

Genus Datasheet

Datasheet No. A-074.002
(Family.Genus)

DBT- Network Programme

1. Genus: *Asparagus* L.

2. Systematic position:

APG IV (2016)

- Kingdom: Plantae
- Clade: Angiosperms
- Clade: Monocots
- Order: Asparagales
- Family: Asparagaceae Juss.
- Genus: *Asparagus* L.

Bentham and Hooker (1862)

Kingdom: Plantae
Division: Phanerogamia
Class: Monocotyledones
Series: Coronarieae
Ordo: Liliaceae Juss.
Tribus: Asparageae Dumort.
Genus: *Asparagus* L.

3. Species:

Global: ~218

India: 17

4. Taxonomic riddles: 8, 15, 23, 47, 48, 49, 50, 51, 52, 53, 54

5. Distribution:

Global: Europe, Africa, Asia, Australia, Southern America.

India: Throughout India

6. **Habit and Habitat:** Erect or scandent, mostly glabrous herbaceous or sub-shrubby perennials, roots cylindrical or fusiform, lateral roots sometimes tuberous. Grows in Tropical, Sub-tropical dry forest, Temperate mixed forest and Mediterranean forest.

7. **Economic Importance:** Used in Ayurveda, Unani, Sidha, and in Veterinary medicine; Used as ornamental plants and as popular vegetables.

8. DNA content range:

C- value

2C (1.44-3.03 pg) ^{8,15}

4C (20.82-34.02 pg) ⁷

Methodology:

Flow cytometry ^{8,15}

Feulgen cytophotometry ⁷

9. Basic chromosome number(s): $x=10$ ¹⁹

10. Zygotic chromosome number (s):

$$2n=16$$
 ²⁷

$$2n=18$$
 ²⁹

$$2n=20$$
 ^{1, 2, 3, 7, 8, 10, 11, 12, 15, 17, 18, 19, 20, 24, 25, 26, 30, 31, 32, 33, 43}

$$2n=22$$
 ^{34, 35}

$$2n=30$$
 ³⁵

$$2n=40$$
 ^{2, 3, 7, 8, 9, 10, 11, 20, 36, 37}

$$2n=48$$
 ³⁸

$$2n=60$$
 ^{2, 3, 7, 21}

11. Gametic chromosome number (s):

$$n=10$$
 ^{4, 5, 6, 12, 13, 14}

$$n=20$$
 ^{4, 20, 22}

$$n=30$$
 ^{4, 22, 28, 39}

12. Specialized chromosomes (B chromosomes/ Sex chromosomes/ Polytene chromosomes/ chromosomes): B chromosomes (1- 4) ²

13. Ploidy level: Diploid ^{2, 3, 4, 7, 8, 10, 11, 12, 25, 26, 44}

Tetraploid ^{3, 4, 7, 8, 10, 11, 37}

Hexaploid ^{4, 7}

14. Nature of polyploidy (auto, segmental, allo, autoallo): Autotetraploid ³⁷

15. Aberrant chromosome number(s) (aneuploidy, aneusomy, polysomy): Varying chromosome numbers in somatic cells $2n=18$ ³⁰

16. Karyograms: ^{4, 7, 11, 14, 27, 30}

Meiosis: ^{4, 11, 12, 14, 37, 39}

17. Banding pattern(s):

18. Physical mapping of chromosomes:

GISH:

19. Phylogenetic relationship at Chromosomal; DNA level: Chromosomal level ³

DNA level ^{8, 15, 23, 47, 48, 49, 50, 51, 52}

20. Cytogenetic mechanism (s) underlying evolution: Robertsonian structural changes of ch

22. Any other information: Pollen stainability- 90%⁴