Species Datasheet

Datasheet No. A-028.009.005 **DBT- Network Programme**
(family.genus.species)

1. Taxon:

Species *Colocasia esculenta* (L.) Schott
Subspecies
Variety
Cultivar
Hybrid

Image file

2. Synonyms: *Alocasia dussii* Dammer, *A. illustris* W. Bull, *Aron colocasium* (L.) St.-Lag., *Arum chinense* L., *A. C.*L., *A. colocasioides* Desf., *A. esculentum* L., *A. lividum* Salisb., *A. nymphaeifolium* (Vent.) Roxb., *A. peltatum* Lam., *Caladium acre* R.Br., *C. C.*(L.) W.Wight, *C. colocasioides* (Desf.) Brongn., *C. esculentum* (L.) Vent., *C. glycyrrhizum* Fraser, *C. nymphaeifolium* Vent., *C. violaceum* Desf., *C. violaceum* Engl., *Calla gaby* Blanco, *C. virosa* Roxb., *Colocasia acris* (R.Br.) Schott, *C. aegyptiaca* Samp., *C. antiquorum* var. *acris* (R.Br.) Schott, *C. antiquorum* f. *acuatica* Makino, *C. antiquorum* var. *aquatilis* (Hassk.) Engl. & K. Krause, *C. antiquorum* f. *eguimo* Makino, *C. antiquorum* var. *esculenta* (L.) Schott, *C. antiquorum* var. *euchlora* (K.Koch & Linden) Schott, *C. antiquorum* var. *globulifera* Engl. & K.Krause, *C. antiquorum* var. *illustris* (W.Bull) Engl., *C. antiquorum* var. *multifolia* Makino, *C. antiquorum* var. *nymphaeifolia* (Vent.) Engl., *C. antiquorum* f. *oyasetage* Makino, *C. antiquorum* var. *patens* Makino, *C. antiquorum* f. *purpurea* Makino, *C. antiquorum* var. *rosea* Makino, *C. antiquorum* var. *rupicola* Haines, *C. antiquorum* var. *stolonifera* Haines, *C. antiquorum* f. *yamamotoi* Makino, *C.C.* (L.) Huth, *C. esculenta* var. *acris* (R.Br.) A.F.Hill, *C. esculenta* var. *aquatilis* Hassk., *C. esculenta* f. *ebiimo* Makino, *C. esculenta* var. *euchlora* (K.Koch & Linden) A.F.Hill, *C.esculenta* var. *globulifera* (Engl. & K.Krause) R.A.Young , *C. esculenta* var. *illustris* (W.Bull) A.F.Hill, *C. esculenta* var. *nymphaeifolia* (Kunth) A.F.Hill, *C. esculenta* f. *rotundifolia* Makino, *C. esculenta* var. *rupicola* (Haines) H.B.Naithani, *C. esculenta* var. *stolonifera* (Haines) H.B.Naithani, *C. euchlora* K.Koch & Linden, *C. formosana* Hayata, *C. gracilis* Engl., *C. himalensis* Royle, *C. konishii* Hayata, *C. neocaledonica* Van Houtte, *C. nymphaeifolia* (Vent.) Kunth, *C. peltata* (Lam.) Samp., *C. vera* Hassk., *C. violacea* (Desf.) auct., *C. virosa* (Roxb.) Kunth, *C. vulgaris* Raf., *Leucocasia esculenta* (L.) Nakai, *Steudnera virosa* (Roxb.) Prain, Zantedeschia virosa (Roxb.) K.Koch.

3. Systematic Position:

APG IV (2016)

- Kingdom: Plantae
- Clade: Angiosperm
- Clade: Monocots
- Order: Alismatales R. Br. ex Bercht. & J. Presl
- Family: Araceae Juss.
- Genus: *C.*Schott
- Species: *C. esculenta* (L.) Schott

Bentham and Hooker (1862)
Kingdom: Plantae
Division: Phanerogamia
Class: Monocotyledones
Series: Nudiflorae
Ordo: Aroideae Arn.
Genus: *Colocasia* Schott
Species: *C. esculenta* (L.) Schott

4. Distribution:

Global: India to South China and Sumatera

India: Throughout India

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

6. Threat Status:

IUCN: Least Concern

BSI:

7. Habit and Habitat: Herb, occurs as colonies on river banks, in open swampy places, on slopes and on rocks and banks in the splash-zone of waterfalls. Very occasionally found in forest under storey

8. Life Form: Tuberous geophytes

9. Economic Importance: The rhizomes, petioles, and inflorescences are used as a vegetable. The rhizomes are used medicinally for treating swellings, abscesses, snake and insect bites, and swollen lymph nodes in the neck. Cultivated as vegetable crop.

10. Probable Progenitor of:

11. DNA

C- value	Methodology
2C (4.44-12.51pg) [4]	Flow cytometry [4]

12. Basic chromosome number(s): x=7 [6], x=14 [14,23]

13. Zygotic chromosome number(s): 2n=21[29]

2n=28[3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,54]

2n=36[32]

2n=42[4,5,10,11,12,13,14,18,21,23,29,30,31,33,34,55]

2n=56[4]

2n=84[31]

14. Gametic chromosome number(s): n=14 [9,10,35,36]

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

Image file

16. Ploidy level: Diploid [4,6,8,9,10,11,12,14,18,19,20]

Triploid [4,10,11,12,14,18]

Tetraploid [4]

Image file

17. Agametoploidy

18. Nature of polyploidy (auto, segmental, allo, autoallo): Autotriploidy[14]

19. Genomic formula:

20. Aberrant chromosome number(s) (aneuploidy, aneusomaty, polysomaty):

21. Somatic chromosomes:

Karyotype: Majority metacentric chromosomes [4,16,19,20,23,24,25,33], Majority submetacentric chromosomes [10,14,19,20]

Chromosome size: Very small to small [11,19,20,29], Small[10,16,29], Small to medium [24,25,29,33]

NOR chromosome(s): 2 NOR [16,33], 6 NOR [24,25]

Degree of asymmetry: Symmetrical [11,19,26], Asymmetrical [11], Stebbin's 1A class [4], 1B class [4], 2A class [4,19], 2B class [4,19]

Image file

22. Banding pattern(s): CMA^+ bands [26]

$DAPI^+$ bands [26]

Image file

23. Physical mapping of chromosomes:

In situ hybridization

Image file

Fluorescent in situ hybridization r-DNA sites [23]

Image file

24. Genomic in situ hybridization:

Image file

25. Linkage map:

Image file

26. Chromosome associations:

Female meiosis

Male meiosis 14II [9,10,36], Univalents, bivalents, trivalents [10], Secondary chromosome association 6(1)+1(2)+2(3) [9]

Image file

27. Chromosome distribution at anaphase I: Bridge without fragment [9], laggards [10]

28. Genetic diversity:

Chromosomal level

Image file

DNA level [13,37,38,39,40,41,42,43,44,45,46,47,48,49,50]

29. Any other information (Apomixis; Inversion; Male sterility; Pollen grain mitosis; Pollen stainability; Translocations etc): Pollen stainability 95% [10]

Heterozygous for pericentric rearrangement [14]