



# Bulk Naturals Wholesale LLC

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## RAW MANUKA HONEY UMF 15+

MGO FORECAST

LAB REFERENCE: 23-26420

**Date Received:** June 9, 2023  
**Date Completed:** June 9, 2023

**QA Signature:** Steven Konert

INITIAL TEST RESULT		
Specification	Units	Result
Dihydroxyacetone (DHA)	mg/kg	1742
Methylglyoxal (MG/MGO)	mg/kg	581
Ratio DHA:MG/MGO	Ratio	3.0
Non-peroxide Activity (NPA)	%w/v phenol eq.	16.1
Hydroxymethylfurfural (HMF)	mg/kg	12

### Forecast of Results

This forecast is based on a model developed by Analytica and validated using test results from samples incubated by Analytica at known temperatures. Best endeavors have been used to verify that the model provides a reasonable forecast of changes in honey samples. However, Analytica provides no guarantee that future test results will be the same as those provided in this forecast report and accepts no liability for the consequences of decisions made based on these forecasts.

MAXIMUM MG			
Storage Temperature	20°C	23°C	27°C
Storage Time (weeks) required from date tested	96	64	37
DHA (mg/kg) after this storage time	996	999	1005
Maximum Methylglyoxal (MG/MGO)	752	748	743
Ratio DHA:MG/MGO	1.3	1.3	1.4
Maximum NPA (%w/v phenol equivalent)	18.9	18.8	18.7
HMF (mg/kg) after this storage time	26	30	37

FORECAST OVER TIME										
		Storage at 20°C			Storage at 23°C			Storage at 27°C		
Compound	Initial Value	4 Months	8 Months	12 Months	4 Months	8 Months	12 Months	4 Months	8 Months	12 Months
DHA (mg/kg)	1742	1574	1421	1284	1496	1284	1103	1345	1039	803
MG/MGO (mg/kg)	581	645	691	723	669	720	744	704	743	727
DHA:MG/MGO	3.0	2.4	2.1	1.8	2.2	1.8	1.5	1.9	1.4	1.1
NPA	16.1	17.2	17.9	18.4	17.6	18.4	18.7	18.1	18.7	18.5
HMF (mg/kg)	12	14	17	19	17	22	27	24	35	47

Non-peroxide activity (NPA) values are calculated from the methylglyoxal concentration in the honey according to the requirements of the client. The calculation is based on published data (\*) comparing the NPA and the methylglyoxal concentration measured in a range of honey samples. These calculated values do not infer that the honey is or is not manuka honey.