

Species Datasheet

Datasheet No. A-073.002.029
(family.genus.species)

DBT- Network Programme

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1. Taxon:

Species *Allium rubellum* M. Bieb.

Subspecies

Variety

Cultivar

Hybrid

Image file

2. Synonyms: *Allium albanum* Grossh., *A. leptophyllum* Wall., *A. rubellum* subsp. *syntamanthum* (K.Koch) Ogan., *A. rubellum* var. *stellatum* K.Koch, *A. syntamanthum* K.Koch, *A. tenue* K.Koch, *A. vulcanicum* Boiss., *Geboscon rubrum* Raf.

3. Systematic Position:

APG IV (2016)

- Kingdom: Plantae
- Clade: Angiosperms
- Clade: Monocots
- Order: Asparagales Link
- Family: Amaryllidaceae J. St.-Hil.
- Subfamily: Allioideae Herb.
- Genus: *Allium* L.
- Species: *A. rubellum* M. Bieb.

Bentham and Hooker (1862)

Kingdom: Plantae
Division: Phanerogamia
Class: Monocotyledones
Series: Coronarieae
Ordo: Liliaceae Juss.
Genus: *Allium* L.
Species: *A. rubellum* M. Bieb.

4. Distribution:

Global: Caucasus, India, Iran, Kazakistan, Transcaucasus, Turkmenistan, Twekey,

India: North western Himalayas and Punjab

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

6. Threat Status:

IUCN: Not been assessed yet

BSI:

7. Habit and Habitat: Herbaceous; Temperate Mixed Forest

8. Life Form: Bulbous geophyte.

9. Economic Importance: Vegetable, condiment and medicine

10. Probable Progenitor of:

11. DNA

C- value

Methodology

12. Basic chromosome number(s):

13. Zygotic chromosome number(s): $2n= 16$ ^{10,13,14,92,120,246,247,248,249,250}
 $2n= 24$ ^{13,14,55,56,251}
 $2n= 32$ ^{10,13,14,57,247,249,250}

14. Gametic chromosome number(s): $n= 16$ ⁵⁷

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

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16. Ploidy level: Diploid ¹⁰, Triploid ^{55,56,251}, Tetraploid ⁵⁷

Image file

17. Agametoploidy:

18. Nature of polyploidy (auto, segmental, allo, autoallo): Numerical hybrid ⁵⁵
Autopolyploid ^{56,57}

19. Genomic formula:

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

21. Somatic chromosomes:

Karyotype Majority metacentric to submetacentric chromosomes ^{56,57}

Chromosome size

NOR chromosome(s) 6 NOR ⁵⁶, 8 NOR ⁵⁷

Degree of asymmetry:

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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 In triploid: IV's, III's, II's and I's present. III's most common, up to 8III per PMC ⁵⁶ **In tetraploid:** High degree of multivalent formation (IV's), 8-2 IV per cell ⁵⁷

Image file

27. Chromosome distribution at anaphase I: In triploid: Irregular with bridge-fragment configurations, lagging chromosomes and micronuclei ⁵⁶

In tetraploid: Regular (16:16) in nearly half PMCs, slightly irregular (15:17) in rest ⁵⁷

28. Genetic diversity:

Chromosomal level

Image file

DNA level

29. Any other information (Apomixis; Inversion; Male sterility; Pollen grain mitosis; Pollen stainability; Translocations etc): Pollen stainability (%): In triploid: Sterile ⁵⁶; In tetraploid: 96.6 % ⁵⁷