COLLECTING A REPRESENTATIVE HONEY SAMPLE

The honey industry relies heavily on laboratory results to determine the value of honey, to formulate blends and to ensure compliance with specifications. The testing laboratory has controlled procedures in place to ensure robust analysis and accurate reporting – but the laboratory does not have control over the quality of the sample it receives for analysis. Despite sampling being an integral part of the honey testing process, there was no standardised sampling protocol within the industry until recently. Hill Laboratories, under contract to the Ministry for Primary Industries, recently conducted a survey to gain a better understanding of the techniques being used within the industry for honey sampling and then evaluate the effectiveness of these techniques. The ultimate aim of the study was to produce a Sampling Guide for the industry.

This survey found that the two key sampling points in the production of honey was from the 300 kg drum used to store honey and the final packaged product ready for sale. Sampling from the drums almost always involved the use of a honey sampler or "corer", but issues were identified that could produce samples that were not representative. Problems arose when the mixing steps prior to transfer to the drum were inadequate, resulting in the honey composition varying during the filling process. Unsurprisingly, complete mixing was also a critical step prior to filling the final packs for sale.

Based on the findings from this study, Hill Laboratories developed a honey sampling protocol to ensure test results are representative of your product, allowing you to submit your results for selling or exporting, with confidence.

Sampling 300 kg Drums

1. A whole core sample must be collected through the entire depth of the drum. Because the corer may become blocked and not include honey from the lower zones of the drum, the core should be collected in four portions from different vertical zone of the drum; i.e., the 0-25% zone, the 25-50% zone, the 50-75% zone, and the 75-100% zone. To facilitate this, marks could be made on the corer barrel at 30, 60, 90, and 120 cm from the corer face.

2. Using a commercial honey corer, a vertical core sample should be collected just to the 30 cm mark (Note 1). The corer then is removed from the honey and the sample expelled into a mixing container.

3. The corer face is sealed by holding the plunger handle firmly with the corer handle, and the corer re-inserted into the sample hole made from the first quarter plug (Note 2).

4. On reaching the 30 cm mark, the plunger handle is released, and using the corer handle, the corer pushed down to the 60 cm mark. Holding the plunger shaft fixed against the corer handle, the corer is then uplifted again, and the sampled honey expelled into the mixing container.

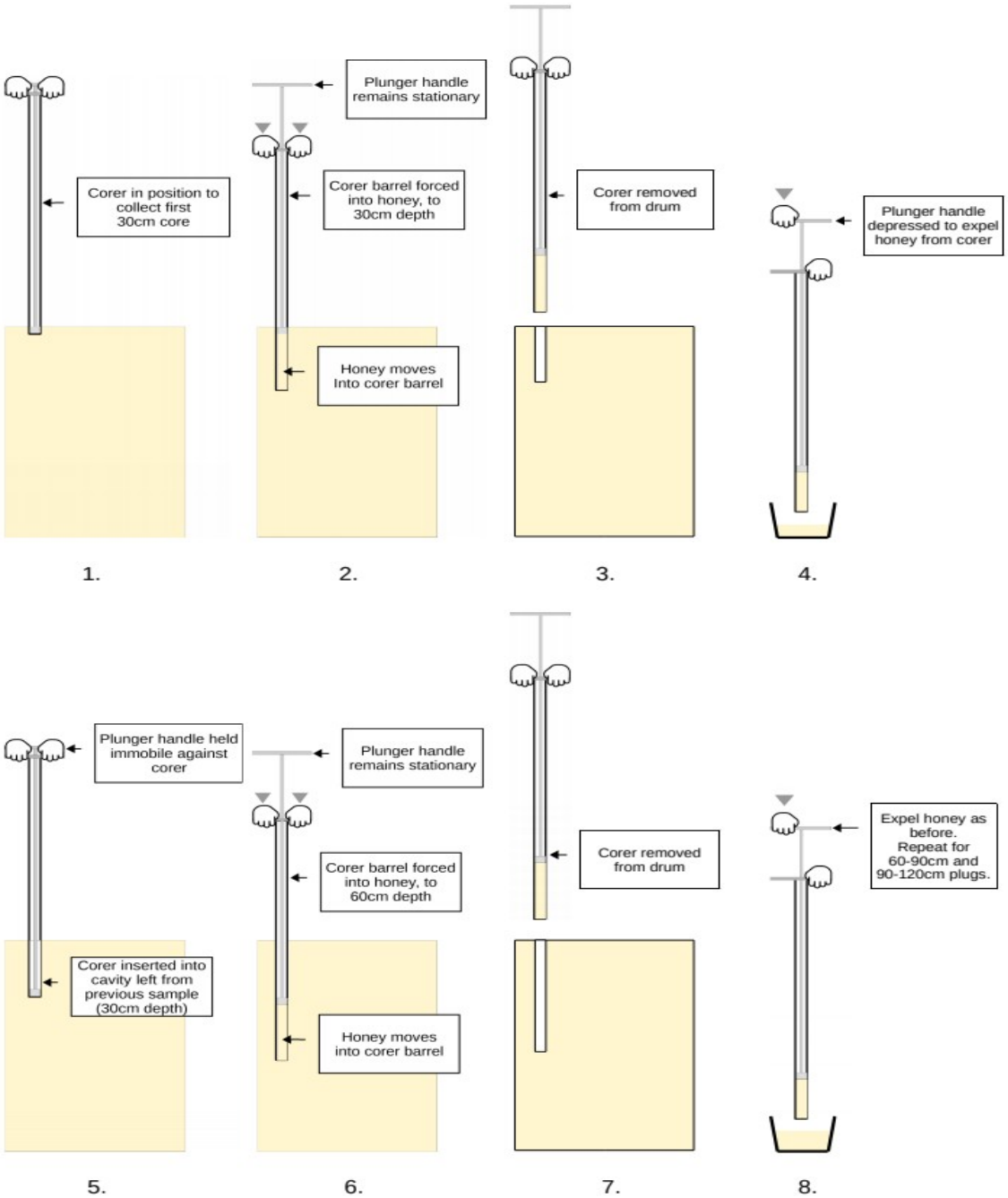
5. This process is repeated twice more, to collect the 60 – 90 cm plug and the 90 bottom plug.

6. The four plugs of honey are thoroughly mixed and then 50 – 100 g is sub-sampled for sending to the laboratory for analysis.

Note 1: To facilitate quarter core sampling, marks should be etched on the plunger barrel at 30 cm, 60 cm, 90 cm and 120 cm.

Note 2: A hole from the prior sub-sampling (s) will be visible for most drums of honey. If the honey is quite soft, this hole may collapse in on itself when the corer is removed. With such soft honeys, it will be easy to reinsert the corer to the prescribed depth.

Figure 1. Collecting composite cores from a drum of honey.



Sampling Retail-Ready Final Product

1. Prior to packing, a production batch must be fully homogenised by thorough mixing. This can be verified by:
   a) collecting a series of samples throughout the packing run, typically at the start, 20% through, 40% through, 60% through, 80% through and at the end.
   b) These samples must be analysed for key analytes, including the five analytes for the MPI Manuka honey definition.
   c) If the analytes agree to within the analytical uncertainties of the testing laboratory (typically ±5% of their means), this indicates satisfactory mixing.
2. Once the operator is satisfied that their mixing process is working well, taking multiple samples from a production batch is not necessary. Any one sample should be representative of the whole batch.
3. The efficacy of the mixing process should be revalidated annually by repeating the exercise described above.

Contact

For further information, contact one of our friendly Food and Bioanalytical Client Service Managers on: 0508 HILL LAB (0508 44 555 22).

<End>