

Genus Datasheet

Datasheet No. A-028.009
(Family.Genus)

DBT- Network Programme

1. Genus: *Colocasia* Schott

2. Systematic Position:

APG IV (2016)

- Kingdom: Plantae
- Clade: Angiosperm
- Clade: Monocots
- Order: Alismatales R. Br. ex Bercht. & J. Presl
- Family: Araceae Juss.
- Genus: *Colocasia* Schott

Bentham and Hooker (1862)

Kingdom: Plantae
Division: Phanerogamia
Class: Monocotyledones
Series: Nudiflorae
Ordo: Aroideae Arn.
Genus: *Colocasia* Schott

3. Species:

Global: Tropical Asia, Malay Archipelago.

India: East to Central Himalaya, North East India, North East India, Andaman & Nicobar Islands.

4. Taxonomic riddles:

5. Distribution:

Global: 8

India: 7

6. Habit and Habitat: Herb, Tropical humid forest.

7. Economic Importance: Medicinal, use as vegetable.

8. DNA content range:

$2C(4.21-12.51\text{pg})^4$

Methodology:

Flow cytometry⁴

9. Basic chromosome number(s): $x=7^{6,24}$

$x=13^4$

$x=14^{4,14,23}$

$x=19^4$

10. Zygotic chromosome number(s): $2n=14^{57,71}$

$2n=21^{29}$

$2n=22^{56}$

$2n=24^{62}$

$$2n=26^{24,56}$$

$$2n=28^{1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,51,53,54,56,58,59,60,61,}$$

$$2n=30^{24,51}$$

$$2n=36^{32}$$

$$2n=38^{4,24,56}$$

$$2n=42^{4,5,6,10,11,12,13,14,18,21,23,24,29,30,31,33,34,52,55,56,57,59,60,64,66,67,71,72,73}$$

$$2n=48^{33}$$

$$2n=56^4$$

$$2n=84^{31}$$

11. Gametic chromosome number(s): $n=14^{9,10,35,36,56,63,64}$

12. Specialized chromosomes (B chromosomes/Sex chromosomes/Polytenechromosomes/ N chromosomes):

13. Ploidy level: Diploid^{3,4,6,8,9,10,11,12,14,18,19,20,60,64,69,70,71}

Triploid^{4,10,11,12,14,18,60,64,72,73}

Tetraploid⁴

Hexaploid⁶

14. Nature of polyploidy (auto, segmental, allo, autoallo): Autotriploidy¹⁴

15. Aberrant chromosome number(s) (aneuploidy, aneusomaty, polysomaty): Variant chromosomal cells showing $2n=18^{56}$, $2n=20^{24}$, $2n=22^{24,56}$, $2n=28^{56}$, $2n=33^{24}$

16. Karyograms: ^{14,16,19,20,23,24,33,51,69,71}

Meiosis: ^{9,10,36,4}

17. Banding pattern(s): CMA⁺ bands^{56,51}, DAPI⁺ bands²⁶

18. Physical mapping of chromosomes: r-DNA sites²³

GISH:

19. Phylogenetic relationship at Chromosomal; DNA level: Chromosomal level¹⁴

DNA level^{13,37,38,39,40,41,42,43,44,45,46,47,48,49,50,74,7}

20. Cytogenetic mechanism(s) underlying evolution: Chromosome evolution in *Colocasia* may not be random changes with particular restrictions for the occurrence or fixation of structural rearrangements. Gene rearrangements through chromosomal structural alterations have played some roles in

22. Any other information: Pollen stainability^{33%¹⁰, 90%¹⁰, 95%^{10,63}}
Desynapsis^{63,72,73}
Pollen mitosis (n= 8,10,13,14,15,16,17,18)⁶⁴
Inversion heterozygosity⁷³
Heterozygote pericentric inversion¹⁴