted honey contains very little or almost no HMF.
Diastase Activity <i>Indicator of how the bees are working to change starch into sugar. It is influenced by honey storage and heating and is thus an indicator of honey freshness and over- heating.</i>		44.9	Present standard is that it should not be lower than 8.
Invertase Activity	7-30	16.0	It is particularly sensitive to heat and storage damage and is used as a freshness indicator. It is an indicator of whether the honey has been heated. Enzymes are not stable at high temperatures. The range is 7-30, it has to be 8, and if lower the heat inhibits the enzyme activity and destroys protein in the honey.
Sugar Spectrum	0.9-1.9	1.19	Measures the fructose/glucose ratio. Looking at the ratio, we can determine if there is any adulteration, if any artificial honey or sweeteners were added. Reducing Sugars: Fructose, Glucose, Turanose, Maltose, Isomaltose, Maltotriose. Reducing Sugars give energy.
Adulteration 13C isotope-mass		No adulteration in our honey	Spectrometry assesses if there was an adulteration to the honey with cane sugar.

Item Tested	Range	Result	Comments
Element Analysis— Vitamins & Minerals			Indicates the nutritional value.
a. Manganese	0.3 mg/kg	4.7	
b. Chromium	0.2 mg/kg	<0.1	
c. Selenium	0.05 mg/kg	<0.2	
d. Zinc	3.5 mg/kg	0.8	
e. Copper	0.9 mg/kg	<0.1	
f. Potassium	450-500 mg/kg	950	
g. Calcium	36-60 mg/kg	75	
h. Magnesium	16-55 mg/kg	32	
i. Sodium	20-100 mg/kg	20	
j. Phosphorus	40-200 mg/kg	1	
k. Iron	9-20 mg/kg	2	
Electrical Conductivity		0.45	Measures the mineral content in the honey. The higher the mineral content, the higher the electrical conductivity. The range varies with the different kinds of honey, for example, blossom honey—up to 0.5, mixed blossom/honeydew—0.1-0.79, forest/honeydew—0.8
Antibiotics		Not detectable	Antibiotics tested: Streptomycins, Sulphonamides Tetracyclines. No legal limit acc. EC-Rag 2377/90, encl I means no permit for using antibiotics in bee keeping.
Heavy Metals		Not detectable	
a. Cadmium			
b. Lead			
c. Mercury			
Chloropesticides		Not detectable	
Phosphorous Pesticides		Not detectable	These pesticides revolve around Phosphorus functionality.

Item Tested	Range	Result	Comments
PH value	3-6	3.8	PH value is a measure along with the parameter of acidity. The pH value depends on blossom or honeydew: 3.3–4.6 blossom 4.2–5.5 honeydew
Acidity	10-50 limit: 50mmol/kg	32.5 mmol/kg Table Honey	Acidity is an important quality criterion because honey fermentation causes an increase of acidity.
Pollen			The predominant, secondary and minor pollens were tested. The whole sediment is checked. Honeydew is characterized by special sediment components e.g spores of fungi, hyphae of fungi, which belong to the normal honeydew “Flora”. Pollen can only be identified as a source where the bees collected nectar. Honeydew elements have nothing to do with foreign elements; they belong to the natural sediment of honeydew. The predominant pollen of this honey is Mimosa. Many secondary and minor pollens were also found.
HD Elements		None	HD elements measures foreign matters in the honey i.e. wax fungal spores yeast and starch. This honey contained very little or none of these things and was in the acceptable range.
Botanical origin		Blossom	
Geographical origin		Brazil	
Sensory Qualities		honey-specific	
Kind of Honey		Blossom	
Amitraz and Phenol Bee treatments		Not detectable	
Iodine		<0.2 which is Not detectable	The lower limit of practicable working range, may differ matrix correlated.

Item Tested	Range	Result	Comments
Flavonoids		<0.04	
Ethanol	<50 mg/kg <20 mg/kg in Germany	38.5	
Glycerole	<300 mg/kg	150	
Phenol	<0.05	0.08	
Vitamins			
a. C		<1.2	
b. Vitamin B1		<24 µg/100g	
c. Vitamin B2		240 µg/100g	
d. Vitamin B6		69 µg/100g	
e. Vitamin E		<0.08 mg/100g	
f. Vitamin A		<17 µg/100g	

Item Tested	Range	Result	Comments
Amino acids			
a. Alanine		20.6 mg/100g	
b. Alpha-amino butric acid		<0.05 mg/100g	
c. Arginine		8.1 mg/100g	
d. Asparagine		Not determined	
e. Asparagine acid		34.8 mg/100g	
f. Carnosine		<0.5 mg/100g	
g. Citrulline		<0.5 mg/100g	
h. Cystine		<0.5 mg/100g	
i. Glutamine		Not determined	
j. Glutamine Acid		42 mg/100g	
k. Glycine		17 mg/100g	
l. Histidine		9.7 mg/100g	
m. Hydroxyproline		<0.5 mg/100g	
n. Isoleucine		21.9 mg/100g	
o. Leucine		31.6 mg/100g	
p. Lycine		19.2 mg/100g	
q. Methionine		6.3 mg/100g	
r. Ornithine		0.5 mg/100g	
s. Phenylalanine		67.3 mg/100g	
t. Phosphoethanolamine		<0.5 mg/100g	
u. Proline		96.0 mg/100g	
v. Sarcosine		Not determined	
w. Serine		19.5 mg/100g	
x. Taurine		<0.5 mg/100g	
y. Threonine		20 mg/100g	
z. Tyrosine		6 mg/100g	
aa. Valine		27.2 mg/100g	