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GRAVITY INDUCING THE ENDOGENOUS CIRCADIAN RHYTHMICITY IN *FUSARIUM MONILIFORME*

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Rhythmicity is ubiquitous to the living organisms and is expressed in a variety of ways (Cumming & wagner, 1968). In some fungi the rhythms are manifested by the development of a series of regularly spaced concentirc circles of growth called zonation. The endogenous rhythmicity of zonation is influenced by several factors (Jerebzoff, 1965). Among the physical factors, light (Hall, 1933) and temperature (Jerebzoff, 1965) are known to induce the zonation rhythms. The role played by the gravitational force in the manifestation of these rhythms is not known (Brown, 1970). This communication describes the effect of 'gravity treatment' on the zonation rhythm in *Fusarium moniliforme* Sheldon. In this organism light alternating with darkness produces zonation and zones are not formed in dark (Abro, 1980).

Cultures of *F. moniliforme* were grown in petri dishes on a synthetic medium (dextrose 3%; potassium nitrate 1%; potassium dihydrogen phosphate 0.5%; magnesium sulphate 0.25%; magnesium sulhate 0.25%; ferric chloride 0.002%, micronutirent solution 0.2%; 1ml. of which contained 0.1 mg. Ferric, 0.1 mg. zinc, and 0.05mg. maganese; agar 2%) at 25 C in dark for three days. A set of cultures were exposed to illumination of 100 lux for 12 hours, while another set was given the 'gravity treatment' for 12 hours. The gravity treatment was given by keeping the Petridishes on a disk of 22 cm diameter, rotating in anticlock around a vertical axis with 72 rotations per minute resulting in the centrifugal force of 0.468 g. After the treatment the cultures were incubated in the dark for a further period of four days. Control cultures were kept in darkness throughout.

Four concentric zones were formed in cultures which were given gravitational treatment and four were formed in the cultures exposed to light while none in the control cultures kept in darkness. The results of the above experiment show that both light and gravity treatment started the circadian rhythm in this organism.

Light (Hall, 1933) and temperature (Jerebzoff, 1965) are already known as oscillating factors of the endogenous rhythmicity. Present findings show that centrifugal

force can also induce the endogenous circadian rhythm of zonation if the organism is artificially made oscillating.

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