

TECHNICAL NOTES

A13005-F30

FOREST PRODUCTS LABORATORY

U. S. FOREST SERVICE

MADISON, WISCONSIN

LO#11
458

No. F-30 ✓

EFFECT OF CASEIN IMPURITIES ON WATER REQUIREMENT OF CASEIN GLUE

Experiments at the Forest Products Laboratory indicate that practically all caseins of a reasonable degree of purity can be made into satisfactory glues by the same formula, simply by varying the amount of water used.

Caseins may be divided into definite groups according to the amount of water which they require to make glue of a given consistency. This grouping is roughly the same as the grouping according to methods of casein manufacture. Grain-curd casein requires the least water; lactic-acid casein, ordinary mineral-acid casein, and rennet casein increasingly larger amounts.

The ash content of these caseins also increases in the same order. In fact, the relation between the ash content and amount of water required is so close that if the former is known the latter may be predicted. The relation between the ash content and the water requirement may be expressed by an equation of the type,

$$y = mx + b,$$

wherein x is the ash content of the casein, y the water-casein ratio required to give a glue of medium viscosity, and m and b constants depending upon the formula used.

This equation gives a straight line curve, as shown in the accompanying diagram.

