

Research Article

SOME INCIDENCES OF ABNORMAL BRANCHING IN PALMS

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ABSTRACT

Palms are the most fascinating group of plants that attract attention of both botanists and horticulturists all over the world. It includes 212 genera and about 2779 species (Moore, 1973) of which 21 genera and about 92 species have distributed in India (Basu and Chakraverty, 1994). Majority of palms have solitary columnar stem, though few species show branched stem. Areca palm (*Areca catechu* L.), Silver Date Palm (*Phoenix sylvestris* Roxb.) and coconut palm (*Cocos nucifera* L.), are characteristically single stemmed. On very rare occasion, crowds of branches develop forming a crown of palm stem in *P. sylvestris* (Biswas, 1934).

In the present observation, the author have noticed abnormal aerial branches of the above mention three palm species of which single dichotomous branch is found in case of *A. catechu*, crown of branches upon single stem are found in two cases of *P. sylvestris* and numerous adventitious branches in aerial stem is observed in case of *C. nucifera*. These abnormal branches of palms are found in different sites of Nadia and North 24Parganas districts of West Bengal.

Keywords: Palm, Areca Palm, Silver Date Palm, Coconut Palm, Abnormal Branching

CASES

Case – I:

In the courtyards of a residential house of Mollabelia village within Haringhata Block (22.95°N, 88.57°E) of Nadia district (W.B.), an Areca palm (*A. catechu*) with single dichotomous branch has been found. The neighboring same plant species do not have such branching.

Case – II:

Six branches forming a crown of stem in *P. sylvestris* has been noticed at Baliadanga village, P. O.- Fatepur, P. S.-Haringhata (22.95°N, 88.57°E), Dist.-Nadia, W. B. This plant is existed in agricultural field outside the village.

Case – III:

At Jhowdangha village of Gaighata block (22° 56' 0"N, 88° 44' 0"E), North 24 Parganas district of West Bengal, a laying coconut tree with numerous lateral adventitious branches is observed in vacant land of a residential house. Many branches are died and new ones are coming out around stem of that coconut tree.

Case – IV:

Thirteen lateral branches, developed from a single point of the apex of stem in a Silver date palm species is found at Angrail village, P. S.-Gaighata (22° 56' 0"N, 88° 44' 0"E), Dist.- North 24Parganas, W.B. This palm species is noticed at agricultural field away from village-population (Table).

Table: The cases of abnormal branching in palms species along with their place of occurrence, nature and probable causes of such branching

Name of species	Common Name	Place of occurrences	Nature of branching	Probable causes of branching
<i>Areca catechu</i> L.	Betel or Areca Palm	Mollabelia, P. S.-Haringhata, Dist.-Nadia, W.B.	Single dichotomous branching	Division of apical meristem into two halves
<i>Phoenix sylvestris</i> Roxb.	Silver Date Palm	Baliadanga, P. O.- Fatepur, P. S.- Haringhata, Dist.- Nadia, W.B.	Branching crown with six heads	Disruption of apical part by grassing animals
<i>Phoenix sylvestris</i> Roxb.	Silver Date Palm	Angrail, P. S.- Gaighata, Dist.- North, 24Parganas, W.B.	Branching crown with thirteen heads	Disruption of apical part by grassing animals
<i>Cocos nucifera</i> L.	Coconut palm	Jhowdangha, P. S.-Gaighata, Dist.- North, 24Parganas, W.B.	Numerous lateral branching	Activation of axillary buds

