

plants were collected. Work is in progress to induce flowering in the species by various physiological and chemical methods.

24 October 1984; Revised 11 February 1985

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BIOCHEMICAL CHANGES IN WHITE RUST INFECTED LEAVES OF *BOERHAAVIA DIFFUSA* L

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BOERHAAVIA DIFFUSA L is a commonly available medicinal plant in and around Hyderabad. This plant has been found heavily infected by *Albugo* during August to October, 1984. The biochemical changes of white rust infected leaves of *B. diffusa* have not been worked out earlier. Hence, data collected have been presented in this paper.

The pathogen has been identified as *Albugo platensis* (Speg) Swingle¹. The healthy and diseased leaves of *B. diffusa* were analysed for chlorophyll, total phenols, catalase, peroxidase, polyphenoloxidase, reducing sugars and starch following standard techniques².

Table 1 reveals the biochemical changes in some biochemical factors as observed in diseased and healthy leaves. It is evident that the total chlorophyll content, reducing sugars, and starch contents have been reduced as compared to healthy leaves. Phenol accumulation has been observed in the infected leaves. Peroxidase and polyphenoloxidase enzymes enhanced their activity in infected leaves. In the present study catalase limited activity was found in the infected leaves. Similar results were obtained earlier²⁻⁷.

In conclusion the present data show that the natural organic composition of the host is affected as a result of infection by the pathogen.

KAK thanks CSIR authorities for the award of a fellowship.

26 December 1984; Revised 12 April 1985

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Table 1. Biochemical changes in infected leaves.

mgs of Chl	a/b ratio			Total phenols	Catalase activity (mM)	Absorbancy (420 nm)		Reducing sugars wt.	Starch wt.
	a	b	a/b ratio			Peroxidase	Polyphenol-oxidase		
Healthy	1.74	0.67	2.6	480	0.15	0.05	0.36	10270	11250
Infected	0.88	0.51	1.75	600	0.10	0.60	0.55	1501	1351

Chl is expressed as g/fr. wt; total phenols, reducing sugars and starch in $\mu\text{g/g}$ fr. wt. Catalase activity is expressed as mMH_2O_2 used/min/9. fr. wt.

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OCCURRENCE OF *GINKGOITES CRASSIPES* (FEISTMANTEL) SEWARD FROM THE JURASSIC OF ANDHRA PRADESH.

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RECENTLY the author collected fossil plants from Uppugunduru which is 19 km N.E.N. of Ongole town in Prakasam district of Andhra Pradesh. The fossils were found scattered in the neighbouring cotton fields and in the newly dug wells. The plants are preserved as impressions on the light weight sand-stones of yellow-reddish colour. The specimen described here is a Ginkgolean leaf and forms the subject matter of this paper.

Ginkgoites Seward 1919.

Ginkgoites crassipes (Feistmantel) Seward 1919.

The specimen measures 7.4 cm long and 2.5 cm broad. The lamina is obtuse with long stout petiole. The petiole is 2 mm thick. A median shallow groove is observed in the lower part of the leaf (figure 1). The veins are occasionally forked and 0.5 mm apart.

Specimen No. UPG/40/81 Botany Department,
Shivaji University, Kolhapur.

Locality: Uppugunduru, District - Prakasam (A. P.)
Horizon: Upper Jurassic.

Identification

The specimen resembles the characters of *G.*



Figure 1. *Ginkgoites crassipes* Feistm. × N.S.

crassipes (Feistmantel) Seward in having long stout petiole, unsegmented lamina and large concentration of veins. Hence it is identified as such.

Genus *Ginkgoites* Seward is represented by the following five species in India. (1) *G. lobata* Seward⁶, (2) *G. crassipes* (Feistmantel) Seward⁶, (3) *G. feistmantelii* Bose & Sukh Dev², (4) *G. rajmahalensis* Sah & Jain⁵ and (5) *G. goiraensis* Maheshwari & Banerji⁴.

Among these species *G. crassipes* is known from Sriperamatur and Sivaganga in Tamil Nadu. For the first time it is reported from Uppugunduru in Prakasam district of Andhra Pradesh. Hence it appears that *G. crassipes* has wider distribution in the east coast formations of India.

G. feistmantelii is reported from Raghavapuram (A. P.) by Bakshi¹ and from Bansa (M. P.) by Bose & Sukh Dev².

Author is grateful to UGC, New Delhi for financial assistance.

16 October 1984; Revised 20 April 1985