

Chondropetalum elephantinum - New Crop Summary & Recommendations

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New Crop- *Chondropetalum elephantinum*

Taxonomy.

- Scientific Name (genus, species, subspecies): *Chondropetalum elephantinum*
- (also known as *Elegia elephantinum*)
- Common Name(s): Large Cape Rush
- Family: Restionaceae
 - 55 genera
 - 490 species

Geographic Distribution.

- Continent(s): Africa (other species found in Australia and Asia)
- Country(-ies): South Africa (other species found in Malaysia, and New Zealand)
- State(s)/Province(s)/Region(s): Western Cape, Grahamstown, Clanwilliam
- Latitudinal Range(s): Southern Hemisphere
- General Climactic Conditions: Well drained soil, low fertility and sun.
- Tendency to naturalize or become invasive: Unknown

Native Habitat.

- Habitat (climactic factors): Usually found in marshy/swampy areas as well as mountainous areas.
- Plant Community: Found in the fynbos of South Africa. Fynbos is the type of vegetation in the Capes of South Africa where fires occur periodically, 5-40 years apart. The plants native to the fynbos therefore need smoke/fire to initiate germination.

Taxonomic Description.

- Overall Plant Habit/Description: Erect, dense clump with dark green unbranched stems. Grows to 3-5 ft in height and 4-6 ft wide.
- Root System Type: Underground Rhizomes
- Leaves: Brown papery bracts that fall in the summer leaving brown rings around the internodes
- Flower: Small brown flowers at the tips of the stem.
- Season of Bloom: Summer-Fall

- Use(s) by indigenous people: Historically used as a thatching material and cut foliage for floral design.
- Other uses: Restios are moving into landscapes, potted plants, and patio plants
- Additional Notes:

Name and Description of Varieties/Cultivars on the Market.

- No known new cultivars of *Chondropetalum elephantinum*, but there are related cultivars of *C. tectorum* (small cape rush). *Chondropetalum tectorum* is shorter than *C. elephantinum* and the cultivar 'Fishoek' is smaller and more compact than *C. tectorum*.

Propagation Method(s).

- Vegetative vs. Seed: Seed or division of the root system
- If seed, no. of seeds/flower: multiple (exact number unknown)
- If seed, seed dormancy?: Inhibitory mechanism in the embryo of the seed.
- If seed, germination temperatures/duration: very high temperature (120°C) exposure may increase germination percentages. Day/Night temperature- 25°C/10°C

Product Specifications.

- Crop Ideotype (the ideal phenotype that a marketable cultivar will possess): compact and rich green stems.

Market Niche—Identification & Justification.

- Target sales date(s): August- September
- Potential holiday(s) for this product: -
- Programmability, i.e. could this be forced year-round: Yes
- Crops with which this will compete in the market: Other landscaping grasses, cut foliage and plants for containers.
- Will this ever be a major crop (why or why not): No, because germination percentages are too low (from my experiment, germination was 10%) for this plant to be produced commercially.
- What will be the initial crop limitations/problems: Germination percentages!
- Is this product already identifiable to the growers & consumers: Possibly by some. Consumers and growers may recognize other genera/species from the family Restionaceae that are more commonly used in landscapes.
- How soon could this product be available: As soon as the germination potential is raised and other information about the production of this plant is known.

Anticipated Cultural Requirements.

- Winter Hardiness (USDA Zones): 8-10
- Heat/Drought Tolerance: Yes
- Temperature (day/night): 25°C/10°C
- Light quantity, quality, duration; photoperiod response: Full sun-part shade
- Nutrition: Low fertility is needed for this species
- Soil: Loamy or Sandy. Wide range of pH (acidic, alkaline, neutral)
- Plant growth regulators: Unknown
- Container size (through entire production cycle): 4" pots
- Disease Resistance/Susceptibility: Susceptible to glasshouse red spider mite and whitefly.
- Fungicides, Insecticides: Unknown

Complete Production Schedule (from seed or cuttings).

- Estimated no. of weeks from planting to flower bud initiation, flower development, & shipping:
 - 3 weeks until germination- sow an even layer of seed, covering growing media.
 - 6-12 weeks until transplant into 6packs- plants are 30mm tall.
 - Growing on until planting outdoors- 4 weeks
 - Plants flower a year after sowing.
 - Total crop time for transplanting outdoors- 13-19 weeks
 - Total crop time until flowering- 52 weeks
- Estimated time, type, and quantity of special treatment applications: Soak seeds in an instant smoke solution for 24 hours before sowing in plug trays.
- Target sales date: Mother's Day sales (mid-May)

Needs Assessment for Genetic Improvement.

- Based on the production schedule you have assembled, assess the need for crop improvement using standard breeding methodology or genetic transformation: More experimentation to overcome seed dormancies and to improve germination rates. Also, more research on seed viability. Since approximately only half of restio seeds are viable, commercial production of this plant is difficult. A reliable way to test seed viability would improve its chance for commercial production.

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