

Species Datasheet

Datasheet No. A-028.008.001
(family.genus.species)

DBT- Network Programme

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1. Taxon:

Species *Caladium bicolor* (Aiton) Vent.

Subspecies

Variety

Cultivar

Hybrid

Image file

2. Synonyms: *Alocasia rex* N.E.Br., *Alocasia roezlii* N.E.Br., *Arum bicolor* Aiton, *A. pellucidum* Fulchir ex Kunth, *A. pulchrum* Salisb., *A. vermitoxicum* Vell., *A. vermitoxicum* Vell. ex Kunth, *Caladium albopunctatissimum* Jacob-Makoy ex H.Karst., *C. amoenum* Engl., *C. appunianum* Engl., *C. argyrosphilum* Lem., *C. barraquinii* Hérincq, *C. barraquinii* Lem., *C. bicolor* var. *albomaculatum* Engl., *C. bicolor* var. *argyrosphilum* (Lem.) Engl., *C. bicolor* f. *argyrosphilum* (Lem.) Engl., *C. bicolor* f. *argyrosphilum* (Lem.) Vent., *C. bicolor* var. *barraquinii* (Hérincq) Engl., *C. bicolor* f. *barraquinii* (Hérincq) Engl., *C. bicolor* var. *bohemicum* Engl., *C. bicolor* var. *brongniartii* (Lem.) Engl., *C. bicolor* f. *brongniartii* (Lem.) Engl., *C. bicolor* f. *brongniartii* (Lem.) Vent., *C. bicolor* var. *chantinii* (Lem.) Engl., *C. bicolor* f. *chantinii* (Lem.) Engl., *C. bicolor* f. *chantinii* (Lem.) Vent., *C. bicolor* var. *curwadlii* Engl., *C. bicolor* var. *devosianum* (Lem.) Engl., *C. bicolor* f. *devosianum* (Lem.) Engl., *C. bicolor* f. *devosianum* (Lem.) Vent., *C. bicolor* var. *duchartrei* Engl., *C. bicolor* var. *eckhartii* Engl., *C. bicolor* var. *enkeanum* (K.Koch) Engl., *C. bicolor* var. *haematostigma* Kunth, *C. bicolor* f. *haematostigma* (Kunth) Engl., *C. bicolor* var. *hendersonii* Engl., *C. bicolor* var. *houbyanym* Engl., *C. bicolor* var. *houlletii* (Lem.) Engl., *C. bicolor* var. *ketteleri* Engl., *C. bicolor* var. *kochii* Engl., *C. bicolor* var. *kramerianum* Engl., *C. bicolor* var. *laucheanum* (K.Koch) Engl., *C. bicolor* var. *leopoldii* Engl., *C. bicolor* var. *lindenii* Engl., *C. bicolor* var. *macrophyllum* (Lem.) Engl., *C. bicolor* f. *macrophyllum* (Lem.) Engl., *C. bicolor* f. *macrophyllum* (Lem.) Vent., *C. bicolor* var. *marginatum* (K.Koch & C.D.Bouché) Engl., *C. bicolor* var. *mirabile* (Lem.) Engl., *C. bicolor* f. *mirabile* (Lem.) Engl., *C. bicolor* f. *mirabile* (Lem.) Vent., *C. bicolor* var. *neumannii* (Lem.) Engl., *C. bicolor* f. *neumannii* (Lem.) Engl., *C. bicolor* f. *neumannii* (Lem.) Vent., *C. bicolor* var. *pellucidum* (DC.) Kunth, *C. bicolor* var. *pellucidum* (DC.) Engl., *C. bicolor* var. *perrieri* (Lem.) Engl., *C. bicolor* f. *perrieri* (Lem.) Engl., *C. bicolor* f. *perrieri* (Lem.) Vent., *C. bicolor* var. *pictum* (DC.) Kunth, *C. bicolor* var. *poecile* (Schott) Engl., *C. bicolor* f. *poecile* (Schott) Engl., *C. bicolor* var. *regale* (Lem.) Engl., *C. bicolor* f. *regale* (Lem.) Engl., *C. bicolor* f. *regale* (Lem.) Vent., *C. bicolor* f. *robustum* Jonker, *C. bicolor* var. *roseomaculatum* Engl., *C. bicolor* var. *rubellum* (K.Koch & Fint.) Engl., *C. bicolor* var. *rubicundum* Engl., *C. bicolor* f. *rubicundum* Stehlé, *C. bicolor* var. *rubrivenium* Engl., *C. bicolor* var. *sieboldii* Engl., *C. bicolor* var. *splendens* (K.Koch & Fint.) Engl., *C. bicolor* f. *splendens* (K.Koch & Fint.) Engl., *C. bicolor* var. *stangeanum* (K.Koch) Engl., *C. bicolor* var. *surinamense* (Miq.) Engl., *C. bicolor* f. *surinamense* (Miq.) Stehlé, *C. bicolor* var. *transparens* Engl., *C. bicolor* var. *vellozoanum* (Schott) Engl., *C. bicolor* f. *vellozoanum* (Schott) Engl., *C. bicolor* var. *vermitoxicum* (Vell.) Stellfeld, *C. bicolor* var. *verschaffeltii* (Lem.) Engl., *C. bicolor* f. *verschaffeltii* (Lem.) Engl., *C. bicolor* f. *verschaffeltii* (Lem.) Vent., *C. bicolor* var. *wightii* (Lem.)

