Analytica Laboratories Limited
Ruakura Research Centre
10 Bisley Road
Hamilton 3214, New Zealand
Ph +64 (07) 974 4740
sales@analytica.co.nz
www.analytica.co.nz

# Certificate of Analysis

BeeNZ Ltd
85 Tetley Road, RD2
Katikati 3178
Attention: Julie Hayes
Phone: 07 549 4178
Email: kate@beenz.co.nz

Lab Reference: 19-38980
Submitted by: N/A
Date Received: 8/11/2019
Date Completed: 11/11/2019
Order Number: Larnac
Reference: 19V8

## Report Comments

Samples were collected by yourselves (or your agent) and analysed as received at Analytica Laboratories. Samples were in acceptable condition unless otherwise noted on this report.

## Results Summary

### 3in1

| Laboratory ID | Sample ID | Methylglyoxal (MG) | Non-Peroxide Activity* (NPA) | Hydroxymethylfurfural (HMF) |
|---|---|---|---|---|
| | *Units* | mg/kg | %w/v phenol eq. | mg/kg |
| | *Reporting Limit* | 8 | 1.3 | 1 |
| 19-38980-1 | 19V8 | 982 | 22.1 | 26 |

**3in1 Approver:**

Hannah Crossan, M.Sc (Hons)
Technician

## Method Summary

**3in1** Determination of Dihydroxyacetone (DHA), Methylglyoxal (MG) and Hydroxymethylfurfural (HMF) by aqueous extraction, derivatisation, and UPLC analysis.

**NPA** Non-Peroxide Activity (NPA) values are not directly measured by the laboratory, but are calculated from the measured methylglyoxal concentration in the honey according to the requirements of the client. The calculation is based on published data(†) comparing the NPA and methylglyoxal concentration measured in a range of honey samples. These calculated values are not accredited by IANZ and do not imply that the honey is or is not manuka honey.
NPA values less than 5 are an estimate based on extrapolation of the relationship between methylglyoxal and NPA

*(†) Isolation by HPLC and characterisation of the bioactive fraction of New Zealand manuka (Leptospermum scoparium) honey. C. J. Adams, et al. Carbohydrate Research 343 (2008) 651-659. And, Corrigendum to "Isolation by HPLC and characterization of the bioactive fraction of New Zealand manuka (Leptospermum scoparium) honey" [Carbohydr. Res. 343 (2008) 651]. Carbohydrate Research 344 (2009) 2609. C. J. Adams, et al.*

All tests reported herein have been performed in accordance with the laboratory's scope of accreditation with the exception of tests marked *, which are not accredited.
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