

New First Report of Foliar Phytoplasma Disease on Bartondi Plant in India

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Abstract

A foliar phytoplasma disease symptoms were observed on *Morinda citrifolia* L. The plants affected with leaf suffer a greatly reduced growth and become stunted or dwarfed, shrinkages upwards and inwards. The leaf lamina shrinkage from the petiole to the tip. Infected shoots are typically shorter and bear smaller leaves. The present investigation was carried out on the symptomatology of this disease. It is confirmed as phytoplasma like organisms on *Morinda spp.* plant for first new report in India.

Keywords: *Morinda citrifolia* L; Foliar; Phytoplasma

Short Communication

Morinda citrifolia L. (Family: Rubiaceae) is commonly known as bartondi. Its native range extends through Southeast Asia and Australia and the species is now cultivated throughout the tropics and widely naturalized [1]. It is a large shrub to medium tree varying from three meters to twelve meter high. The white flowers occur in the leaf axils in clusters mainly in summer and autumn. Parts of the plants including fruit, leaves, root, stem and bark are used in folk medicine in Polynesian cultures to treat menstrual cramps, bowel irregularities, diabetes, liver diseases and urinary tract infections [2]. It has been shown that these are effective against minimizing the symptoms of life style-related diseases such as atherosclerosis vascular disorders [2], hypertension [3], stroke [4], diabetes, cancer [5], and contains some antioxidative, anti-inflammatory ingredients [3]. It shows antioxidant [6], antitumor [7] and angiotensin converting enzyme inhibitor activities [8]. It is an edible plant and its fruit juice is a popular drink.

In the present study investigation was carried out on the symptomatology of this disease. Observations of foliar phytoplasma disease of bartondi plants at the naturally infected fields at the different places of Paranda, Dist. Osmanabad (M.S) India between 2014 and Jan

2015. Infected shoots are typically shorter and smaller leaves. Bushy appearance due to excessive stunting of shoots, reduced intermodal length and production of reduced leaf in an apical axis (Figure 1) are the most common symptoms.

The plants affected with leaf suffer a greatly reduced growth and become stunted or dwarfed, shrinkages upwards and inwards. The leaf lamina shrinkage from the petiole to the tip. Symptoms to develop visible in rainy to winter season. According to the symptoms it is confirmed as phytoplasma like organisms. The infected plant specimen is deposited at Department of Botany, Shikshan Maharshi Gurusvarya R. G. Shinde Mahavidyalaya, Bavachi Road, Paranda Dist. Osmanabad. (M.S.) India. The scanning of available literature shows that new first report of foliar phytoplasma disease on bartondi plants in Maharashtra, India.

The different diseases on *Morinda* plants were previously reported by Scot C. Nelson [9] such as Black flag of noni, Sooty mold, Noni root-knot disease, Stem rot, Pests known to attack noni in Hawaii include aphids (*Aphis gossypii*), ants, scales (the green scale), mites, whiteflies (fringe guava whitefly), and slugs.

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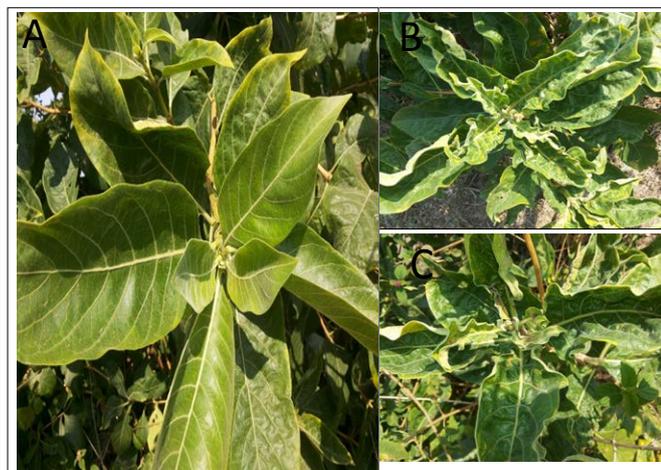


Figure 1: Foliar Phytoplasma Disease of Bartondi Plant: (A) Healthy plant in the field. (B and C) Foliar Phytoplasma affected plant in the field a shoot showing Infected shoot are typically shorter and smaller leaves.

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