SHORT COMMUNICATION

# Addition to the Germplasm of *Allium roylei* Stearn

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The present communication adds to the existing germplasm of *Allium roylei* Stearn, a known source of genes for providing resistance to the common onion *A. cepa* against some pathogens. Problems encountered in its identification and some differences from the earlier collections have been recorded.

**Key Words:** ***Allium roylei*, Collections, Germplasm**

At the International symposium on *Allium* held at Gatersleben, Germany in 1991 *Allium roylei* was one of the most keenly debated species (de Vries, 1992) for reasons of its potential as the source of genes for resistance against downy mildew and leaf blight for incorporation into *A. cepa*. Its importance notwithstanding the taxonomic identity of the species is in jeopardy and the available germplasm limited (de Vries, 1992; de Vries *et al.*, 1992). The urgency to widen the germplasm of the species and establish its identity is so great that the group working on this plant had brought potted specimens of the species to elicit information, from the delegates attending the symposium. These plants have their origin in Mussoorie, India. One of us (RNG) had the opportunity to see the plant at Gatersleben. On his return to India he explored Mussoorie and other places in the Shivaliks for the species.

It was not possible to collect the material from Mussoorie partly because the actual location from where it has been collected is not known and also on account of urbanization and habitat destruction. However, some accessions of *Allium* collected from Bani and Mendhar areas of the Jammu and Kashmir Himalayas appear to resemble *Allium roylei*. In addition, an accession procured from the National Bureau of Plant Genetic Resources Regional Station, Bhowali (Uttaranchal) also matches the description of *A. roylei*. All the three accessions, which could not be studied in detail in their native habitats were transplanted to the University Botanical Garden, Jammu. After documenting their morphological characters, attempts were made to confirm their identity with the help of local flora and other literature available on the Indian Alliums (Hooker, 1892; Stearn, 1947; Nasir, 1975). This exercise confirmed the earlier views of de Vries (1992), and we also realized that on the basis of available data, it is not easy to assign relevant name to even the accessions collected by us. Despite that, based on most of the morphological features these plants could be identified only as *Allium roylei* Stearn. Morphological details of the plants collected by us are as follows:

Bulbs ovoid, 4-7 cm long and 1.2-2.5 cm broad, with a narrow but distinct rhizome, inner coats scaly, outer coats leathery and brown coloured. Scape hollow, covered with leaf bases, 45-52 cm long. Leaves 3-5, terete, 17-36 cm long and 2-3 mm broad. Inflorescence hemispherical, 4.5-5 cm across. Flowers pinkish and companulate, 5-6 mm long. Pedicels 12-17 mm long. Tepals oval. Filaments exerted, inner two toothed at the base, anthers large, stigma much above the flower and ovary trilocular with two ovules in each locule. Spathe persistent and acuminate. Flowering period July to August. Location slopes around village Dholka in Bani block (18 Km from Bani towards Bhaderwah between 1300–1400m), Mendhar and Bhowali. The reddish coloured flowers changed to pinkish white when cultured and maintained in Jammu for about one year.

The above details have been compared with those given for *Allium roylei* by Stearn (1947) and Nasir (1975).

Although, as is clear from the Table 1, there are differences in some quantitative characters, the plants collected and described by us fit the description of *A. roylei* Stearn. The Botanical Survey of India, Dehradun, have confirmed this identification.

The present collection add to the available germplasm of this important species. There is, however, a limitation for the utility of these accessions because unlike the Mussoorie accession, they are sterile on account of complex translocation heterozygosity. The purpose of this communication is to prompt botanists for exploring Western Himalayas for *A. roylei* and invite them to share any information with the authors of this communication.

The authors are thankful to National Bureau of Plant Genetic Resources, Bhowali, for providing one accession of this species, Botanical Survey of India for confirming the identification and Department of Science and Technology, Government of India, for financing the project. We are also grateful to Professor AK Koul for critically going through this manuscript and giving useful suggestions.

**Table 1. Morphological characterization of new collection of *A. roylei***

| Character | New collection | Stearn (1947) | Nasir (1975) |
|---|---|---|---|
| Bulb length (cm) | 4-7 | Not mentioned | Not mentioned |
| Bulb breadth (cm) | 1.2-2.5 | Not mentioned | Not mentioned |
| Leaf | Fistular | Terete | Linear, grooved |
| Leaf length (cm) | 17-36 | Not mentioned | Not mentioned |
| Leaf breadth (cm) | 2-3 | Not mentioned | 1 to 2 |
| Scape length (cm) | 42-52 | 20-26 | 20-40 |
| Inflorescence diameter (cm) | 4.5-5 | 2.5-2.8 | 2-3 |
| Flower length (mm) | 5 to 6 | Not mentioned | Not mentioned |
| Pedicel length (mm) | 12-17 | 6-8 | Not mentioned |
| Tepal length (mm) | 5-6 | 6 | 6-8 |
| Location | Western Himalayas | Western Himalayas | Western Himalayas |

## References

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