



unknown compound with the available synthetic glucoside of dimethyldithiocarbamate prepared by Dr. PLUIJGERS of this Institute by the reaction of acetobromoglucose and sodium dimethyldithiocarbamate, followed by saponification of the tetraacetate. This synthesis is strongly indicative for a  $\beta$ -configuration of the glucoside. The identity of the synthetic compound and the biochemically produced compound was proved by comparison of their  $R_F$  values in different solvent systems, ultraviolet and infrared spectra as well as their optical rotation.

The dimethyl dithiocarbamate-glucoside is only a weak fungicide, its minimal growth-inhibiting concentration being approx. 0.05% for *G. cingulata* and other moulds tested.

In the large-scale experiment approx. 10% of the sodium dimethyldithiocarbamate was converted into the glucoside, a much smaller percentage was transformed into the fungitoxic compound with  $R_F = 0.27$  whereas most of the originally added compound had been chemically decomposed in the outer medium as a result of its slightly acid reaction.

The amount of dithiocarbamate-glucoside present in the sap pressed from hypocotyls and cotyledons of cucumber plants which had stood for 2 days with their roots in 0.015% of sodium dimethyldithiocarbamate<sup>1</sup>, will be approx. 0.001–0.002%. If instead of sodium dimethyldithiocarbamate the glucoside was fed to the roots, the presence of the fungitoxic compounds with  $R_F$  values of 0.05 and 0.27 could be demonstrated as well. This observation suggests interconvertibility of the compounds within the plant.

Though the biochemical glucosidation of dithiocarbamates was unknown up till now, it is strongly reminiscent of the glucosidation of phenolic compounds<sup>4,5</sup> and of aminotriazole<sup>6</sup> in the plant.

*Institute for Organic Chemistry, T.N.O.,  
Utrecht (The Netherlands)*

J. KASLANDER  
A. KAARS SIJPESTEIJN  
G. J. M. VAN DER KERK

<sup>1</sup> H. M. DEKHUIJZEN, *Nature*, 191 (1961) 198.

<sup>2</sup> A. KAARS SIJPESTEIJN AND M. J. JANSSEN, *Antonie van Leeuwenhoek, J. Microbiol. Serol.*, 25 (1959) 422.

<sup>3</sup> F. FEIGL, *Spot Tests in Organic Analysis*, Elsevier Publishing Co., 6th Ed., 1960, p. 242.

<sup>4</sup> A. G. WINTER, H. SCHÖNBECK-PEUSS AND F. SCHÖNBECK, *Naturwissenschaften*, 56 (1959) 673.

<sup>5</sup> A. HUTCHINSON, C. ROY AND G. H. N. TOWERS, *Nature*, 181 (1958) 841.

<sup>6</sup> J. F. FREDRICK AND A. C. GENTILE, *Physiol. Plantarum*, 13 (1960) 761.

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