

mash seeds it goes on increasing during germination. Allantoin, urea and urease are absent from resting as well as germinating groundnut seeds; these constituents, however, are present in soya bean. Allantoin is present in mung-bean and mash seeds, but urea and urease are absent from these seeds. The amount of allantoin stays constant in mung bean and mash during germination, but goes on increasing in soya bean during this period. The amount of urea and urease activity stay constant during the germination of soya bean.

The systemic fungicide Vitavax (5-carboxyanilido-2,3-dihydro-6-methyl-1,4-oxathiin) has been found to decrease the allantoinase activity of mung-bean and mash seeds at 50 p.p.m. This concentration does not effect the allantoinase activity of groundnut and soya bean but decreases the urease activity of soya bean.

In the presence of cycloheximide the allantoinase activity as well as the urease activity of germinating groundnut, soya-bean, mung-bean and mash seeds are decreased.

Tannins in Black-Plum (*Syzygium cumini* L.) Seeds

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Ethanollic extracts of black-plum seeds have been shown to contain gallic acid, ellagic acid, chebulic acid, corilagin and related ellagitannins, 3,6-hexahydroxydiphenoylglucose and its two isomeric forms, galloylglucose and quercetin, by chemical and enzymic studies with tannase. From acetone extracts 3,3',4-tri-*O*-methylellagic acid has been isolated. A possible conversion of quercetin into toxifolin by the use of the antioxidant sodium metabisulphite has been observed.

The tannin complex was obtained by extraction of the seeds with acetone. The presence of gallic acid, hexahydroxydiphenic acid, chebulic acid and iso-hexahydroxydiphenic acid as the building blocks of the tannins in the seeds has been confirmed from chromatographic studies of the tannin hydrolysates. The phenolic acids and some of the minor tannins detected in the ethanollic extract arise by ethanolysis of the three major tannins observed in the acetone extract. Chebulic acid, a constituent of tannins, has been observed to undergo isomeric change to an unidentified phenolic compound on prolonged storage under acidic conditions.

A Comparative Study of Soluble Sugars and Nitrogenous Constituents of the Seeds of Members of the Cucurbitaceae Family

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Certain members of Cucurbitaceae family, namely *Cucumis melo*, *Citrullus vulgaris*, *Langeneria vulgaris* and *Cucumis utilisimus*, grow luxuriantly in Northern India, but their seeds are mostly wasted, except for a limited quantity that is used in an indigenous system of medicine, for nutritive purposes.

A preliminary study of the nutritional constituents indicated a high percentage of protein and phosphorus in the whole seed meal of these plants (Moinuddin & Siddiqi, 1970). Attempts were made to identify the free amino acids and soluble sugars present in the defatted seed meals. The seed proteins were extracted for their albumin, globulin, prolamine and glutellin fractions and the nitrogen distribution was studied. In order to devise a simple method for isolating proteins of high purity, the effect of pH variation on minimum and maximum extraction of nitrogenous constituents was studied. The amino acid composition, protein efficiency ratio and biological value of these protein were also studied.

Moinuddin & Siddiqi, M. (1970) *Proc. 39th. Annu. Meet. Soc. Biol. Chem. India*, p. 21

Effect of Pesticides Applied to the Soil on the Biological Activity of the Soil

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Persistence of non-degradable pesticides, though a desirable property as far as the protection it gives to the plants is concerned, is an undesirable property from the point of view of their harmful biological effects on the environment.

Two herbicides, simazin [2-chloro-4,6-bis(ethyl-amino)-6-chloro-*sym*-triazine] and Tok E-25 (2,4-dichlorophenyl *p*-nitrophenyl ether), and two fungicides, Benlate (methyl-1-butylcarbonyl-2-benzimidazole carbamate) and Lannate (*S*-methyl-*N*-[(methylcarbonyl)oxy]thioacetimidate), were studied at two concentrations for their effect on microbial population, soil respiration, ammonification and nitrification when applied to the sandy soil of Bangalore.

The results indicated that at either concentration none except Benlate had any effect on bacteria. Benlate stimulated the bacterial numbers during the