

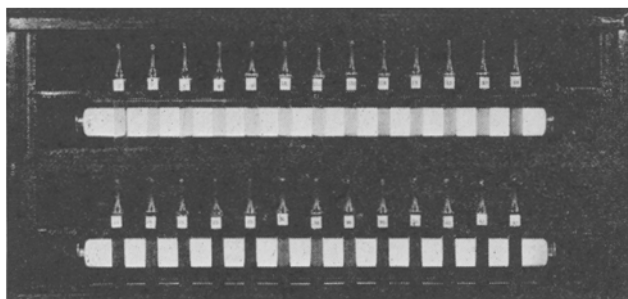
The Facolorimeter

A Device for Use With the F.A.C. Standard Color Ampoules

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In the laboratory grading of fats involving the F. A. C. system utilizing a series of standard color ampoules, two salient shortcomings became evident to us with respect to their employment. Firstly, the undesirably inconvenient and somewhat hazardous operation of continually handling the standard ampoules; secondly, the distinct need for a constantly available source of adequate illumination of the proper type.



With these major observations in mind, we developed a simple device, tentatively designated a "Facolorimeter"—this appellation being derived from the combination of the initials F. A. C. and the word colorimeter, which surmounts the shortcomings previously mentioned. The assembly itself consists of a rectangular cabinet providing a permanent housing for the standard color ampoules, these being located immediately behind a protective clear glass panel at the front of the instrument. The standard ampoules are arranged in two tiers of thirteen each in sequence as below:

Upper row: 1, 3, 5, 7, 9, 11, 11A, 11B, 11C, 13, 15, 17, 19;

Lower row: 21, 23, 25, 27, 29, 31, 33, 35, 37, 39, 41, 43, 45.

The spacing of the standard ampoules is such as to permit the holding of the sample tube of oil to be graded in front of the clear glass panel and correspondingly between the various standards when ascertaining its color. It will be evident that this testing procedure embodies rapid and efficient manipulation. The problem of lighting was solved by the employment of daylight fluorescent tubes, the visible energy output of which is characterized by a spectral quality approximating that of June daylight, a desirable feature. The fluorescent tubes not only furnish a source of adequate and proper illumination, but are inherently adaptable to the linear arrangement of the F. A. C. color standards in the cabinet. Specifically, one fluorescent lamp (daylight—T8, 15 watts) is installed about $1\frac{3}{4}$ inches behind each row of standard color ampoules. When in operation, a band of light is produced across each standard ampoule and the sample tube being viewed, rendering ascertainment of the color grade remarkably facile.

The interior of the cabinet, including the fluorescent assembly, is finished in black; the top is removable, ensuring accessibility for replacement purposes; the front of the instrument is equipped with a hinged cover which protects the standard color ampoules from actinic rays when not in use. An additional convenience is realized by mounting the assembly on a wall of the laboratory at a height corresponding to the eye-level of a technician of average size.

We have had one of these instruments in use in our laboratory for some time and are extremely satisfied with the benefits accruing therefrom.

Report of the Committee On Analysis of Commercial Fats and Oils—1940-41

Progress has been made on several methods during the past year, however, only one of these is ready for a final report. The work under way has included the following:

- Moistures
- Unsaponifiable Matter
- F. A. C. Color Standards
- Iodine Numbers
- Thiocyanogen Values
- Titer Thermometer Specifications

The Committee has collaborated with the American Society of Testing Materials, Committee E-1, in an effort to standardize specifications for the titer test thermometer so that one instrument might be satisfactory to all. We have arrived at an agreement and submit herewith the revised specifications which we recommend for adoption:

Specification for F. A. C. Titer Test Thermometer

Type: Etched stem, glass.
Liquid: Mercury.
Range and subdivision. —2 to 68° C in 0.2°.
Total length: 385 to 390 mm.
Stem shall be constructed of suitable thermometer tubing of either plain or lens front type.
Diameter—plain front type: 6 to 7 mm.
Thickness of stem—lens front type: the cross section of the stem shall be such that it will pass through an 8 mm. ring gauge but will not enter a 5 mm slot gauge.
Bulb: Corning normal or equally suitable thermometric glass.
Length: 15 to 25 mm.
Diameter: 5.5 mm to not greater than that of stem.
Distance from bottom of bulb to —2° mark: 50 to 60 mm.
Distance to 68° mark from top of thermometer: 20 to 35 mm.
Length of unchanged capillary between the highest graduation, and the expansion chamber: 10 mm.
Expansion Chamber: To permit heating to at least 85° C. Space above mercury to be evacuated or filled with nitrogen or other suitable gas.