

EFFECT OF BUNCHY TOP VIRUS INFECTION ON THE CHEMICAL CONSTITUENTS OF BANANA FRUITS

The physiology and biochemistry of virus infected plants have been studied by a number of investigators. Nair (1969) noted that the leaves of Bunchy top virus infected banana plants contained higher percentage of sugars and total carbohydrates and lower percentage of nitrogen than those of healthy ones. The effect of Bunchy top virus infection on the chemical constituents of banana fruits is not known so far. Hence studies were made on the sugars, carbohydrates, nitrogen, phosphorus and calcium contents in the fruits of healthy and virus infected banana plants and the results obtained are presented in this paper.

Twenty plants (*Gnalipoovan* variety) of uniform growth, maintained under identical manurial and cultural operations were used for the studies. Ten plants were inoculated with viruliferous apterous aphids, *Pentalonia nigronervosa* Coq, at the rate of hundred insects per plant. Inoculations were done when the plants were seven months old. Three days after inoculation, the plants were sprayed with endrin 0.02 per cent to kill the insects. The remaining ten plants were used as control. Among the inoculated plants, eight manifested disease symptoms within fifty to eighty days. Of these only two plants produced bunches bearing small and stunted fruits. All the healthy plants kept as control produced normal bunches.

On maturity, the bunches (two from healthy and two from diseased) were harvested on the same day. Twentyfive fruits selected at random from each bunch were cut into small pieces after peeling off the skin.

Table 1
Chemical constituents of fruits of healthy and Bunchy Top Virus infected banana plants

Chemical constituents	Mean percentage on dry Wt. basis		Standard error of mean	Inference
	Healthy	Diseased		
Sugars	25.66	26.34	0.50	Highly significant
Total carbohydrates	61.60	58.15	0.15	"
Nitrogen	0.62	0.53	0.0063	"
Phosphorus	0.06	0.07	0.00	"
Calcium	0.01	0.008	0.00	"

These were then dried in a hot air oven at 60°C for 72 hours. The dried samples were powdered by means of an electrically operated grinder and stored in desiccators. The chemical constituents were analysed as per the methods of A. O. A. C. (1960). The results are presented in Table 1.

The fruits of Bunchy top virus infected banana plants contained significantly lower percentage of total carbohydrates, nitrogen and calcium and higher percentage of sugars and phosphorus than the healthy plants.

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