

BUSINESS/RESEARCH

# THE IMPACT OF MPI'S DEFINITION OF MĀNUKA HONEY

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A review of hundreds of honey samples tested between August 2017 and February 2018 provides an indication of the impact that the new MPI mānuka honey definition will have. While a significant majority of honey with more than 263 mg/kg of methylglyoxal (MGO) in it (NPA/UMF of 10+) classifies as monofloral mānuka, only about 50% of honey with 83–263 mg/kg of MGO (NPA/UMF between 5 and 10) classify as monofloral mānuka.

A lesser known but very important feature of the new definition is that honeys with high 3-PLA concentration (> 400 mg/kg) and moderate 2'-MAP levels (> 1.0 and < 5.0 mg/kg) classify as non-mānuka.

On 5 February 2018, the Ministry for Primary Industries (MPI) implemented a new definition of mānuka honey, comprising four chemical markers and one DNA marker from mānuka pollen. The required level of one of the chemicals, 2'-methoxyacetophenone (2'-MAP), was contentious and MPI made two changes to its concentration before settling on a level of greater than or equal to 5 mg/kg for monofloral mānuka, and greater than or equal to 1 mg/kg for the definition for multifloral mānuka honey. The full definition is explained in Table 1.

The MPI definition is a significant change from the way that mānuka honey has been defined over the last 30 or so years. A very valuable export business was developed based on non-peroxide activity of mānuka honey. As the current harvest season is in full swing, there is a lot of interest in the impact that the change in the definition will have on the value of current honey stocks, and the flow-on effects to customers in New Zealand and overseas.

Analytica Laboratories tests many samples of honey from small and large beekeeper companies and honey producers from throughout New Zealand. The samples we do receive are likely to be a good representation of typical honey that is thought to be monofloral and multifloral mānuka. We took the opportunity of reviewing test results for honeys sent to the laboratory between August 2017 and February 2018. The origin of the data remains confidential.

The data set consisted of many hundreds of samples that had results for (1) the four MPI chemical markers and (2) the MPI mānuka

Chemical	Monofloral	Multifloral
3-phenyllactic acid	≥ 400 mg/kg	≥ 20 and <400 mg/kg
2'-methoxyacetophenone	≥ 5 mg/kg	≥ 1mg/kg
2-methoxybenzoic acid	≥ 1 mg/kg	≥ 1 mh/kg
4-hydroxyphenyllactic acid	≥ 1mg/kg	≥ 1mg/kg
Pollen DNA	< Cq 36	< Cq 36

Table 1. MPI's definition for monofloral mānuka and multifloral mānuka honey.

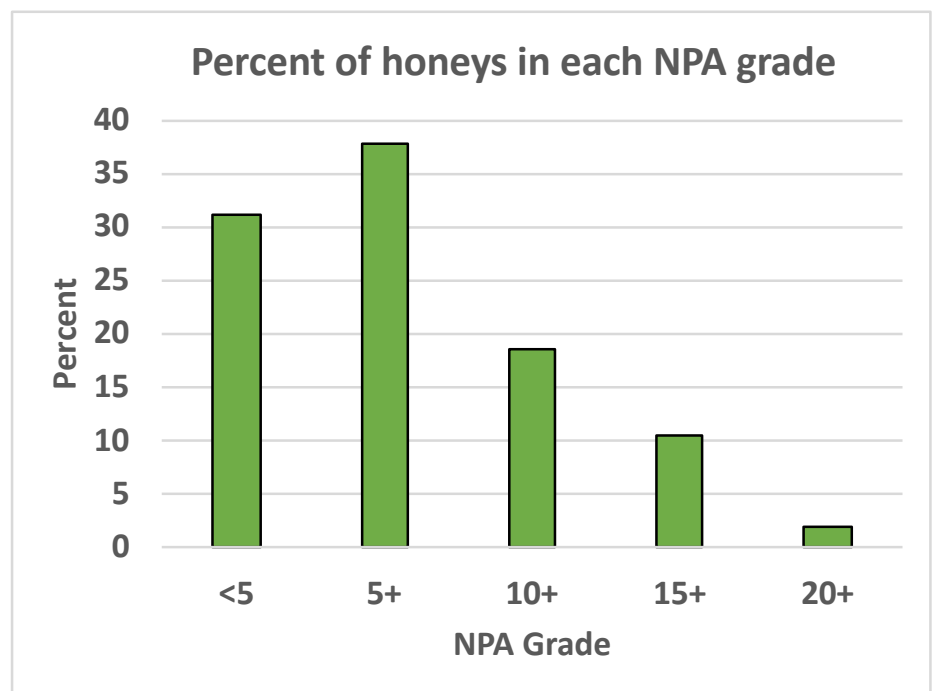


Figure 1. Distribution of honeys in each NPA grade.

pollen DNA test and (3) DHA, MGO, NPA and HMF. Sixty-nine percent of the honeys had NPA levels of 5 (an MGO concentration of 83 mg/kg) or greater. The distribution of honeys in each of the NPA grades is shown in Figure 1.

