

### Herbicidal Powers of Carbamates Evaluated with CIPC as Standard

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• A trend toward the development of tailor-made chemicals for use on specific crops grown under specific agronomic and climatological conditions is foreseeable in research reported by Moore, George, Martin, and Garman. Three carbamic acid esters, all related structurally to CIPC, were applied as pre-emergent herbicides to six species of plants grown on three types of soil. Relative effectiveness of all three chemicals was compared with isopropyl *N*-(3-chlorophenyl) carbamate on the basis of pounds per acre of chemical needed to produce a 50% growth inhibition. The type of soil used as a planting medium had a pronounced effect on the initial activity of the compounds, which were generally more active in sandy soils than on loam. Residual effectiveness appeared to be a function of the soil type, but it also depended on the dosage of chemical applied.

### *Bacillus* Genus Produces Growth Stimulants; Carotene Determined in Alfalfa

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• Evidence for unidentified growth factors in various microbial products, together with the hope of finding more economical antibiotic feed supplements, led Lewis, Ijichi, Sugihara, Thompson, Snell, Alderton, and Garibaldi to initiate a search for microorganisms capable of promoting chick growth. They centered attention on the *Bacillus* genus, because these bacteria produce antibiotics that have been less thoroughly investigated and because *Bacillus* strains grow rapidly upon simple media. The preliminary screening program reported on yielded several stocks which gave 5 to 10% greater growth response at 10 weeks than the control chicks fed on diets supplemented with other antibiotics. • *N,N'*-Diphenyl-*p*-phenylenediamine, approved by the Department of Agriculture for use as a stabilizer for the carotene in alfalfa meal, has been found to interfere with AOAC method for determining carotene in dehydrated alfalfa meal, because the passage of diamine through the magnesium oxide absorbent produces a yellow color. Mitchell and Silker propose a new method for quality control purposes. The new method employs the use of tricalcium phosphate as the absorbent when diamine is present. Using this method, they develop data which indicate that the current commercial practice of applying diamine at the rate of 0.015% does not result in adequate stability of the carotene in alfalfa meal.

### Enzyme and Flavor Components of Fruits Isolated

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• In studying the biochemical processes that take place during the ripening of fruits, McCready and McComb desired further information on pectic enzymes acting on pectic substances. The course of action of a purified fungal polygalacturonase on polygalacturonic acid was followed by qualitative and quantitative paper chromatography. Crystalline brucine salts of galacturonic, di-, and trigalacturonic acids were isolated and used as standards to prove the reaction course. These and other oligogalacturonic acids appeared in the very early stage of hydrolysis and ultimately all were converted to galacturonic acid. The rates and apparent course of hydrolysis of polygalacturonic acids were independent of the molecular weights of substrates within the limits of 1900 to 35,000.