

TECHNICAL SECTION

JOURNAL OF Agricultural and Food Chemistry

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Antibiotics Stimulate Plant Growth; Evaluating Soil Conditioners

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• Penicillin G and Bacitracin were found to be outstanding in their ability to stimulate plant growth under the test conditions used by Nickell and Finlay. One of the duckweeds was used in the test because it can be rendered aseptic and grown under aseptic conditions easily. Results of their work did not clearly favor any one of the possible theories on the mechanism of plant growth stimulation. They suggest that the answer to that question may reside in a combination of hypotheses with a different combination for each antibiotic or for each physiological type of antibiotic. • A method for laboratory evaluation of polyelectrolytes as soil conditioners is described by Hedrick. The method is applicable to solution and solid treatments, is reproducible when rigorously followed, and allows comparison of different polymers as well as various batches of the same polymer. With modification, the method can be satisfactorily used as a control procedure.

Antibiotics in Ruminant Nutrition; Animal Fats Stabilize Vitamin A in Feeds

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• Reid, Warner, and Loosli present a review and analysis of the effects of antibiotics upon the nutrition of ruminants. They conclude that the size of the growth response in calves appears to be largely the result of increased feed intakes rather than improved efficiency of feed use. The advantage gained from feeding antibiotics is that resulting from the control of certain infectious calfhood diseases, notably scours. • Current interest in the addition of inedible tallow and grease to animal feeds led Siedler and Schweigert to determine the effect on stability of vitamin A in feeds. They found that when 6% stabilized animal fat was added to commercial feeds, the stability of vitamin A was increased when the fat was stored at room temperatures. The increase was noted primarily in the later phases of storage periods. In addition to increased stability of vitamin A, addition of stabilized animal fats increases feed efficiency, decreases dustiness of the feed, and improves appearance.

Sixfold Concentrates of Citrus Juice; Irradiation-Induced Autoxidation; Determining Perchloroethylene

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• Savings in refrigeration costs from reduced bulk and lower freezing point are possible with sixfold concentrates of orange and grapefruit juice, to which were added cold-pressed peel oil, according to a report by Rice, Keller, McColloch, and Beavens. The degree of cloud stability for the sixfold level of concentration was equal to that obtained by stabilizing fourfold concentrates by partial heat treatment. Large-size containers of sixfold concentrates were more easily reconstituted than such packs of the standard fourfold pack, because they were more fluid at the usual frozen storage temperatures. • The effect of several antioxidants in preventing autoxidation of methyl linoleate induced by irradiation was studied by Polister and Mead. Vitamin A, ascorbic acid, glutathione, and cysteine were largely destroyed; calciferol was not affected, although it showed a low order of antioxidant activity; and catalase had no effect. Tocopherol and Ionol were effective at concentrations so low that the extent of their destruction was not measured. • A method for determining the residue on strawberries of perchloroethylene used in controlling rot-producing mold is described by Mapes and Shrader. No sensitive and selective chemical test for perchloroethylene is available, so it was necessary to extract the compound from the strawberries with diethyl ether. This is followed by evaporation in the presence of ethylbenzene and determination of chloride by a nephelometric method.