developing countries, it is difficult to adopt various control measures that might appear necessary in improving agricultural conditions liable to influence the development of aflatoxin on groundnuts. It was therefore felt that a careful investigation of the relative production of aflatoxin by different varieties would be valuable. The present communication outlines the findings of the screening trials on a large number of varieties of groundnut.

Sixty different varieties of groundnut were obtained from the collection maintained at the PIRRCOM Centre at Rajendranagar, Hyderabad. These varieties originally belonged to fifteen countries and the distribution was as follows: Argentina five, Bolivia five, Brazil five, China one, France three, India twenty-two, Indonesia two, Israel one, Nigeria four, Peru one, Philippines one, Paraguay one, Tanganyika three, Uganda two, Venezuela three, and three miscellaneous exotic varieties.

In each trial a spore suspension of a toxigenic strain of *A. flavus* (1 ml., 10 per cent) was grown in aseptic conditions on 40 g of healthy kernels for 10 days. The fungus was then destroyed by spraying with ethanol and the material was tested for the presence of aflatoxin using thin-layer chromatography[6] as well as the duckling test[7].

A profuse and fairly uniform growth of the fungus was observed on all the varieties of groundnut and there was no visible difference in infestation between varieties. A toxigenic strain of *A. flavus*, however, produced the toxin only on all varieties of groundnut except one, namely U.S.26. This variety was received from the Plant Industry Station, Agricultural Research Center, Maryland, U.S.A., and probably originally came from Tanganyika. The observation was repeated several times and confirmed. All the other varieties of groundnut contained positively detectable amounts of aflatoxin when the same strain of *A. flavus* was grown on them.

The resistance of one particular variety of groundnut to toxin production is difficult to explain, but it is important from the point of view of controlling the incidence of aflatoxin toxicity. Toxigenic strains of *A. flavus* require trace elements such as zinc, iron and manganese for the synthesis of toxin[8]. Lee *et al.*[9] have shown that barium ions inhibited and cadmium ions stimulated the production of aflatoxin in submerged cultures. In the light of these observations it is hoped that a comprehensive investigation of the chemical composition of U.S.26 and the other varieties of groundnut would give some valuable information.

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Quiescent Centre in Excised Tomato Roots

A QUIESCENT centre in root meristems was first reported by Clowes[1], who fed radioactive nucleic acid precursors and radioactive amino-acids to root tips. From autoradiographs of median longitudinal sections he demonstrated the presence of a patch of cells in the meristem which did not incorporate so much radioactivity as cells in other regions of the meristem[1–3]. During the course of experiments with excised tomato roots, grown in a White's medium as modified by Boll and Street[4], it was necessary to prepare autoradiographs of longitudinal sections of roots which had been in contact with sucrose-U-^{14}C or glucose-U-^{14}C.

Six-day-old tip cultures 110 ± 10 mm long and bearing numerous laterals were depleted of soluble sugars during a period of 24 h in minus sugar medium[5]. Six roots were supplied with radioactive sugars in 50 ml. glass-stoppered conical flasks, agitated gently for the duration of the experiment and then washed in running water for 10 min (ref. 6). The apical 5 mm of the root was excised, fixed in acetic acid : alcohol (1 : 3 v/v), dehydrated in the alcohol: xylol series, embedded in paraffin wax and 15 mμ serial longitudinal sections cut on a Cambridge 'Rocker' microtome. The sections were floated in water on slides previously coated with a gelatine adhesive[7] and dried. Autoradiographs were prepared with Kodak '*AR* 10' stripping film by the technique of Doniach and Pelc[8]. The film was exposed for 7 days at −20° C. Because of the fixation and dehydration of the tissues and also the deparaffinization of the sections, the distribution of graining in the autoradiographs would indicate only the distribution of activity in the insoluble material of the sections.

Fig. 1. Autoradiograph of a median longitudinal section of a tomato root previously fed 0·05 molar glucose-U-^{14}C for 24 h.

The autoradiograph of a median longitudinal section of a root fed glucose-U-^{14}C for 24 h (Fig. 1) shows that while there is dense graining in the autoradiograph above most regions of the meristem, there is a lighter area above the region of the quiescent centre. The presence of a quiescent centre in tomato root meristems has been observed in all median longitudinal sections prepared from roots previously treated with either sucrose-U-^{14}C or glucose-U-^{14}C. Thus the quiescent centre seems to be quiescent not only in the sense that cell division proceeds at a low rate[3] but also in the sense that synthesis of insoluble polymer from sugar substrate does not occur as rapidly as in other regions of the meristem.

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