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LEAF BLIGHT OF TAPIOCA CAUSED BY *PERICONIA MANIHOTICOLA*

A SEVERE leaf blight of tapioca (*Manihot esculanta* Crantz.), caused by *Periconia manihoticola* (Vincens) Viégas, was observed in the later part of December 1976 in the experimental farm of the Assam Agricultural University, Jorhat. Symptom appeared as violet-blue spot (Violet-blue Group 93A & B of R.H.S. Colour Chart), upto 8 mm diameter. Centres of matured spots became buff to light brown with the margins remaining violet-blue—the violet discolouration spread into the green areas through veins to certain distance. Number of spots varied from a few to innumerable and in advanced stage the spots coalesced covering a large area resulting in defoliation.

Fruotifications developed from the infected tissues as hairy outgrowths. Conidiophores stout, brown, usually 3 septate (basal and uppermost septa vary close to base and tip, respectively), base bulbous, 236–373 × 23–33 μ; conidia olive brown to brown, round, verrucose, 23–41 μ in diameter Colony on PDA, effuse, light grey with white edge; mycelium hyaline changing to light brown, sparsely septate, may or may not be constricted at septa and points of origin, 3·3–5·8 (–8·3) μ broad (terminal branches may be 1·6 μ). Spores in filter-water germinated by producing 1 to 3 hyaline germ tubes, slightly thicker at base and constricted at the point of origin, and all the tubes originated side by side. Aboct 40% of the spores germinated after 20 hours at room temperature (10–20° C) when the tubes (branched twice or thrice) measured 342–880 × 5·9–10 μ.

Pathogenicity test was conducted with a spore-*cum*-mycelial suspension (from PDA) in the field. Inoculated portions were covered with moist cotton and then the whole leaf was covered with a polythene bag which was opened daily once to moisten the swabs. Symptom first developed after 4 days as violet-blue flecks which turned to typical spots after another day when the average temperature varied from 8·3 to 25·5° C.

All the 9 cultivars, *viz.*, H–97, H–2304 (5), H–3641 (2), H–1687 (1), H–4, H–312, Rani, H–43 and H–226, grown in the farm were found susceptible of which the first one was highly susceptible and the last two were less susceptible. Although this fungus has been recorded as a pathogen in South America Central America and Africa[1–3] on tapioca and rubber, this is the first report of its occurrence from the old world.

Our thanks are due to Mr. G. Medhi who referred the problem to us for investigation.

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SENESCENCE IN ISOLATED LEAVES OF *CESTRUM NOCTURNUM* LINN.

THE natural process of senescence of leaves has been greatly affected by exogenous treatment with some chemicals like auxins[7], cytokinins[9], gibberellins[1], purines[11], imidazoles[8,10], etc. The present investigation aims at studying the effects of some chemicals on isolated leaves of *Cestrum nocturnum* Linn. (Solanaceae). It is a plant with sweet aromatic flowers and is of importance in floriculture. Leaves were floated on aqueous solutions of different chemicals ranging from 1 to 100 ppm in petri dishes maintained in the dark. One set of leaves was floated on distilled water to serve as control. The salient results are presented in Table I.

TABLE I

Chemical	Concentration (ppm)	Retardation in senescence (days)	Chemical	Concentration (ppm)	Retardation in senescence (days)
2,4–D	10, 20	2	Adenine	10, 20	4
	50	4		50, 100	6
	100	2	Benzimidazole	1, 5	18
2,3,5–T	10, 20	2		10, 20	16
	50	6		50	24
	100	2		100	20
IAA	1.5	6	CCC	1 to 100	Augmented
	10, 20, 50, 100	2			
IBA	20, 50	6	Nickel chloride	5 to 100	Promoted
GA_3	5, 10	4			
	20	8			
	50, 100	16			

2,4–D—2,4–dichlorophenoxyacetic acid; 2,3,5–T—2,3,5–trichlorophenoxyacetic acid; IAA—β–Indolylacetic acid; IBA—β–Indolylbutyric acid; GA_3—Gibberellic acid; CCC—2–chloroethyltrimethyl ammonium chloride.

The results show that of all the chemicals under study, benzimidazole is most effective in inducing retardation of senescence. This corroborates the effects of BZI on rice[2,6,11], wheat[8,10] and *Hibiscus*[4]. The next in effectiveness is GA_3. The present findings are in agreement with the findingss of Brian *et al*[1]. Third in the grade is adenine. This confirms the results on rice[11] previously reported. The effects of the two herbicides, 2,4–D and 2,4,5–T, are very mild; this finds corroboration in the work of Osborne[7]. The two auxins, IAA and IBA, also had perceptible effectss on retardation of senescence. The effect of the growth retadant, CCC, is entirely contrary to the action of benzimidazole and gibberellic acid on this species. CCC, however, brought about slight retardation in senescence in groudnut[2], *Hibiscus*[4] and *Ervatamia*[5].

Similar is the effect of nickel chloride which brought about an acceleration of senescence. This is a contrast to the effect of nickel chloride on the retardation in senescence in wheat[10] and rice[3].

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IN VITRO CLONAL PROPAGATION OF CASSAVA

CASSAVA is a vegetatively propagated crop of considerable importance and provides the cheapest and highest calorie yield per acre in Africa, South America and South India[1]. It is also used as a raw material in the manufacture of soap, plywood, paper, acetone, glycerol, glucose and dextrose[2]. It is, therefore, highly desirable to develop methods for its quick, efficient and large scale multiplication. In this regard tissue culture offers[3] a unique method for cloning and preservation of pathogen-free stocks of important germplasm.

This communication summarizes an *in vitro* method for the clonal propagation of plants from stem segments, buds and meristem tips grown on synthetic media.

The stakes of Cassava (Tapioca), *Manihot utilissima* Pohl. CV.M-4 were cut into 10 cm long pieces and planted into pots(Fig.1). Within a week the dormant lateral buds sprouted and later developed shoots. The