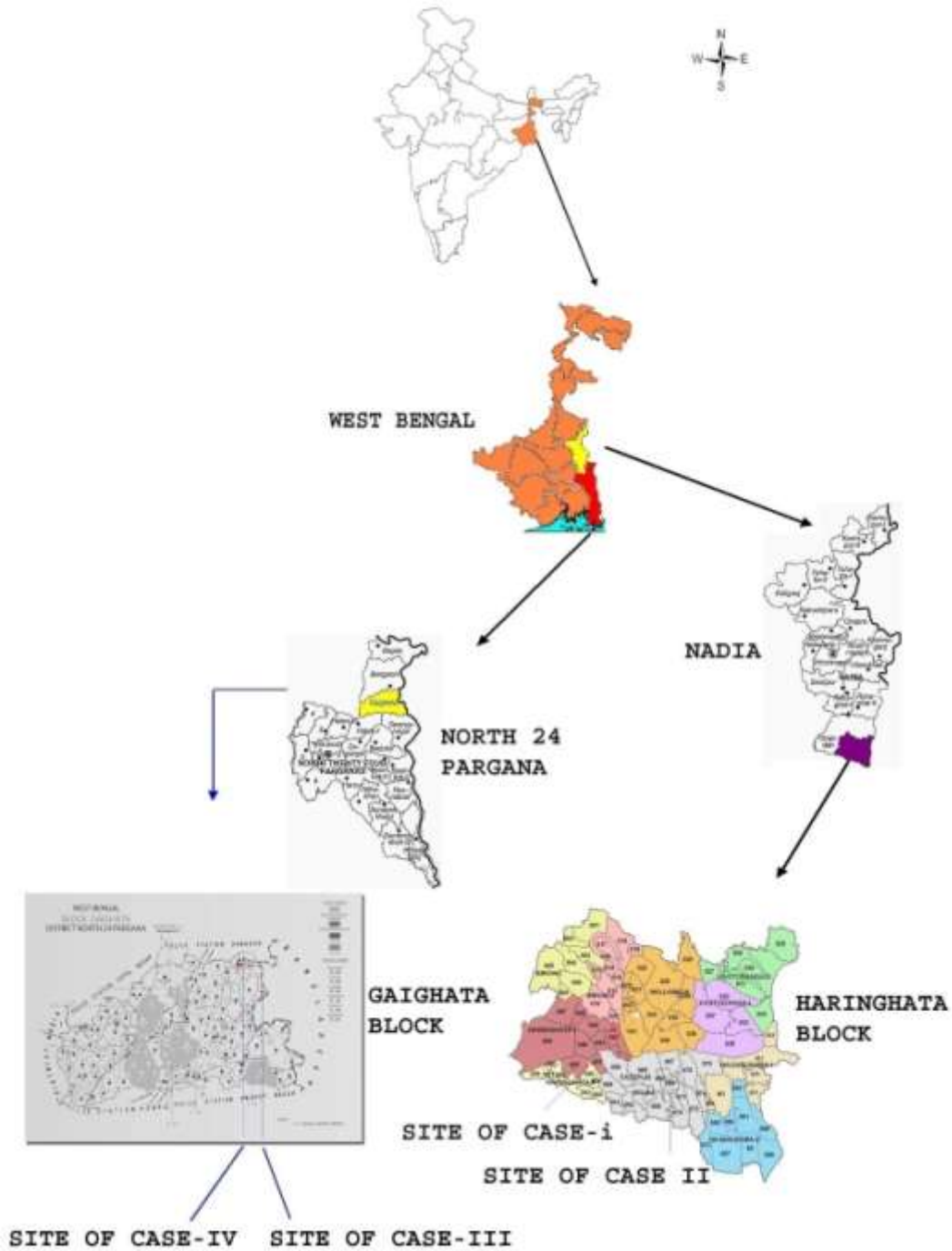


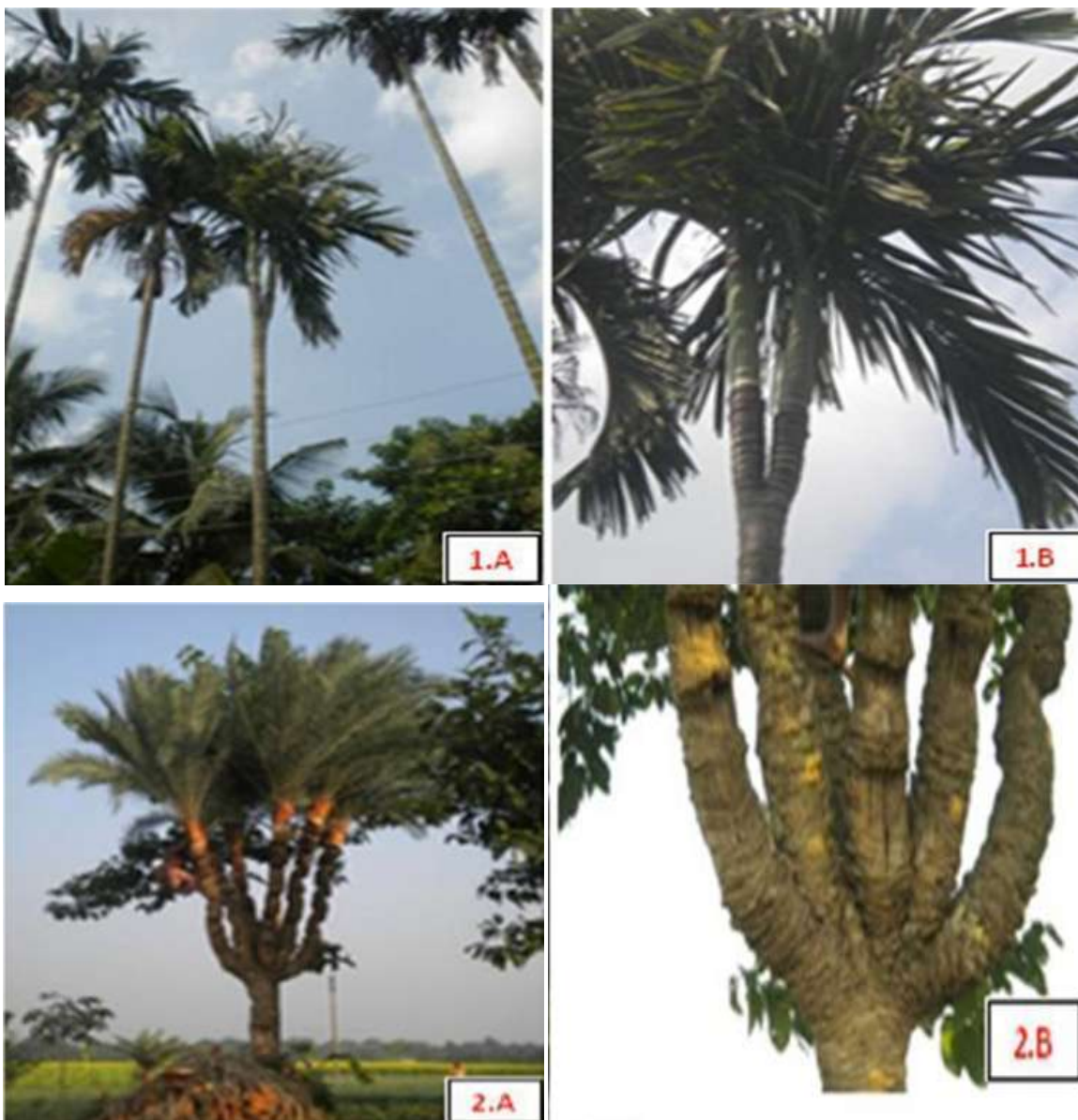
Figure 1: Site location map of different cases of abnormal branching of Palms

DISCUSSION

In case-I, single dichotomously branched stem is found in *A. catechu*. Report on branching of Areca palm is claimed to be first in this regard. The plant is about 8-10 years old. After 18ft. above from the ground level, dichotomy starts. The two branches are approximately 4-5 ft. in length. Each of these heads bear normal crown of leaves and in appropriate season it also give usual flowers and fruits. The abnormal dichotomy in *A. catechu* may be due to division of apical meristem into two halves because of some unknown reason (Figure 2: 1A & 1B).

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Six branches are developed from the single stem of *P.sylvestris* in case-II. Here, the plant is about 22 years old and the branches are derived from about 10ft. above from the soil. The branches are come out from two lateral directions and vary from 8-10ft. in length. It is known from the local people that total number of branches was seven; one of them became dried and detached from the head. All the branches bear normal leaves, flowers and fruits and give sugar juice in winter season. In the early stage of the plant, due to disruption of apical part by grassing animals branches may be originated (Figure 2: 2A & 2B).



