

# *Maharishi Honey*

## *Laboratory Results*

*Laboratory for Trade and Environment  
Hamburg*

**GL-9-02**

**Madhu Taste 1**

Item Tested	Range	Result	Comments
Water	13.5-20.5%  less than 18% is ideal	16.9%	Anything below 18% is good German Law says it should be less than 21%  Organic standard is 18%
HMF (Hydroxymethyl-furfural)	0-40 mg/kg	1.1 mg/kg	<i>Indicator of whether the honey has been heated.</i> The maximum it should be is 40mg/kg. Each time honey is heated, a chemical HMF is created. Freshly extracted honey contains very little or almost no HMF.
Diastase Activity	3-50	17.1	<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> Present standard is that it should not be lower than 8.
Invertase Activity	0-200	111.4 U/kg	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 in the tests done in Bremen. Hamburg used a newer method for testing where the range is 0-200
Sugar Spectrum	0.9-1.9	1.21	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.
Electrical Conductivity	0.1-1.5	0.52 mS/cm	Measures the mineral content of 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

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<b>Element Analysis— Minerals</b>			
a. Potassium	100-4700 mg/kg	1150	
b. Calcium	5-260 mg/kg	55	
c. Magnesium	7-126 mg/kg	82	
d. Sodium	6-400 mg/kg	13	
e. Phosphorus	23-58 mg/kg	95	
f. Iron	1-20 mg/kg	2.3	
g. Manganese	<1.0-9.5 mg/kg	1.2	
h. Silicon	14-72 mg/kg	42	
i. Zinc	1.6-5.1 mg/kg	<1.0	
j. Copper	0.2-0.5 mg/kg	0.4	
k. Chloride	23-201 mg/kg	230	
l. Chromium	0-0.15 mg/kg	0.13	
m. Selenium	0.05 mg/kg	<0.2	
Bee Treatments	Amitraz <0.005 mg/kg Phenol <0.05 mg/kg	Not detectable	Measures whether specific drugs like Amitraz and Phenol were given to the bees to get rid of Varroa. This should be zero. Ours is less than zero and <b>not detectable</b> which means there is no trace of these drugs in our honey. Amitraz measured <0.005 mg/kg. Phenol measured <0.05 mg/kg. The lab explained that in today's methods they tested to the lowest level that is possible with methods for detectable substances. In the future the limits may be lower. At present in certificates you have to say the limit you have found where it does not exist, thus our results. The lab confirmed that they found no traces of Bee treatments.
Protein	0.1-1.3	0.4	Which is the normal content for blossom honey.

Item Tested	Range	Result	Comments
Free Acid or Acidity	limit: 50mmol/kg	25.8 mmol/kg	This is an important quality criterion because honey fermentation causes an increase in acidity.
Antibiotics		Not detectable	19 tested (Sultonamides, Tetracyclines, Streptomycin).
Honey; % sugar from C4 plants, C13 Isotope Analysis	0-5	0.0 % No adulteration	This analysis assessed if there was an adulteration to the honey with cane sugars or corn syrup. The labs confirmed that this is pure honey.
<b>Heavy Metals</b> a. Cadmium b. Lead c. Mercury	no range 0.05-1.8 mg/kg no range	Not detectable <0.01 mg/kg <0.05 <0.005	The lab explained that in today's methods, they tested to the lowest level that is possible with methods for detectable substances. In the future, the limits may be lower. At present in certificates you have to say the limit you have found where it does not exist, thus our result. The lab confirmed that they found no trace of heavy metals.
<b>Vitamins</b> a. C b. Vitamin B1 c. Vitamin B2 d. Vitamin B6 e. Niacinsäure f. Folic acid g. Pantothenic acid h. Biotin	1-4 mg/100g 0-0.004 mg/100g 0.02-0.10 NA NA NA NA	1.9 mg/100g 0.2 mg/100g 0.01 mg/100g 0.039 mg/100g 0.29 mg/100g 11 µg/100g 0.19 mg/100g 1.4 mg/kg	
64 Chloropesticides		Not detectable	The lab explained that in today's methods they tested to the lowest level that is possible with methods for detectable substances. In the future the limits may be lower. At present in certificates you have to say the limit you have found where it does not exist, thus our result. The lab confirmed that they found no trace of Chloropesticides.

