

## REPORT

# HANDS ON TRAINING ON MELISSOPALYNOLOGICAL STUDIES OF HONEY

Date :- 7<sup>th</sup> December 2024

Venue:- Zoology lab

The Zoology Department of C.O.E. Govt. Degree

College, Sanjauli organised a one day hands on training for the students on the topic “Melissopalynological Studies of Honey” in which students from different colleges also participated. Dr Shivani Seraik Kaprate was the resource person.



## (A)PHYSICOCHEMICAL ANALYSIS

### 1)Colour :-

Colour was determined by recording the optical density of honey without dilution.

10gm of honey was taken in test tube, placed in water bath at 77 Degree Celsius for removal of air bubbles and cooled at room temperature. By using distilled water as blank, absorbance was read in spectronic 20 at 520nm.



## 2)pH

The pH of the honey was measured by dissolving 10gm honey in 100ml distilled water using pH meter.

Observed pH is 4.34.

Range :- pH is 3.9-6.1



## 3)Moisture:-

The moisture content was calculated by measuring the refractive index of the sample at 20 degree Celsius by digital refractrometer.

Observed moisture is 20.6%.

Range :- 16-25%



#### 4) Specific Gravity:-

Clean and dry the specific gravity bottles and weigh it (A).

Fill it up to the mark with distilled water maintained at 27.1 degree Celsius and weigh (B).

Remove the water, dry the bottle again and fill it with honey maintained at 27.1 degree Celsius.

Weigh the bottle again (C).

Specific gravity =  $\frac{C-A}{B-A}$

Range = 1.38-1.45



## 5) Electrical Conductivity :-

Take 20gm of honey in 100ml of distilled water. Take 40 ml of this 20% solution in a beaker and measure the electrical conductance.

Honey electrical conductance will be measured by conductivity meter.

Observed conductance is 0.38 mS/cm.

Range :- less than 0.8 mS/cm.



## 6) Fiehe's Test :-

Fiehe's test is a qualitative reaction performed to detect the presence of hydroxymethylfurfural in which in which the presence of HMF is confirmed with the appearance of cherry red colour with resorcinol.

In the positive test, the cherry red colour persists, while in negative reaction there is appearance of light pink colour which disappears after a short time.

Procedure:-

Take 5gm of honey sample in a porcelain dish. Add to this 10 ml of diethylether and stir with a glass rod for 30 seconds. Put this in another porcelain dish and repeat it

thrice. Let it dry for 2-3 hrs. Add 2-3 drops of resorcinol with concentrated HCl.



## **(B) PREPARATION OF POLLEN SLIDES FROM HONEY SAMPLES**

Honey slides will be prepared for analysis using the method proposed by Louveaux *et al* (1978).

Procedure :-

10gm of honey will be dissolved in 20 ml of hot distilled water at 40 degree Celsius.

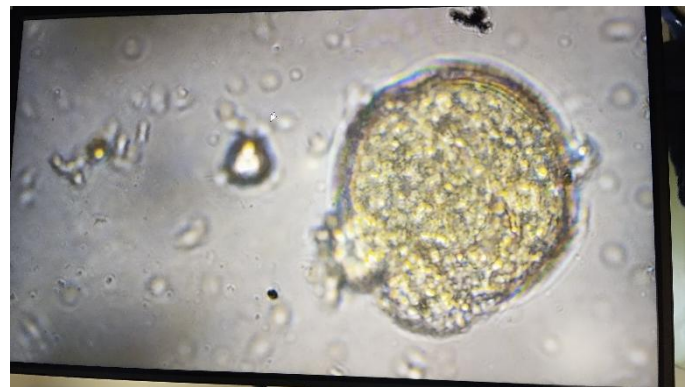
centrifugated at 2500-3000 rpm for 10 minutes.

Supernatant liquid is discarded.

Sediment will be dispersed again transferred  
to another centrifuge tube

Centrifuged again for ten minutes at 3000 rpm  
and sediment will be separated

Observe under the microscope



From this we conclude that more the number of pollens  
present in the honey more is the purity of the honey.