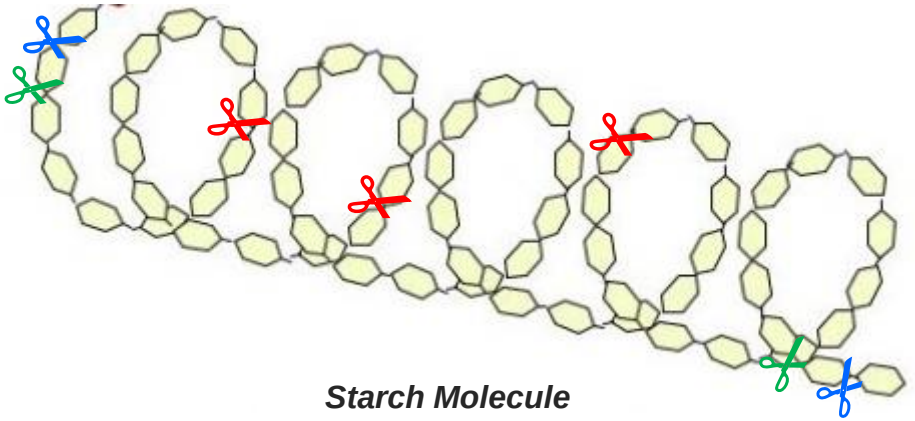


Explanation for Diastase/Amylase-Detection Methods

Generall Background

- Amylases are enzyme that catalyses the hydrolysis of starch into sugars
- widely found as digestive enzyme in animals, plants, fungis, bacteria
- Different types of Amylase (different cutting positions of starch)
  - α-Amylase
  - β-Amylase
  - γ-Amylase



Starch Molecule

Honey Regulation

- COUNCIL DIRECTIVE 2001/110/EC of 20 December 2001 relating to honey

(a) Diastase activity (Schade scale)	
— in general, except baker's honey	not less than 8
— honeys with low natural enzyme content (e.g. citrus honeys) and an HMF content of not more than 15 mg/kg	not less than 3

- Basis of this Limits: honeys measured by official method (DIN 10750) formally known as „Schade Method“
- QSI is using this method to analyse diastase activity of honey

„Problems“ with Schade Method

- Schade method is due to the used reaction pathway unspecific
  → result is the total activity of α+β+γ-Amylase Activity
  → mayor Amylase in honey is α-Amylase
  → specific tests for α-Amylase in honey were developed and used[1]
  → result with this specific tests shows lower values

BUT

Limit in honey directive obtained with **Schade** Methode

→ Opinion of QSI: *Is is not possible to check the official limits (which is fused on Activities measured by Schade method) with a more specific method, which tends to gain lower values.*

[1] **testing and validation of a new standardized method since 2014 by DIN, based on reaction of a-Amylase with 4,6-Ethyliden(G7)-1[4-nitrophenyl(G1)]-1,4-α-D-maltoheptaoside („Nitrophenol Method“)**

For further questions please feel free to contact us.

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