

Genus Datasheet

DatasheetNo. A-076.018
(Family.Genus)

DBT- Network Programme

1. Genus: *Phoenix* L.

2. Systematic Position:

APG IV (2016)

- Kingdom: Plantae
- Clade: Angiosperm
- Clade: Monocots
- Clade: Commelinids
- Order: Arecales Bromhead
- Family: Arecaceae Bercht. & J. Presl
- Genus: *Phoenix* L.

Bentham and Hooker (1862)

Kingdom: Plantae
Division: Phanerogamia
Class: Monocotyledones
Series: Calycinae
Ordo: Palmae Juss.
Genus: *Phoenix* L.
Species: *P. acaulis* Roxb. ex Buch.-Ham

3. Species:

Global: 15

India: 8

4. Taxonomic riddles:

5. Distribution:

Global: Africa, Southern Asia, India and Philippines

India: Assam, Andaman and Nicobar, Maharashtra, Sikkim, Odisha, Uttar Pradesh and West Bengal

6. Habit and Habitat: Tree. Low land rain forests, undisturbed scrub forest, wet forest or open areas on rocky slopes, ravines, cliffs at 500 – 1200 m elevation.

7. Economic Importance:

8. DNA content range:

2C (1.58-1.9 pg) ^{1,2}

4C (6.01pg) ³⁶

Methodology:

Feulgen cytophotometry ¹

Flow cytometry ²

Feulgen microdensitometry ³⁶

9. Basic chromosome number(s): $x=9$ ³¹

$x=18$ ^{29,36}

10. Zygotic chromosome number(s): $2n=28$ ^{7,40,41}

$2n=32$ ^{34,42}

$2n=34$ ⁴¹

$$2n=36^{2,3,4,5,6,8,29,30,31,32,33,35,36,37,41,42,43,44}$$

$$2n=40^{41}$$

11. Gametic chromosome number(s): $n=18^{3,31,35}$

12. Specialized chromosomes (B chromosomes/Sex chromosomes/Polytenechromosom chromosomes): Occurrence of sex chromosomes carrying distinctive nucleolar heterochromati chromosomes⁸, Presence of one heteromorphic pair of chromosomes (AA_1) in somatic cells o one heteromorphic pair during meiosis³¹

13. Ploidy level: Diploid³⁴

14. Nature of polyploidy (auto, segmental, allo, autoallo): Allopolyploid³¹

15. Aberrant chromosome number(s) (aneuploidy, aneusomaty, polysomaty): Somatic cells chromosomes numbers of $2n=19^{31}$, $2n=25^{31}$, $2n=28^{31}$, $2n=27^{31}$, $2n=30^{31}$, $2n=32^{31,42}$, $2n=2n=36^{42}$, $2n=64^{42}$

16. Karyograms: $8,31$

Meiosis: $3,31$

17. Banding pattern(s): Chromomycin fluorochrome banding² female GC rich homomorphic while male is heteromorphic

18. Physical mapping of chromosomes: Using r-DNA probe² **GISH:**

19. Phylogenetic relationship at Chromosomal; DNA level:

DNA level^{10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,35}

20. Cytogenetic mechanism(s) underlying evolution: The karyotypes of the species indicate th structural alteration of chromosomes in their origin and represent homogeneous line of evolution of date palm linkage groups revealed significant long range synteny to oil palm⁹

21. Linkage map: Genetic map⁹

22. Any other information: XY sex determining chromosome system suggested in date palm²,