Notes

PERMANENT PLASTIC STANDARDS FOR RAPID SOIL AND PLANT TISSUE TESTING

The difficulties encountered in comparing the color and turbidity of soil and plant tissue tests with lithograph standards often results in objection to their use. Standard solutions simultaneously carried through the testing procedure have proved very satisfactory for purposes of comparative measurement. However, the precautions and equipment necessary for standard solutions confine their use almost entirely to laboratory analysis. The study noted here was undertaken in an effort to prepare permanent plastic standards which would possess the desirable qualities of the standard determinations with the permanence and durability of lithograph colors.

![Graph of Light Transmission vs. Grams CaCO₃ added per 100c plastic]

**Fig. 1.**—Light transmission of turbid plastic standards using CaCO₃.

Plastic standards have been developed for phosphorus as phosphomolybdic-blue, potassium as the turbidimetric cobaltinitrite test, magnesium as titan yellow color lake, and calcium as turbidimetric stearic-oleic soap solution. These plastic standards were used in conjunction with the microchemical methods adapted from Peech and English.¹

The plastic material used is one of the commercial liquid casting materials known as "Castolite". It is a colorless, thermosetting, isotropic material with excellent optical properties. It is easily colored with dyes which are soluble in acetone. Turbidity may be produced by the addition of fine insoluble white substances, such as powdered calcium carbonate.

Excellent duplication of color and turbidity of standard solutions may be attained by visual comparison. It was found that the poly-