to use the assay technique to evaluate various processing and storing practices for dried milk products.

Composting. Composting is moving out of the backyard garden, and may eventually be recognized as a method for disposing of industrial and municipal waste. The general principal of composting as a chain reacting refermentation technique were discussed by Mark Luckens of Emmet Technical Associates.

The biological conditions within a compost heap are anything but simple, according to Luckens, for the final compost material represents the results of a number of different microorganisms living together and in succession. Of fundamental importance is the interdependence of these microorganisms if the waste material is to be successfully converted to a compost product.

As he explained the reactions within the compost pile, the initial conditions, if aeration and moisture are suitable, favor the growth of fungi and aerobic bacteria.

The metabolism of these organisms gives off heat, killing the initial bacteria but providing optimum conditions for the thermophilic bacteria, which thrive at higher temperatures.

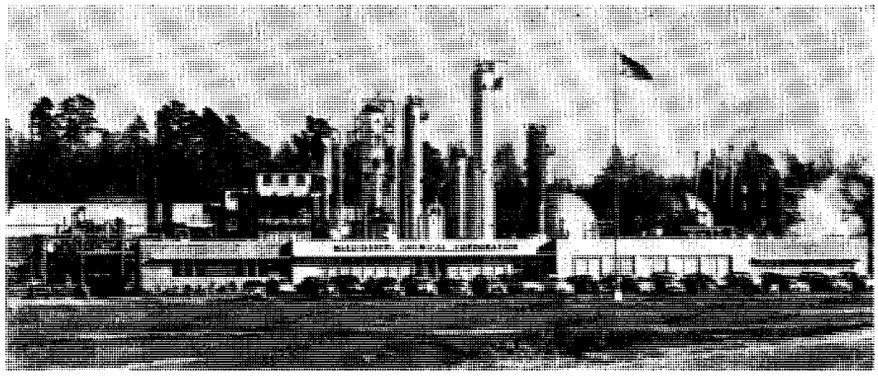
During this phase the temperature of the mass may reach 70° to 75° C. This high temperature is maintained until the food supply of the organisms is exhausted and then they die off.

The advantages of this method over older, garden compost heaps, according to Luckens, is that the aerobic bacteria are favored. The compost pile is aerated and a sufficient supply of oxygen is supplied so that waste is converted to humus in from five to seven days. Older composting techniques were dependent upon the action of anaerobic bacteria, which grow in the absence of air. Under the old composting techniques, it often took from nine to 12 months to dispose of wastes by composting.

Luckens pointed out that nitrogenous matter must often be added to municipal material to achieve satisfactory composting media.

The ratio of carbon to nitrogen in the initial pile is important for the microorganisms within the compost pile and also contributes to the final value of the compost humus.

This ratio of carbon to nitrogen seems to be of fundamental importance for if it is too low the microorganisms will not thrive and if too high, the resulting humus will convert the soil to which it added into a fermenter and rob it of the nitrogen needed for plant growth.



Mississippi Chemical continues anhydrous ammonia expansion at Yazoo City, Miss. New 60 ton gas reforming section with compressor and MEA purification units were to be on stream before March 1. Claude process modifications will increase production another 20 tons per day by September. A goal of 290 tons is scheduled for 1955—present output is 120 tons

Industry

Pacific Borax Sets Up Plant Food Division

Pacific Coast Borax Co. has announced the establishment of a new plant food division to be headed by James A. Naftel. The company said its new division has been organized because of the increasing use of its various products, fertilizer borate, colemanite, and Polybor, in mixed fertilizers and for direct application to correct and prevent boron deficiencies in the soil.

Dr. Naftel has been the company's southern agronomist. He will continue directing the new division from his headquarters in Auburn, Ala.

Research

Useful Citrus Leaf and Soil Tests

The use of plant and soil criteria to diagnose nutritional disorders in citrus orchards is becoming more and more practical. A paper reviewing progress in the field, Development and Use of Diagnostic Techniques for Determining the Nutritional Status of Citrus Trees, has recently been reported by H. D. Chapman and D. G. Aldrich of the University of California Citrus Experiment Station at Riverside.

A long term aim of the Station's Department of Soils and Plant Nutrition, the project has been the object of a great deal of greenhouse and field work. The symptoms and effects of mineral deficiencies, excesses and imbalances in citrus are drawing continuing investigation. Inorganic leaf composition and soil analysis are also getting close scrutiny. Enough data have now been collected to allow generally a ready solution to nutritional disorders, based upon visual or laboratory analysis of leaf samples.

This and related diagnostic methods growing out of the program are making blind use of fertilizers a thing of the past. The kinds and amounts of minerals needed in a given orchard can be determined through leaf and soil analysis and an efficient fertilization program set up.

The work has led to trial establishment of a leaf analysis laboratory by a California marketing organization. Members may submit leaves for analysis and will then be advised on fertilizer usage.

The Citrus Experiment Station has set up by request a school, to be run periodically, which will bring commercial laboratories up to date on the latest techniques in soil and leaf analysis.

Many gaps remain in the fund of knowledge in this field, say the authors of the paper, but the accrued information now available is proving itself increasingly useful to many individuals and groups in the citrus industry.

Coined Names Announced for Two Fungicidal Chemicals

The Interdepartmental Committee on Pest Control has announced two coined names for new pesticide chemicals. Dichlone has been selected as a coined name for the fungicidal chemical 2,3-dichloro 1,4-naphthaquinone.

Glyodin has been approved as the coined name for 2-heptadyl glyoxalidine acetate.

Approval of a coined name by the committee means that the name is available for free use in designating a chemical.

Dichlone has been sold under the trade name Phygon. The name dichlone will be used to indicate the percentage of the pure chemical present. Glyodin is sold as a fruit fungicide under the trade name Crag.