Engl., *C. bicolor* f. *wightii* (Lem.) Engl., *C. brongniartii* Lem., *C. chantinii* Lem., *C. concolor* K.Koch, *C. connaertii* Engl., *C. curwadii* Engl., *C. devosianum* Lem., *C. discolor* Engl., *C. duchartrei* Engl., *C. dussii* Sieber & Voss, *C. eckhartii* Lem. ex Engl., *C. enkeanum* K.Koch, *C. firmulum* Schott, *C. gaerdtii* K.Koch & Fint., *C. griseoargenteum* Engl., *C. haageanum* K.Koch, *C. haematostigma* Kunth, *C. hendersonii* Engl., *C. hortulanum* Bridsey, *C. × hortulanum* Birdsey, *C. houbyanum* Engl., *C. houlletii* Lem., *C. jacquinii* Ten., *C. ketteleri* Engl., *C. kochii* K.Koch, *C. kramerianum* Engl., *C. laucheanum* K.Koch, *C. leopoldii* Engl., *C. lindenii* Engl., *C. macrophyllum* Lem., *C. marginatum* K.Koch & C.D.Bouché, *C. marmoratum* Mathieu ex K.Koch, *C. martersteigianum* Engl., *C. medioradiatum* L.Linden & Rodigas, *C. mirabile* Lem., *C. mooreanum* Engl., *C. neumannii* Lem., *C. ottonis* Engl., *C. pallidinervium* Engl., *C. pallidum* K.Koch & C.D.Bouché, *C. pellucidum* DC., *C. perrieri* Lem., *C. pictum* DC., *C. poecile* Schott, *C. punctatissimum* Engl., *C. purdieanum* Schott, *C. pusillum* K.Koch, *C. regale* Lem., *C. reichenbachianum* Stange ex Engl., *C. rougieri* Verschaff., *C. rubellum* K.Koch & Fint., *C. rubricaulis* Lem., *C. rubrovenium* Engl., *C. sagittifolium* Sieber ex Engl., *C. sieboldii* Engl., *C. sororium* Schott, *C. splendens* K.Koch & Fint., *C. spruceanum* Schott, *C. stangeanum* K.Koch, *C. steudneriifolium* Engl., *C. surinamense* Miq., *C. thelemannii* Verschaff., *C. thripedestum* Lem., *C. vellozoanum* Schott, *C. verschaffeltii* Lem., *C. wagneri* Engl., *C. wightii* Lem., *Cyrtospadix bicolor* (Aiton) Britton & P.Wilson

3. Systematic Position:

APG IV (2016)

- Kingdom: Plantae
- Clade: Angiosperm
- Clade: Monocots
- Order: Alismatales R. Br. ex Bercht. & J. Presl
- Family: Araceae Juss.
- Genus: *Caladium* Vent.
- Species: *C. bicolor* (Aiton) Vent.

Bentham and Hooker (1862)

Kingdom: Plantae
 Division: Phanerogamia
 Class: Monocotyledones
 Series: Nudiflorae
 Ordo: Aroideae Arn.
 Genus: *Caladium* Vent.
 Species: *C. bicolor* (Aiton) Vent.

4. Distribution:

Global: Central America to Argentina (Salta)

India: Naturalised in South India

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

6. Threat Status:

IUCN:

BSI:

7. Habit and Habitat: Herb, occurring on roadsides and shady waste places in the forest region

8. Life Form: Tuberous geophytes

9. Economic Importance: Use as ornamental plant

10. Probable Progenitor of:

11. DNA

C- value

2C (11.04 pg) ¹

2C (20.26 pg) ¹

2C (4.67-9.75 pg) ²

2C (9.13-9.75 pg) ²

4C (22.07 pg) ¹

4C (40.52 pg) ¹

Methodology

Feulgen microdensitometry ¹

Flow cytometry ²

12. Basic chromosome number(s): $x=15$ ¹⁶

13. Zygotic chromosome number(s): $2n=20$ ²

$2n=26$ ^{4,7,24}

$2n=28$ ^{3,4,5,6,7,8,9,10,24}

$2n=30$ ^{2,3,4,7,9,11,12,13,14,15,16,17,18,19,24}

$2n=32$ ^{1,4,24}

$2n=48$ ²⁰

$2n=66$ ¹

14. Gametic chromosome number(s): $n=14$ ^{4,5}

$n=15$ ^{4,17}

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

Image file

16. Ploidy level: Diploid ⁵

Image file

17. Agametoploidy

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

19. Genomic formula:

20. Aberrant chromosome number(s) (aneuploidy, aneusomaty, polysomaty): Variant chromosome number in somatic cells showing $2n=14$ ⁶, $2n=19$ ², $2n=24$ ⁴, $2n=27$ ^{5,6}, $2n=28$ ⁶, $2n=29$ ⁶, $2n=30$ ^{4,5,6}, $2n=31$ ^{5,6}, $2n=32$ ^{4,5,6}, $2n=33$ ⁶, $2n=58$ ⁴

21. Somatic chromosomes:

Karyotype: Majority metacentric chromosomes ^{1,4,5,17}, Majority nearly submetacentric chromosomes ⁴, Majority submetacentric chromosomes ^{1,4,18}, Majority

metacentric to nearly submetacentric chromosomes⁴, Majority nearly metacentric chromosomes⁵

Chromosome size: Small ^{1,4}, Small to medium ^{1,4,5,17}, Small to large^{4,18}, Small to very large⁴

NOR chromosome(s): 2 NOR ^{1,4,18}, 4 NOR ⁴, 6 NOR ^{1,4}, 8 NOR ⁴, 10 NOR ^{4,5,17}, 14 NOR ⁵

Degree of asymmetry: Asymmetrical ¹⁷

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 14II ^{4,5}, 15II ^{4,17}

Image file

27. Chromosome distribution at anaphase I: Unequal separation with 18:14 chromosomes in two poles ⁴, Irregularities ⁵, Inversion bridge ⁵, late separation of some of the chromosomes⁵, Single chromatid bridge and acentric fragment¹⁷

28. Genetic diversity:

Chromosomal level

Image file

DNA level ^{21,22,23}

29. Any other information (Apomixis; Inversion; Male sterility; Pollen grain mitosis; Pollen stainability; Translocations etc): Paracentric inversion ¹⁷