

MINERAL CONTENTS IN THE LEAVES OF *CARYOTA URENS* LINN INFECTED BY *PHYLLOSTICTA COCOS* COOKE

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The mineral composition in the leaves of *Caryota urens* Linn infected by *Phyllosticta cocos* Cooke were carried out. The infection stimulates enhanced content of potassium, magnesium, manganese zinc, copper, nickel, chromium and cadmium. On the contrary elements like sodium, calcium, iron, lead and cobalt content reduced in the infected leaves.

Keywords: *Caryota urens*; Minerals; *Phyllosticta cocos*.

The *Caryota urens* Linn. an important timber and toddy yielding tree widely growing in western ghats of Maharashtra and Karnataka States, often get affected by several fungal diseases. An attempt was made to study the mineral contents of *Caryota urens* Linn leaves infected by *Phyllosticta cocos*.

The healthy and infected leaves of *Caryota urens* Linn were harvested from Panhala (Kolhapur) for mineral study. 500 mg of dried healthy and infected leaves were acid digested¹. The minerals like potassium, calcium, sodium, manganese, magnesium, iron, cobalt, lead, chromium, copper, nickel zinc and cadmium were estimated by Atomic Absorption Spectrophotometer model Perkin Elmer 3030.

The results were depicted in Table.1. The element potassium requires in minor quantities in fungi and get accumulated in the leaves of *C. urens*. The enhanced potassium content may be due to greater mobility of potassium and its tendency to accumulate at the metabolically active site. Again the antagonistic effect

and disturbed ratio of mineral elements causes excessive accumulation of potassium in the diseased part as reported earlier²⁻⁴.

The element sodium and calcium content get reduced in the infected leaves of *Caryota urens*. The reduced content of sodium and calcium may be due to rapid uptake by the pathogen for its growth as reported earlier⁵⁻⁷.

The manganese is an activator of a number of enzymes required in minor quantities in fungal metabolism. The manganese content increased in the infected leaves corroborating the findings of Sasikumaran *et al*⁸. The increased content of manganese may be due to its failure to translocate or pathogen may inhibit the uptake of manganese causing its accumulation in the infected sites. On the contrary, iron content get reduced in the infected leaves. Decreased content of iron may be due to utilization by the pathogen for its pectin-enzyme system^{4,9}.

The trace elements such as copper, zinc, cadmium, nickel, lead, chromium and cobalt widely known as constituents of many metalloenzymes have played a major

Table 1. Mineral composition in the leaves of *Caryota urens* Linn infected by *Phyllosticta cocos* Cooke

Minerals*	Healthy Leaves	Infected Leaves
	2432.0	
Sodium	72.0	39.2
Calcium	1520.0	1352.0
Manganese	1.01	3.0
Iron	108.0	92.0
Magnesium	150.0	222.8
Zinc	2.0	5.4
Copper	1.2	9.6
Nickle	3.8	3.9
Lead	12.0	11.2
Cromium	0.4	1.0
Cobalt	1.0	0.8
Cadmium	0.70	0.76

* mg 100⁻¹ g of dry tissue.

role in disclosing the physiological significance. The element such as zinc, nickle, cromium, magnesium, and cadmium contents get accumulated in the infected sites of *Caryota urens* indicating less essentiality to the pathogen. On the contrary lead and cobalt contents were reduced in the infected leaves of *Caryota urens* reflecting their essentiality to the pathogen.

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