Determination of free Acidity in Honey according to DIN 10756

Description

This method describes the determination of free acidity (acid grade) in honey. The acidity is calculated in meq acid/kg.

Instruments

Titrator	TL 5000/20, TL 7000, TL 7750, TL 7800
Exchangeable Unit	WA 10
Electrode	N 62 or A 7780 1M-DIN-ID, A 162-2M-DIN-ID or similar
Cable	L1A (only for electrodes with plug head)
Stirrer	Magnetic stirrer TM 50/TM 235 or similar
Lab accessory	Glass beaker 100/150 ml
	Magnetic stirrer bar 30 mm

Reagents

1	Sodium hydroxide solution 0.1 mol/l
2	DIN/NIST buffer pH 4.01 or technical buffer 4.00
3	DIN/NIST buffer pH 6.87 or technical buffer 7.00
4	KCl solution 3 mol/l
5	Soda lime (CO_2 absorption)
All reagents should be of analytical grade or better.	

Titration procedure

Reagents

The titer determination of the NaOH is carried out as described in the application report "Titer determination of strong bases". The sodium hydroxide must be protected with a CO_2 absorption tube filled with Soda lime.

Cleaning of the electrode

The electrode is cleaned with distilled water. Suitable for storage is KCl solution 3 mol/l or electrolyte solution L 911.
Because this titration is done as an endpoint titration, the electrode must be calibrated periodically (at least weekly). We recommend a 2-point calibration with the DIN buffers pH 4.01/ 6.87 or 4.00/7.00.

Sample preparation

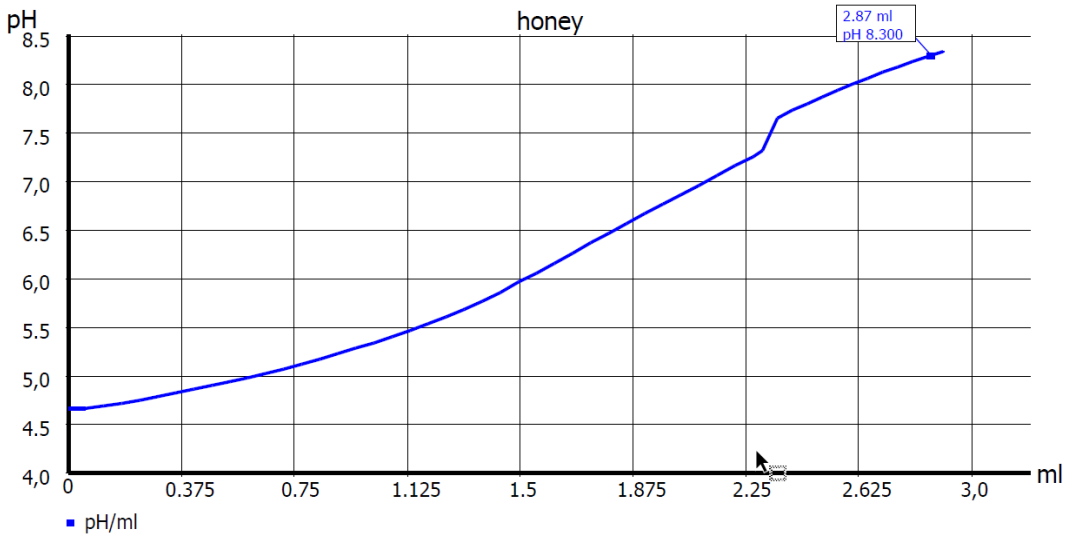
10 g of the sample is weighted in exactly and dissolved in 75 ml dist. CO_2- free water. The titration is done with Sodium hydroxide to the endpoint pH 8.3.

In other countries and depening on the norm a different pH endpoint such as 7.3 is used.

Titration parameter

Sample titration

Titration graph



Default method	---		
Method type	Automatic titration		
Modus	Endpoint		
Measured value	pH		
Measuring speed / drift	normal	Minimum holding time	2 s
		Maximum holding time	15 s
		Measuring time	2 s
		Drift	20 mV/min
Initial waiting time	0 s		
Step size	0.05 ml		
Dampening	none	Titration direction	increase
Pretitration	Off	Delay time	0 s
Endpoint 1	8.30 pH	Delta Endpoint	1.0 pH
		Endpoint delay	5 s
Endpoint 2	Off		
Max. titration volume	20 ml		
Dosing speed	30%	Filling speed	30 s

Calculation:

The result is calculated as meq/ kg:

$$°meq/kg = \frac{(EP1 - B) * T * M * F1}{V * F2}$$

EP1		Consumption of titrant at the end point
B	0	Blank value
T	WA	Actual concentration of the titrant
M	1	Molecular weight
V	m	Volume of the sample
F1	1000	Conversion factor
F2	1	Conversion factor

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