

# Poisoning of 'binthamburu' (*Ipomoea asarifolia*) due to misidentification as 'kankun' (*Ipomoea aquatica*)

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## Abstract

Ingestion of 'Binthamburu' (*Ipomoea asarifolia*) by misidentification as 'kankun' (*Ipomoea aquatica*) as a leafy vegetable causes acute gastrointestinal symptoms and confusion. The authors have encountered four such cases in the past. All cases have been recorded from the dry zone of the country. Both plants are two trailing vines similar in their appearance and preferring the wet habitats. During the course of the day when exposed to sunlight, 'binthamburu' leaves mimic 'kankun' leaves by folding the leaf margins making it difficult to separate the two during harvest and only a closer examination will

reveal the difference in their leaf shapes. *Ipomoea asarifolia* toxicity in human has not been recorded but animal toxicity in North Brazil due to ingestion of *Ipomoea asarifolia* had been investigated and linked to a toxic substance identified as lectin or LTS.

## Introduction

'Binthamburu' (*Ipomoea asarifolia*) and 'kankun' (*Ipomoea aquatica*) belong to the same genus of the family Convolvulaceae. Both plants prefer wet habitats,

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particularly tank margins, canals, paddy margins and streambeds (Figures 1 and 2). Even though the two plants possess two different leaf shapes, in many instances *Ipomoea asarifolia* has been misidentified as *Ipomoea aquatica*, which is a well known leafy vegetable. Ingestion of 'binthamburu' meal when misidentified as 'kankun' causes acute gastrointestinal symptoms and confusion.



Figure 1. 'Binthamburu' (*Ipomoea asarifolia*) plant.



Figure 2. 'Kankun' (*Ipomoea aquatica*) plant.

The family Convolvulaceae has other species such as *Ipomoea batatas* ('Batala'), *Ipomoea indica* (Morning glory), *Ipomoea pes-caprae* ('Mudubinthamburu') and *Ipomoea obscura* ('Tel-kola'). 'Tel kola' is also another very popular leafy vegetable in the north central province. In ayurvedic medicine 'Binthamburu' is used for treating anaemia, neurasthenia, general debility, chronic rheumatism, tertiary syphilis and many other disorders in Sri Lanka [1].

### Case report

Four adults from a family in Ridiyagama about 16 miles from Kurunegala developed confusion and vomiting one hour after ingesting 'kankun mellum'. Later they themselves identified the plant as 'binthamburu' which

was mistaken as 'kankun'. All patients recovered within 24-48 hours. Authors have encountered four such patients in the past.

### Discussion

*Ipomoea asarifolia* toxicity in humans has not been recorded. However, animal toxicity in North Brazil due to ingestion of *Ipomoea asarifolia* had been investigated and linked to a toxic substance identified as a lectin called LTS [2]. Another study relates the tremorgenic syndrome caused by *I. asarifolia* due to tremorgenic phytotoxins or mycotoxins [3]. According to a recent study the toxicity of the plant is due to ergoline alkaloids owing to an associated epibiotic fungus [4]. Similarly, in our cases acute food poisoning may be due to toxic lectin or ergoline alkaloids or any other toxin which has not been identified. It has been identified as a plant that will induce central nervous system disease in cattle [5].

Therefore, proper identification of 'Kankun' leaves is important to prevent food poisoning due to misidentification with 'binthamburu'. The two plants grow mixed together in many instances 'binthamburu' possess rounded-cordate to sub-reniform leaves with lavender to purple funnel shaped flowers (rarely white) while 'kankun' has mostly hastate leaves with the terminal lobe broadly to narrowly triangular with purple to rarely white funnel shaped flowers [6] (Figure 3). Authors' personal experience has shown that exposure to sunlight causes folding of the leaf margins of 'binthamburu' 'mimicing' 'kankun' leaves and making it difficult to separate the two during harvest.

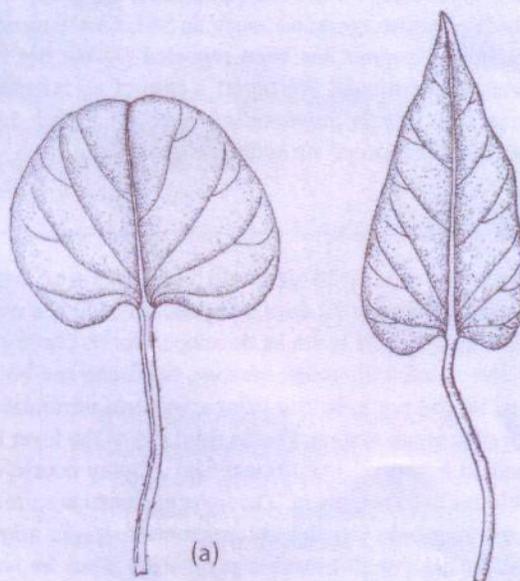


Figure 2. Comparison of the leaf shapes a. 'Binthamburu' (*Ipomoea asarifolia*) with rounded-cordate to sub-reniform leaves and b. 'Kankun' (*Ipomoea aquatica*) hastate leaves with the terminal lobe broadly to narrowly triangular.

## Case reports

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