

# Honey testing



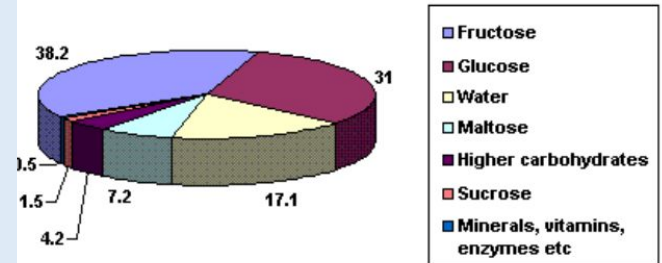
## What is in honey?

A range of sugars, organic acids and flavonoids.

% Water is around 17%. Added water can be detected this way.

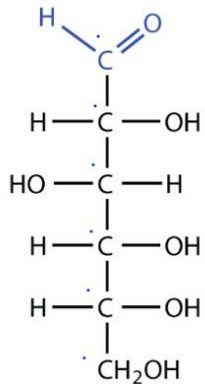
Fructose:glucose is 38:31.  
Adulterated honey will have a different ratio.

Percentage composition of honey



The problem: 12 out of 28 samples of imported honey were adulterated

## Sugars: Carbohydrates

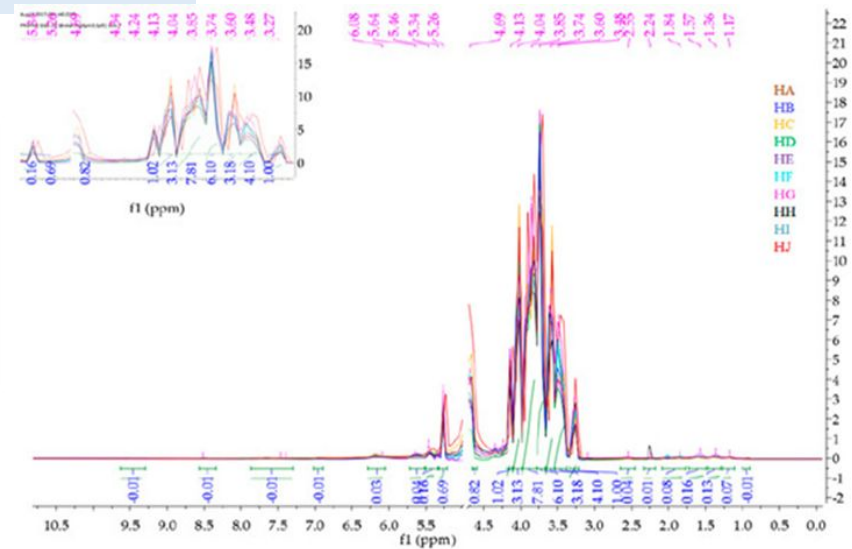
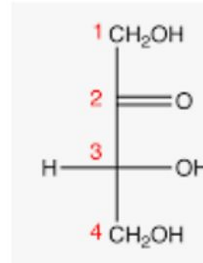


Glucose  
(an aldohexose)

Your textbook will tell you that glucose and fructose are examples of monosaccharides. Your textbook does not mention that there are hundreds of other important monosaccharides. They are classified by the number of carbon atoms in the backbone.

Glucose is a hexose or C6 sugar.

The molecule on the right is a tetrose, a C4 sugar.



Rice syrup adds C3s to honey.

Honey provides a fingerprint NMR. The addition of other sugars will produce unusual peaks and will change the relative composition