

Species Datasheet

Datasheet No. A-074.001.003
(family.genus.species)

DBT- Network Programme

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1. Taxon:

Species *Drimia indica* (Roxb.) Jessop
Subspecies
Variety
Cultivar
Hybrid

Image file

2. Synonyms: *Albuca reflexa* K. Krause & Dinter, *Aletris littoralis* J. Koenig ex Steud., *Anthericum hyacinthoides* Willd. ex Kunth, *Erythronium hyacinthoides* Royle, *Indurgia govindappae* (A. Boraiah & Fathima) Speta, *Indurgia indica* (Roxb.) Speta, *Indurgia nagarjunae* (Hemadri & Swahari) Speta, *I. wightiana* (Hook.f.) Speta, *Ledebouria maculata* Dalzell, *Melanthium hyacinthoides* Royle, *Ornithogalum desertorum* J. C. Manning & Goldblatt, *Scilla coromandeliana* Roxb., *S. indica* Roxb., *Thuranthos coromandelianus* (Roxb.) Speta, *T. govindappae* (A. Boraiah & Fathima) Speta, *T. indicus* (Roxb.) Speta, *T. nagarjunae* (Hemadri & Swahari) Speta, *T. wightianus* (Hook.f.) Speta, *Urginea amboensis* Baker, *U. indica* (Roxb.) Kunth, *U. sebirii* Berhaut, *U. wightiana* Hook.f

3. Systematic Position:

APG IV (2016)

- Kingdom: Plantae
- Clade: Angiosperms
- Clade: Monocots
- Order: Asparagales Link
- Family: Asparagaceae Juss.
- Subfamily: Scilloideae Burnett
- Genus: *Drimia* Jacq.
- Species: *D. indica* (Roxb.) Jessop

Bentham and Hooker (1862)

Kingdom: Plantae
Division: Phanerogamia
Class: Monocotyledones
Series: Coronarieae
Ordo: Liliaceae Juss.
Genus: *Drimia* Jacq.
Species: *D. indica* (Roxb.) Jessop

4. Distribution:

Global: Tropical and South Africa, India, Indo-China, Myanmar, Nepal, Pakistan, Sri Lanka, Vietnam

India: Andhra Pradesh, East Himalaya, Karnataka, Kerala, Maharashtra, Orissa, Rajasthan, Tamil Nadu, Uttarakhand, West Himalaya.

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

6. Threat Status:

IUCN:

BSI:

7. Habit and Habitat: Scapigerous bulbous herb, Tropical dry forest, occurs in a range of altitudes from sea-level to 2600 m. It grows on dry habitat such as sandy ground, sandstone, rocky planes.

8. Life Form: Bulbous geophytes.

9. Economic Importance: *D. indica* commonly called as 'Indian squill' has long history of medicinal use. The bulbs are used to make cardiac drug and have anticancerous. Powder of the bulb is a good adhesive containing mucilage and hence used in Calico printing.

10. Probable Progenitor of:

11. DNA

C- value

2C (23.38 pg)¹

2C (23.47 pg)²

2C (23.83 pg)²

2C (24.58 pg)²

2C (35.57 pg)²

4C (16.84 pg)³

Methodology

Flow Cytometry^{1,2}

Feulgen staining³

12. Basic chromosome number(s): $x=10$ ²⁵

13. Zygotic chromosome number(s):

$2n=20$ ^{1, 2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26}

$2n=22$ ⁸

$2n=30$ ^{2, 8, 9, 11, 12, 21, 27, 28, 29}

$2n=40$ ^{9, 12, 16, 28, 31}

$2n=60$ ^{28, 32}

14. Gametic chromosome number(s): $n=10$ ^{10, 13, 14, 15, 18, 19, 25, 28}

$n=20$ ^{10, 14, 28}

15. Specialized chromosomes (B chromosomes/ Sex chromosomes/ Polytene chromosomes/

Neocentric chromosomes): B chromosomes (1- 3)¹⁶; (3)¹⁵; (6)^{3, 13, 32}; (1- 7)⁷; (6- 7)⁹; (10)

16

Image file

16. Ploidy level: Diploid ^{1, 2, 5, 9, 13, 14, 15, 16, 18, 19, 20, 21, 25, 29}

Triploid ^{2, 9, 21, 27, 28, 29}

Tetraploid ^{3, 7, 12}

Hexaploid ^{28, 32}

Image file

17. Agametoploidy

18. Nature of polyploidy (auto, segmental, allo, autoallo): Autotetraploid ²⁸

19. Genomic formula:

20. Aberrant chromosome number(s) (aneuploidy, aneusomy, polysomy): Varying chromosome number $2n=21^5$, $2n=22^5$, $2n=23^5$, $2n=24^{5, 16}$; $2n=28^{16}$, $2n=32^{16}$, $2n=34^{16}$, $2n=36^{16}$, $2n=38^{16}$, $2n=46^{16}$; Polysomy ³

21. Somatic chromosomes:

Karyotype Majority subtelocentric chromosomes ^{2, 5, 13, 15, 18, 20, 21, 28, 29, 31}; Majority acrocentric chromosomes ²⁵

Chromosome size Small to very large ^{2, 13, 14, 18, 20, 28}; Small to medium ²⁵

NOR chromosome(s) 2 NOR ^{2, 13, 18, 31}; (2- 5) NOR ¹³; (2- 12) NOR ²⁸

Degree of asymmetry: Highly asymmetrical ^{13, 14, 15, 28}; Stebbin's 2b class ¹⁵; Stebbin's 1b class ^{2, 21}

Image file

22. Banding pattern(s): Fluorescent banding by CMA/ DAPI staining ²

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 10 II^{13, 14, 15, 18, 19, 25, 28}; 1- 4 IV²⁸

Image file

27. Chromosome distribution at anaphase I: Normal^{5, 13, 14, 25}; bridges with laggard²⁸;
Disjunction²⁵

28. Genetic diversity:

Chromosomal level^{2, 16}

Image file

DNA level^{29, 33, 43}

29. Any other information (Apomixis; Inversion; Male sterility; Pollen grain mitosis; Pollen stainability; Translocations etc): Pollen grain mitosis: (n= 10)¹³

Pollen stainability: (93- 95%)¹⁴; (92- 98%)¹⁵