**Figure 2: 1. Dichotomous Branching of Areca Catechu found in Mollabelia, Haringhata (Case-I)
2. Branching crown with six heads of Phoenix sylvestris found in Baliadanga, Haringhata (Case-II)**

In the courtyards of a residential house a laying coconut tree is observed where numerous lateral adventitious branches are noticed (case-III). All over the trunk the branches are developed. Some branches became dried and others are alive and growing. Though these branches bear leaves but no flower and fruits are found to be present. The coconut tree is about 30-35 years old. Due to some unknown reason, the axillary buds become active and the branches are coming out (Figure 3: 1A & 1B).

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At the head of the solitary stem of *P.sylvestris* thirteen branches are observed in case-IV. The tree is approximately 30 years old. Here, solitary stem is very short; it is about 3 ft in length. The branches are lateral, in one plane and about 12-15ft in length. At the basal part of each branches and short solitary stem unusual growth has been noticed. Normal leaves, flowers and fruits are accompanied with each branch. This abnormal branching is also may be due to destruction of apical part of stem (Figure 3: 2A & 2B)



Figure 3: 1. Branching crown with thirteen heads in *Phoenix sylvestris* found in Angrail, Gaighata (Case-III)

2. Numerous lateral branching in *Cocos nucifera* found in Jhowdangha, Gaighata (Case-IV)

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