Sensory Testing of Foods

Oil Droplet Examination

How might we compare the oil characteristics of different types of dressings, dips and sauces?

Background

An emulsion is a mixture of two immiscible liquids held together by a surfactant. Emulsions are thermodynamically unstable and will separate over time. Emulsions may be of different types. The characteristics of different types of dressings, dips and sauces may be determined by the type of oil used and those oils may give the emulsion different characteristics beyond taste alone. Emulsifiers form physical barriers to prevent droplets from coming together. Tighter emulsions have smaller droplets, and the overall variety in size of each droplet shows how uniform an emulsion is. Other familiar foods that are emulsions include milk, margarine and ice cream.

Materials

Light microscope
Disposable pipettes
Microscope slide
Microscope cover slip
Dressings of variable viscosities (I.e. Vinaigrettes, Italians, Spoonable Sauces, or Mayonnaise)

Procedure

1. Gather dressing sample to be viewed under the microscope.
2. Pipette a small amount of the dressing.
3. Place a very small drop on the viewing slide.
   a. The smaller drop is better for getting a single layer of droplets.
4. Add the cover slip on top of the viewing slide.
5. Press the cover slip and viewing slide together gently to avoid creating air pockets on the slide.
6. Place the microscope slide on the microscope stage to be viewed.
7. Complete a data table to compare samples based on droplet size, variability, and shape of droplets.

Sample description	Droplet size	Shape of droplet	# of droplet sizes