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# First Report of Phytoplasma Associated with Leaf Roll on Dhak (palas) in India

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## Abstract

A phytoplasmal leaf roll disease symptoms was observed on *Butea monosperma*. Leaflets are rolled upwards and inwards while the leaves are often bending downwards (hyponasty). Leaves are thicker than normal and leathery texture. Infected shoots are typically shorter and bear smaller leaves. On the basis of symptomatology, it was identified as Phytoplasma like organism (PLO). This is the first report of leaf roll on *B. monosperma* infected by Phytoplasma from India.

**Keywords:** *Butea monosperma*; Leaf rolls; Phytoplasma

*Butea monosperma* (Lamk) belongs to family Fabaceae. It is also known as “flame of the forest”. It is small to medium sized tree of tropical and subtropical climate found throughout the drier part of India. The plant parts are used in astringent, anti-inflammatory, anodyne, carcinomia, menorrhagia and aphrodisia [1]. Insect pests attack different parts of the tree. Several defoliators belonging to the families Arctiidae, Eucosmidae, Lasiocampidae, Lymantridae, Noctuidae, Pteridae and Sphingidae have been recorded [2]. Black leaf spot caused by *Xanthomonas buteae*, leaf spot caused by *Bipolaris* sp, *Phomopsis buteae* and *Pseudodiploidia buteae* has also been recorded [3]. Leaf roll as a Phytoplasma was observed as an important disease. Plant of *B. monosperma* growing at several places in an around of xeric habitat of Naldurg, Dist. Osmanabad were found suffering with leaf roll disease during throughout year (Sept 2010 to August 2011). The symptoms of the Phytoplasma is leaf roll, the plants affected with leaf roll suffer a greatly reduced growth and so become stunted or dwarfed. Leaflets are rolled upwards and inwards while the leaves are often bend downwards (hyponasty). Leaves are thicker than normal and leathery texture.

The lamina rolls up along running from the petiole to the tip possibly touching the leaf margin at outer two points on the way giving either a cone or a polygonal outline. The earliest symptoms are often premature leaf growth during winter. Symptoms continue to develop through the growing season but are most visible in summer. Infected shoots are typically shorter and bear smaller leaves. The diseased

specimen is preserved at Department of Botany, Arts Science and Commerce College, Naldurg.

Phytoplasmas are phloem limited plant pathogens which are associated with numerous plant diseases worldwide [4]. Phytoplasma causing diseases have been reported on pumpkin [5], stone fruit and orchids [6]. It has been revealed from the scanning of literature [7] that this is the first report on the association of Phytoplasma with leaf roll of *B. monosperma* in Maharashtra, India (Figure 1).

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**Figure 1:** Leaf roll caused by Phytoplasma on *Butea monosperma*, healthy branch (right) and infected branch (left).

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