PROBLEM WITH ASSESSMENT OF HONEY QUALITY WITH REGARD TO REQUIREMENTS OF EU HONEY DIRECTIVE

I. DIASTSE ACTIVITY (PHADEBAS METHOD)
II. ELECTRICAL CONDUCTIVITY

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The EU Honey Directive 2001/110/EC states that the honey must meet the following criteria for DN:

- No less than 8 Schade units for most of honey
- No less than 3 Schade for honeys with low natural enzyme content citrus honeys and an HMF content of not more than 15 mg/kg.
PHADEBAS METHOD

The Phadebas method uses a syntetic biochemical substrate known as the Phadebas tablets, which are a water-insoluble, cross-linked starch polimer. This is hydrolyzed by the enzyme, yielding blue water-soluble fragments, determined photometrically at 620 nm. The absorbance of the solution is directly proportional to the diastatic activity of the sample.
The diastase activity is expressed as the diastase number (DN) in Shade units and is defined as follows: one diastase unit corresponds to the enzyme activity of 1 g of honey, which can hydrolyse 0.01 g of starch in one hour at 40°C.
for diastase values (between 8 and 40 DN), the value of the DN is determined according to the formula:

\[ DN = 28,2 \times \Delta A_{620} + 2,64 \]

for diastase values (between 0 and 8 DN), the value of the DN is determined according to the formula:

\[ DN = 35,2 \times \Delta A_{620} - 0,46 \]

where:

- \( \Delta A_{620} \) – is the difference of the extinction of the tested honey solution and the mean extinction for a series of tablets (so-called 'blank')

- 28,2 and 2,64 or 35,2 and 0,46 – means constans taking into account the dependence between diastatic activity of honey
If the number of diastase (DN) is exactly 8, it isn't clear which formula should be used:

- between 8 and 40
  \[ DN = 28,2 \times \Delta A_{620} + 2,64 \]

- between 0 and 8
  \[ DN = 35,2 \times \Delta A_{620} - 0,46 \]

That should be regulated.
The EU Honey Directive 2001/110/EC states that the honey must meet the following criteria for electrical conductivity:

- Honey not listed below, and blends of these honeys is not more than 0.8 mS/cm
- Honeydew and chestnut honey and blends of these except with those listed below is not less than 0.8 mS/cm
- **Exceptions:** strawberry tree (Arbutus unedo), bell heather (Erica), eucalyptus, lime (Tilia spp.), ling heather (Calluna vulgaris), manuka or jelly bush (leptospermum), tea tree (Melaleuca spp.)

If the result of the electrical conductivity is 0.8 mS/cm, it is impossible classify the honey as nectar or honeydew honey.
Thank you for your attention

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