

Microorganism Population Affected by pH; Torula Grown on Protein Waste

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• A paper by Finn and Wilson from the Symposium on Fermentation Process Control presented by the Fermentation Subdivision at the most recent ACS meeting reports on population dynamics during continuous propagation of microorganisms. In incompletely buffered media, a steady cycling in yeast population was observed, traced to steady fluctuations in the pH which were 90° out of phase with population fluctuation. Inherent feedback and metabolic lag appear to give rise to this phenomenon. • Laboratory experiments, by Reiser, show the possibility of propagating torula yeast on the waste protein water from a potato starch plant. As much as 50% of the solids may be recovered as a yeast product without adding any nutrients. A 40% recovery, with an accompanying 60% reduction in the B.O.D., would produce a product competitive with fish meal. Refinements in the process could produce a product competitive with soybean and meat meal.

Effects of Heat on Milk Serum Proteins; Developments in Antioxidants

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• The Borden Award Address in Dairy Chemistry, by Jenness, presents the up-to-date knowledge of how heat treatment affects serum proteins in milk. This is of practical importance to dairy chemistry and of theoretical interest in protein chemistry. • Antioxidants are contributing greatly to conserving our food supply and bettering nutrition. Kraybill and Dugan present a study of new developments in this important field of food chemistry. Two synthetic antioxidants with excellent carry-through properties are discussed.

Economy in Annual Fertilizer Use; Soil Affects UF Nitrification

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• Findings of MacIntire, Shaw, Robinson, and Veal point to the economy of successive applications of potassium fertilizer at rational rates and the waste from single heavy-rate applications. They studied leaching of potassium metaphosphate and potassium sulfate during eight years on two fallowed soils. The results of five annual 200-pound inputs of potassium fertilizer were normal and similar in each soil, while every 1000-pound single input of potassium fertilizer gave a high recovery in the rainwater and small fixation of potassium. • Kralovec and Morgan present a study of the rate at which urea-formaldehyde fertilizers nitrify. Type of soil, pH, and other plant nutrient content of the soil are found to be factors, but soil type is reported to have the greatest effect. A method for rapidly evaluating the agronomic availability of the water-insoluble nitrogen in UF products is presented.