

# Species Datasheet

Datasheet No. A-073.002.028  
(family.genus.species)

DBT- Network Programme

-

## 1. Taxon:

Species *Allium roylei* Stearn

Subspecies

Variety

Cultivar

Hybrid

Image file

2. **Synonyms:** *Allium lilacinum* Royle ex Regel, *A. rubens* Baker

## 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. roylei* Stearn

### Bentham and Hooker (1862)

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

## 4. Distribution:

**Global:** Afghanistan, India, Pakistan

**India:** Jammu and Kashmir, Uttaranchal, West Himalaya

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

## 6. Threat Status:

**IUCN:** Not been assessed yet

**BSI:**

**7. Habit and Habitat:** Herbaceous, height~ 22-40 cm; Temperate, on moist rocky slopes, between 2000 m – 3200 m altitude

**8. Life Form:** Bulbous geophyte.

**9. Economic Importance:** Condiment

**10. Probable Progenitor of:**

**11. DNA**

<b>C- value</b>	<b>Methodology</b>
4C (70.03±0.68) <sup>98</sup>	Feulgen microdensitometry <sup>98</sup>

**12. Basic chromosome number(s):**  $x = 8$  <sup>53</sup>

**13. Zygotic chromosome number(s):**  $2n = 16$  <sup>50,51,52,53,54,98,224,245</sup>

**14. Gametic chromosome number(s):**  $n = 8$  <sup>50,52,53,54</sup>

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

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**16. Ploidy level:** Diploid <sup>50,51,52,53,54,98</sup>

Image file

**17. Agametoploidy:**

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

**19. Genomic formula:**

**20. Aberrant chromosome number(s) (aneuploidy, aneusomaty, polysomaty):** Variant plants showing 17 to 19 chromosomes and 8II+2 small chromosomes observed in EMCs <sup>52</sup>

**21. Somatic chromosomes:**

**Karyotype** Majority metacentric <sup>51</sup> or submetacentric <sup>53</sup> chromosomes showing heteromorphicity in chromosome pairs <sup>51, 53</sup> and other parameters at intercellular level <sup>53</sup>

**Chromosome size** Medium to large <sup>51</sup> to very large <sup>53</sup>

**NOR chromosome(s)** 2 NOR <sup>51,53</sup>

**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** Multivalents (III to XVI) in addition to II and I observed, frequency of association involving entire chromosome set high at diplotene <sup>50</sup>; 8 II or IV's and III's in addition to IIs present <sup>52</sup>; In addition to 8 II, multivalent (IV to XVI) present <sup>53</sup>

Image file

**27. Chromosome distribution at anaphase I:** Normal in majority <sup>50,53</sup>; irregular <sup>52</sup>

**28. Genetic diversity:**

**Chromosomal level** <sup>51</sup>

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**DNA level** <sup>74</sup>

**29. Any other information (Apomixis; Inversion; Male sterility; Pollen grain mitosis; Pollen stainability; Translocations etc):** Translocation heterozygote <sup>50,51,52,53</sup>, Pollen stainability (%): Very low <sup>50,54</sup>, 81.38% <sup>53</sup>