

Species Datasheet

Datasheet No. A-076.002.001
(family.genus.species)

DBT- Network Programme

1. Taxon:

Species: *Areca catechu* L.

Subspecies

Variety

Cultivar

Hybrid

Commonly known as 'betel nut palm', 'areca palm'.

Image file

2. Synonyms: *Areca catechu* var. *alba* Blume, *A. catechu* var. *batanensis* Becc., *A. catechu* f. *communis* Becc., *A. catechu* var. *longicarpa* Becc., *A. catechu* var. *nigra* Giseke, *A. catechu* var. *silvatica* Becc., *A. macrocarpa* Becc.

3. Systematic Position:

APG IV (2016)

- Kingdom: Plantae
- Clade: Angiosperm
- Clade: Monocots
- Clade: Commelinids
- Order: Arecales Bromhead
- Family: Arecaceae Bercht. & J. Presl
- Subfamily: Arecoideae Burnett
- Genus: *Areca* L.
- Species: *A. catechu* L.

Bentham and Hooker (1862)

Kingdom: Plantae
Division: Phanerogamia
Class: Monocotyledones
Series: Calycinae
Ordo: Palmae Juss.
Genus: *Areca* L.
Species: *A. catechu* L.

4. Distribution:

Global: Archipelago, Bangladesh, Borneo, Cambodia, Caroline Island, China, Dominican Republic, Fiji, Haiti, India, Jamaica, Jawa, Laos Leeward Island, Malaya, Malaysia, Maldives, Maluku, Marianas, New Guinea, Papuaia Bismarck, Puerto Rico Santa Cruz Island, Solomo Island, South-Central Pacific Society Island, Sri Lanka, Sulawesi, Sumatera, Thailand, Vanuatu, Vietnam,

India: Andaman and Nicobar Island, West coast of India

5. Indigenous/Exotic/ Endemic; Cultivated/Wild: Cultivated

6. Threat Status:

IUCN:

BSI:

7. Habit and Habitat: Solitary tree, 20 meters tall; grows in the evergreen and semi- evergreen forests, Tropical Moist Forest.

8. Life Form: Phanerophyte

9. Economic Importance: It is often chewed along with the betel leaf, used in large indoor areas such as malls and hotels and the dry, fallen leaves are collected and hot-pressed into disposable palm leaf plates and bowls.

10. Probable Progenitor of:

11. DNA

C- value

Methodology

12. Basic chromosome number(s):

13. Zygotic chromosome number(s): $2n = 32^{1,2,3,4,5,6,7,8}$

14. Gametic chromosome number(s): $n = 16^{3,9,10}$

15. Specialized chromosomes (B chromosomes/Sex chromosomes/Polytene chromosomes/Neocentric chromosomes):

Image file

16. Ploidy level:

Image file

17. Agametoploidy

18. Nature of polyploidy (auto, segmental, allo, autoallo): Secondary allotetraploid⁵; Autopolyploid¹⁰

19. Genomic formula:

20. Aberrant chromosome number(s) (aneuploidy, aneusomy, polysomy): Somatic cells with abnormal chromosomes number $2n=16^3$, $2n=24^3$

21. Somatic chromosomes:

Karyotype Majority metacentric to submetacentric chromosomes³; Majority submetacentric to subtelocentric chromosomes⁶

Chromosome size Small³; Very small to small⁶

NOR chromosome(s) 4 NOR^{1,3}

Degree of asymmetry: Asymmetric⁶

Image file

22. Banding pattern(s):

Image file

23. Physical mapping of chromosomes:

In situ hybridization

Image file

Fluorescent in situ hybridization

Image file

24. Genomic in situ hybridization:

Image file

25. Linkage map:

Image file

26. Chromosome associations:

Female meiosis

Male meiosis $16\text{II}^{3,9,10}$; Occurrence of univalents, trivalents, quadrivalents and above quadrivalents¹⁰

Image file

27. Chromosome distribution at anaphase I: Non-disjunction³; Laggards^{3,5,10,11}; Clumping⁵; Delayed disjunction⁵; Chromosome bridges^{5,10}

28. Genetic diversity:

Chromosomal level

Image file

DNA level^{12,13,14}

29. Any other information (Aponixis; Inversion; Male sterility; Pollen grain mitosis; Pollen stainability; Translocations etc): Pollen

stainability = (82 to 98%)¹⁰, Ungerminated pollens = 15%¹¹