When the MPI definition is applied to the samples:

- 100 % of the 20+ honeys are classified as monofloral mānuka

- 95% of the 15+ honeys are classified as monofloral mānuka. The remaining 5% are classified as non-mānuka ("other")—in all of these cases, the reason for the honeys being classified as non-mānuka was that they failed the DNA test
- In the 10+ category, 82% were classified as monofloral mānuka, 8% as multifloral mānuka ("Blend"), and 10% as non-mānuka.

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The NPA grade of greatest interest is the 5+ category. Only 50% of these honeys are classified as monofloral mānuka, 21% as multifloral mānuka and the remaining 27% as non-mānuka. Yet, 21% of honeys with NPA values less than 5 classify as monofloral mānuka.

The 5+ category is where the greatest impact of the new MPI definition will be felt. Of all the hundreds of honeys with NPA levels equal to or greater than 5, 55% of them were in the 5+ category ( $\geq 5$  and  $< 10$ ). Almost 50% of those fail the MPI mānuka definition, and classify as non-mānuka.

One lesser-known consequence of the new MPI definition is that honey with high 3-PLA results (greater than 400 mg/kg) but moderate 2'-MAP results (greater than or equal to 1, but less than 5 mg/kg) do not classify as multifloral mānuka, as one would expect. The MPI definition classifies these honeys as non-mānuka. If the 3-PLA were to be less than 400mg/kg, these honeys would become multifloral mānuka. Alternatively, if the 2'-MAP were to be 5 mg/kg, or greater, they would become monofloral mānuka. These samples would have been classified as monofloral mānuka under the first version of the MPI definition, where a 2'-MAP concentration  $\geq 1$  mg/kg was considered a monofloral mānuka.

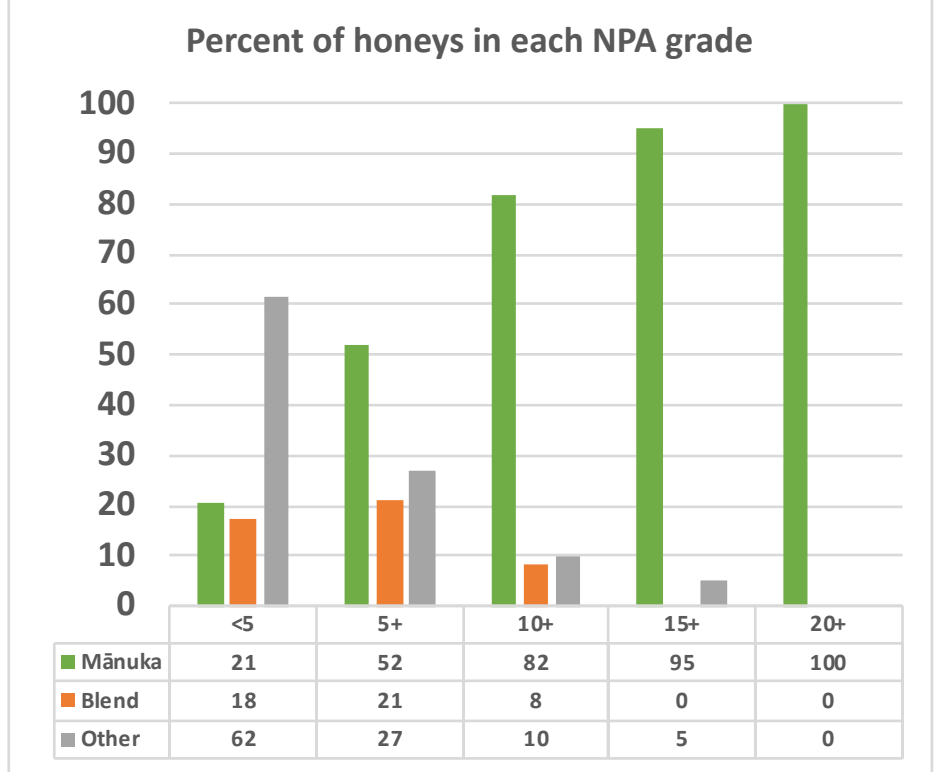


Figure 2. Distribution of honeys in each NPA grade when the MPI definition is applied to the samples.

