

Species Datasheet

Datasheet No. A-073.002.005
(family.genus.species)

DBT- Network Programme

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1. Taxon:

Species *Allium ampeloprasum* L.

Subspecies

Variety

Cultivar

Hybrid

Image file

2. Synonyms: *Allium adscendens* Kunth, *A. albescens* Guss., *A. ampeloprasum* var. *babingtonii* (Borrer) Syme, *A. ampeloprasum* var. *bertolonii* (De Not.) Nyman, *A. ampeloprasum* var. *bulbiferum* Syme, *A. ampeloprasum* var. *bulgaricum* Podp., *A. ampeloprasum* var. *caudatum* Pamp., *A. ampeloprasum* subsp. *euampeloprasum* Hayek, *A. ampeloprasum* var. *gasparrinii* (Guss.) Nyman, *A. ampeloprasum* var. *gracile* Cavara, *A. ampeloprasum* subsp. *halleri* Nyman, *A. ampeloprasum* var. *holmense* Asch. & Graebn., *A. ampeloprasum* f. *holmense* (Asch. & Graebn.) Holmboe, *A. ampeloprasum* subsp. *porrum* (L.) Hayek, *A. ampeloprasum* var. *porrum* (L.) J.Gay, *A. ampeloprasum* var. *pylium* (De Not.) Asch. & Graebn., *A. ampeloprasum* subsp. *thessalum* (Boiss.) Nyman, *A. ampeloprasum* var. *wiedemannii* Regel, *A. ascendens* Ten., *A. babingtonii* Borrer, *A. bertolonii* De Not., *A. byzantinum* K.Koch, *A. duriaeanum* Regel, *A. durieuanum* Walp., *A. gasparrinii* Guss., *A. halleri* G.Don, *A. holmense* Mill. ex Kunth, *A. kurrat* Schweinf. ex K.Krause, *A. laetum* Salisb., *A. lineare* Mill., *A. porraceum* Gray, *A. porrum* L., *A. porrum* var. *ampeloprasum* (L.) Mirb., *A. porrum* subsp. *euampeloprasum* Breistr., *A. porrum* var. *kurrat* (Schweinf. ex K.Krause) Seregin, *A. pylium* De Not., *A. scopulicola* Font Quer, *A. scorodoprasum* subsp. *babingtonii* (Borrer) Nyman, *A. spectabile* De Not., *A. syriacum* Boiss., *A. thessalum* Boiss., *Porrum amethystinum* Rchb., *P. ampeloprasum* (L.) Mill., *P. commune* Rchb., *P. sativum* Mill.

3. Systematic Position:

APG IV (2016)

- Kingdom: Plantae
- Clade: Angiosperms
- Clade: Monocots
- Order: Asparagales Link
- Family: Amaryllidaceae J. St.-Hil.
- Genus: *Allium* L.
- Species: *A. ampeloprasum* L.

Bentham and Hooker (1862)

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

4. Distribution:

Global: Macaronesia, Mediterranean regions to Central Asia

India: Cultivated.

5. Indigenous/Exotic/ Endemic; Cultivated/Wild: Wild, often cultivated

6. Threat Status:

IUCN: Least Concern

BSI:

7. Habit and Habitat: Herb. Usually found in fields and former areas of cultivation, vineyards and roadsides, more rarely on rocky hillsides, cliffs and coastal beaches and in pine forests

8. Life Form: Bulbous geophyte

9. Economic Importance: Used as a gene donor in crop improvement programmes

10. Probable Progenitor of:

11. DNA

C- value	Methodology
1C (29.25pg) ²¹⁶	Feulgen cytophotometry ^{3,4,216}
2C (29.95 pg) ^{3,4}	Flow cytometry ^{81,217}
2C (58.5pg) ²¹⁶	Feulgen microdensitometry ⁹⁸
2C (33.4±0.7pg) ²¹⁷	
2C (50.7±0.7pg) ²¹⁷	
4C (119.80±1.59 pg) ^{3,4}	

4C (48.20 pg)⁷⁹

4C (100.54pg)⁸¹

4C (119.64±1.16pg)⁹⁸

4C (121.15±1.96pg)⁹⁸

4C (117pg)²¹⁶

12. Basic chromosome number(s): $x=8$ ^{5,217,226}

13. Zygotic chromosome number(s): $2n=16$ ^{226,230}

$2n=24$ ²²⁶

$2n=32$ ^{3,4,5,7,9,13,14,23, 31,45,}

^{48,49,79,81,92,95,98,120,123,139,216,218,219,220,221,222,223,224,225,226,228,229,231,233,235}

$2n=40$ ^{225,226,227,229,231}

$2n=48$ ^{10,13,14,225,226,227,229,231}

$2n=56$ ²²⁹

14. Gametic chromosome number(s): $n=16$ ^{5,48,49}

15. Specialized chromosomes (B chromosomes/Sex chromosomes/Polytene chromosomes/Neocentric chromosomes): B-chromosomes (2) ²³²

Image file

16. Ploidy level: Diploid ^{217,226,230}

Triploid ²²⁶

Tetraploid ^{3,4,5,23,48,79,81,98,216,217,219,224,225,226,228,229,231,233}

Pentaploid ^{225,226,227,229,231}

Hexaploid ^{225,226,227,229,231}

Heptaploid²²⁹

Image file

17. Agametoploidy

18. Nature of polyploidy (auto, segmental, allo, autoallo): Autotetraploid⁵, Allopolyploid⁴⁸, Autoployploid²³², Segmental autoployploid²³⁴

19. Genomic formula: AAA'A"⁴⁸

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

21. Somatic chromosomes:

Karyotype Majority metacentric chromosomes^{23,220}

Majority meta-/sub-metacentric chromosomes⁴⁸

Majority metacentric to subacrocentric chromosomes²³³

Chromosome size Medium²³

NOR chromosome(s) 4-8 NOR^{23,48}, 4 NOR²³³

Degree of asymmetry

Image file

22. Banding pattern(s): C-Banding²³³, Silver staining²³³

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 strongly desynaptic, primary association into II and IV ⁵ ; 16 II ^{48,223} , rarely IVs seen ⁴⁸

Image file

27. Chromosome distribution at anaphase I: abnormal with laggards and fragments ⁵; Normal 16:16 ⁴⁸

28. Genetic diversity:

Chromosomal level

Image file

DNA level ⁷⁵

29. Any other information (Apomixis; Inversion; Male sterility; Pollen grain mitosis; Pollen stainability; Translocations etc): Pollen stainability (%): 39% ⁵ ; >90% ⁴⁸