From the data, it appears that soon after irradiation there is a greater reduction in DNA content, in comparison with RNA, as reported by previous workers. Subsequently, however, the trend is reversed, there being a greater percentage of reduction in RNA than DNA content. (Table V; 3 days after seed treatment and 4 days after seedling treatment.) Thus, it seems likely that DNA synthesis, although initially it may be more affected than RNA, returns to normalcy at a more rapid rate than RNA following treatment with mutagens at a sub-lethal dosage. It is hence important to take into account the developmental stage at which the estimations are carried out in studies of this nature.

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Zusammenfassung

Eine vergleichende Untersuchung über die Wirkung von Röntgenstrahlen auf ruhende Weizensamen und Weizenkeimlinge und von Senföl auf den Gehalt von DNA. und RNA. in Spross und Wurzel von Keimlingen verschiedenen Alters wurde ausgeführt.

Fusaric Acid Production by *Fusarium orthoceras in vitro*

Fusaric acid, a wilt toxin produced by certain species of *Fusarium*, is known to be synthesized in culture medium by *Fusarium heterosporum* Nees[1], *F. bulbigenum* Cke. et Mass. var. *lycopersici* (Brushi) Wr. et Rg., *F. vasinfectum* Atk., *Gibberella fujikuroi* (Saw.) Wr.[2], and *Nectria cinnabarina* (Tode) Fr.[3] The detection of this toxin *in vivo* in *F. vasinfectum* infected cotton plants has also been reported[4]. Recently, in an extensive study of 23 species of *Fusarium* (obtained from the Centraalbureau voor Schimmelcultures, Baarn, Holland) it was observed that in addition to the species already reported, *F. orthoceras* App. et Wr. was capable of producing appreciable quantities of fusaric acid in culture.

Spore suspension of *F. orthoceras* was inoculated in 50 ml portions of Richard's medium in 250 ml conical flasks and incubated at laboratory room temperature (27–29°C). After 3 weeks, the fungal mat was filtered and the filtrate tested quantitatively for fusaric acid by bioassay[5]. The identity of the toxin in the filtrate was established by chromatographic determination of its R_f value in known solvents[6]. Approximately 50 ml of the filtrate were reduced to 1 ml volume *in vacuo* and the concentrated filtrate was spotted on filter paper strips and run in butanol-acetic acid-water (4:1:5) in test-tubes[7]. Culture filtrate of *F. moniliforme*, known to contain fusaric acid, and dilute solutions of pure fusaric acid were similarly spotted and run. The paper strips were air dried and spread over bacterial seeded agar[8] and incubated at 37°C for 18 h, when a clear zone of inhibition was formed around the position occupied by the toxin and pure fusaric acid on the filter paper. The R_f value of pure fusaric acid was found to be 0·89 and that of the toxin present in the filtrates of *F. orthoceras* and *F. moniliforme* was 0·87. R_f value of fusaric acid, when added to culture filtrate and similarly spotted and run in the solvent, was found to be 0·87. The lower R_f value of the toxin, when present in the filtrate, was probably due to salts and other interfering substances in the filtrate.

Under identical conditions, a three-weeks-old culture of *F. orthoceras*, grown in 50 ml Richard's medium in 250 ml conical flasks, produced 300 mg/l fusaric acid, whereas *F. moniliforme* and *F. vasinfectum* produced only 65 mg/l and 35 mg/l fusaric acid, respectively.

Dialyzed culture filtrate of *F. orthoceras* at 5 and 10% concentrations incited typical vein clearing symptoms[2] in cut shoots of susceptible cotton (Karunganni 2-*Gossypium arboreum*), thus further confirming the presence of fusaric acid.

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University Botany Laboratory, Madras, India, June 28, 1956.

Zusammenfassung

Durch biologische und papierchromatographische Methoden konnte nachgewiesen werden, dass auch *Fusarium orthoceras* den Welkestoff Fusarinsäure in die Kulturflüssigkeit abscheidet. Unter den angegebenen Bedingungen werden relativ grosse Mengen dieses Stoffes gebildet (300 mg/l gegenüber 65 mg/l durch *F. moniliforme* und 35 mg/l durch *F. vasinfectum*).

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Untersuchungen über den Ascorbigengehalt von Kohlrabi (*Brassica oleracea* v. *gongylodes*) während der Vegetation und den Zusammenhang zwischen Ascorbigen und Wachstum bei den Pflanzen der Familie Brassicacae

Ascorbigen kommt in den Pflanzen der Familie Brassicacae vor und ist eine oxydationsbeständige Verbindung der Ascorbinsäure mit einem Indolderivat (Indolylpropendiol)[1]. Über seine physiologische Bedeutung für die Pflanze war bisher nichts bekannt. Als Beitrag zur Aufklärung dieser Frage verfolgten wir in unserer Arbeit

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