Item Tested	Range	Result	Comments
Phosphorous Pesticides		Not detectable	Tested 9. These pesticides revolve around Phosphorus functionality. The lab explained that in today's methods they tested to the lowest level that is possible with methods for detectable substances. In the future the limits may be lower. At present in certificates you have to say the limit you have found where it does not exist, thus our result. The lab confirmed that they found no trace of Phosphorous Pesticides.
Pollen Analysis			The lab said that Maharishi Honey had the widest spectrum of pollen they have seen. The two major pollens are very fragrant pollen. The predominant pollen makes up 85% of the pollen. The lab mentioned that a honey coming from one specific flower is always more valuable. They counted 500 pollen in our honey although there are even more pollens 500 are the norm for testing in Germany and EU countries. It is the norm to count 500 pollens. In our honey there is predominant pollen, which makes up 85% of the pollen. The lab also found Mimosa pollen, which is rare pollen.
Total Antioxidant Status	NA	2.2 mmol/kg	The lab was surprised to see this number in Honey and mentioned that it seemed higher than one would expect. They have no range for honey but corresponding to other foods it is high.
Glucose oxidase	0.3-11	5.2 µg/g	Glucose oxidase is an enzyme, which is produced by H <sub>2</sub> O <sub>2</sub> , hydrogen peroxide.
Iodine	0.016-0.021mg/kg	0.3 mg/kg	
Sulfate	43-151 mg/kg	285 mg/kg	
Ethanol	< 50 mg/kg < 20 mg/kg in Germany	13.6 mg/kg	The lower the result the better. A high level could mean fermentation in the Honey.
Glycerol	< 300 mg/kg	101 mg/kg	The lower the result the better. A high level could mean fermentation in the Honey.

Item Tested	Range	Result	Comments
<b>Amino acids</b>			
a. Asparagine	NA	249 mg/kg	<b>Primary or Essential Amino acids found in Maharishi Honey:</b> 1. Arginine 2. Histidine 3. Valine 4. Isoleucine 5. Lysine 6. Leucine 7. Phenylalanine
b. Cysteic acid	NA	Not present	
c. Aspartic acid	3-109	61 mg/kg	
d. Hydroxyproline	NA	Not found	
e. Glutamine	NA	379 mg/kg	
f. Threonine	4-38	25 mg/kg	
g. Serine	1-236	37 mg/kg	
h. Glutamic acid	13-190	131 mg/kg	
i. Proline	180-800	458 mg/kg	
j. Glycine	3-44	10 mg/kg	
k. Alanine	3-105	40 mg/kg	
l. Valine	2-105	32 mg/kg	
m. Cystine	0-61	Not present	
n. Methionine	0-27	1 mg/kg	
o. Isoleucine	1-11	5 mg/kg	
p. Leucine	3-57	6 mg/kg	
q. Tyrosine	8-69	48 mg/kg	
r. Phenylalanine	3-160	60 mg/kg	
s. Hydroxyllysine	NA	Not present	
t. Tryptophan	NA	Traces	
u. Ornithine	NA	74 mg/kg	
v. Lysine	1-62	62 mg/kg	
w. Histidine	6-107	4 mg/kg	
x. Arginine	0-58	159 mg/kg	
y. Methylhistidine	NA	Not present	
z. Taurine	NA	4 mg/kg	

Item Tested	Range	Result	Comments
<b>Microbiological Tests</b>  a. Aerobic mesophilic  b. Moulds  c. Yeasts  d. Mesophilic Sulphite-reducing clostridia  e. Bacillus cereus	  CFU/g: 10 to the fourth power  CFU/g: 10 to the fifth power  CFU/g: 10 to the fourth power  CFU/g<10 to the fourth power	  CFU/g: <10  CFU/g: <10  CFU/g: <10  CFU/g: <0.3  CFU/g: <10	  No range available but it meets the limit from Swiss hygienic legislation          
Antibacterial Activity			No result found
Flavanoids	NA	Negative	