

Genus Datasheet

Datasheet No. A-377.011
(Family. Genus)

DBT- Network Programme

1. Genus: *Justicia* L.

Bentham and Hooker (1862)

- Kingdom: Plantae
- Division: Phanerogamia
- Class: Dicotyledons
- Subclass: Gamopetalae
- Series: Bicarpellatae
- Cohors: Personales
- Family: Acanthaceae Juss.
- Genus: *Justicia* L.

2. Systematic Position:

APG IV (2016)

- Kingdom: Plantae
- Clade: Angiosperms
- Clade: Eudicots
- Clade: Superasterids
- Clade: Asterids
- Order: Lamiales
- Family: Acanthaceae Juss.
- Genus: *Justicia* L.

3. Species:

Global: 652

India: 46

4. Taxonomic riddles:

5. Distribution:

Global: Tropical and warm temperate zone

India: Andaman Islands, Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Goa, Gujarat, Himalaya, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Nagaland, Odisha, Punjab, Rajasthan, Sikkim, Tamil Nadu, Uttarakhand, West Bengal

6. Habit and Habitat: Erect herb or shrub, tropical to sub-tropical forests.

7. Economic Importance: Medicinal. *Justicia adhatoda* L. is extensively used in the treatment of respiratory disorders.

8. DNA content range:

Methodology:

2C

4C

9. Basic chromosome number(s): $x=9$ ¹⁵

10. Zygotic chromosome number (s): $2n=18$ ^{7, 11, 13, 14, 15, 18}, $2n=28$ ⁶, $2n=30$ ^{7, 9, 12}

$2n=34$ ^{1, 2, 6, 7, 8, 9, 10}, $2n=36$ ⁷, $2n=40$ ^{1, 2, 4}, $2n=50$ ^{1, 2, 4}, $2n=58$ ²

11. Gametic chromosome number (s): $n=9$ ^{3, 8, 10, 11, 12, 16, 18, 19, 21, 22}, $n=14$ ^{3, 20}, $n=15$ ^{7, 9, 12}

$n=17$ ^{2, 3, 4, 5, 7, 8, 9, 10}, $n=18$ ^{3, 7, 12, 19}

12. Specialized chromosomes (B chromosomes/Sex chromosomes/Polytene chromosomes/ Neoc chromosomes): B chromosomes¹⁷

13. Ploidy level: Diploid^{2, 3, 5, 6, 7, 9, 12, 16}

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

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

16. Karyograms: Majority metacentric /sub-metacentric^{9, 15} **Meiosis:** Normal^{2, 7, 9, 12}

17. Banding pattern(s):

18. Physical mapping of chromosomes:

GISH:

19. Phylogenetic relationship at Chromosomal; DNA level: Chromosomal level^{1, 2, 3, 4, 6, 7, 9, 11,}

DNA level²⁶

The gametic chromosome number is reported as **n=9** in *J. diffusa*, *J. japonica*, *J. prostrata*, *J. q*, *J. vahlii*, n=18 in *J. procumbens*, *J. japonica*, **n=14** and **n=15** in *J. diffusa*, n=17 in *J. betonica* , In *J.adhatoda* four somatic chromosome counts (**2n=34**, **2n=40**, **2n=50**, **2n=58**) was reported chromosome number was reported to be **x=9** in *J. quinqueanguaris* and *J. procumbens*.

Association of **B chromosomes** was described in *J. gendarrus* by Bir, et al., 1982¹⁶

21. Linkage map:

22. Any other information: