Dianella tasmanica: Some Success

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Dianella or flax lilies, so called because of the fibrous nature of their handsome long strap like leaves which were used by Aborigines for basket weaving. Formally in the Liliaceae, a review of this family now has the genus placed in Phormiaceae.

Members of the *Dianella* genus are perennial monocots forming tough rhizomatous clumps with tufts of long leaves that are flat and clasping at the base. Leaf length, width, and colour varies with the species and particular habitat. All have blue flowers and wonderful blue to purple berries. The genus extends from south east Africa through south east Asia to Hawaii and Australasia. Australia has 15 species, 11 of which are endemic (The Flora of Australia, 1987).

Tasmania has four species represented, all extending to south east mainland Australia. *Dianella tasmanica* has leaves 1.5 to 3.0 cm wide and 20 to 90 cm in length. Young leaves emerge upright arching gracefully downwards as they mature. This species is easily distinguished by a rough saw edge on the leaf margin and midrib. The flowers are violet to lavender with pale yellow anthers and orange filaments. The berries mature to a deep purple colour. It grows mainly at high altitude and extends to the Australian Alps and the New England Plateau.

Two other species are similar in leaf and size to *Dianella tasmanica*:

Dianella longifolia is distinguished by the purplish colour of the leaf bases and smooth margins and pale blue flowers.

Dianella caerulea is green leaved with smooth margins and bright blue flowers. It spreads vigorously by long rhizomes and can form extensive colonies. This species extends north to Queensland.

These three species grow in open forest particularly on moist rocky hillside in full sun or part shade from sea level to mountain foothills. They are very decorative in large containers indoors or inground as vertical tufting landscape plants with gracefully arching glossy leaves. Although not strictly water plants they look great around water features. All tolerate a wide range of soil types and are frost hardy to between -5 and -10C.

Dianella revoluta is readily identified by its smooth narrow leaves 4 to 10 mm and 15 to 80 cm long with revolute margins. It offsets freely but does not produce extensive rhizomes. Flowers are dark blue to violet the berries are smaller than other species and dark blue. Two forms are recognised in Tasmania; the type *D. revoluta* var. *revoluta* has its flower panicle above the foliage, and; *D. revoluta* var. *brevicaulis* has short wiry flower stems among the leaves and grows in coastal and lakeside habitats.

All four species are long lived and able to withstand considerable dry periods when they cease growth until rains return. *Dianella* can be propagated by seed, division, or tissue culture.

PROPAGATION FROM SEED

We grow *D. tasmanica* from seed as this produces a more even batch of plants which are earlier clumping than those grown by division of offsets. Seed is collected in March-April by picking the ripe berries which contain 3 to 10 seeds (160 seeds per

gram). Mention is made that birds eat the berries but I have seen no evidence of this. The blue berries will drop at the slightest touch of the stem, I would think the berry falls into and around the plant clump where it becomes alternately wet then dry and slowly decomposes releasing the seed for dispersal by heavy rain or ants.

I have had excellent germination results by simulating this slow decomposition and release of the seed. The berries are gently squashed then steeped in water and allowed to soak 7 days then flushed with fresh water drained and dried for 7 days. This process is repeated 3 times. After this time you have a soggy brown mess flecked with shiny black seeds. The seed can be separated from the debris by flushing and gently squashing the wet material then draining and placing onto newspaper in a warm place to dry. Once dry the seed separates easily from the berry residue.

If not sown immediately the dry seed should be refrigerated. We sow in September and place the trays outside under shade and daily overhead irrigation. Temperature would vary between 3 to 18°C. When the first leaves appear in 6 to 8 weeks the trays are moved into an unheated plastic house to be grown on. These are ready for pricking out in late December, 3 months after sowing. The results are excellent, we have achieved 700 seedlings from one seed tray in 3 months.

Seedlings are then ready for potting in March, 6 months after sowing; by this time leaves will be 12 cm high and offshoots will be evident. A 14-cm pot plant takes 12 months to grow and will have three or more offshoots. A 20-cm pot plant takes 18 months to grow and will have 12 to 20 offshoots.

PROPAGATION BY DIVISION

Dianella revoluta var. *brevicaulis* can also be grown from seed, but the flower stems are in amongst the leaves and the small berries are easily lost while trying to collect them. Fortunately the coastal form we grow offsets very freely, 12 to 15 offsets in a 10-cm pot 12 months after dividing is common. Pots are divided autumn to late winter, a clump of 3 to 4 offsets potted into a 10-cm pot — the smaller plants are easier to handle than the more mature clumps from 20-cm pots or inground stock.

PROPAGATION BY TISSUE CULTURE

Tissue culture allows selection of better plant forms and types that set berries more frequently. Flower and berry colour can also be selected for. Long-term commercial viability would be dependant on volume demanded by the market.

Students from the Plant Science - Cell Biology Group at the University of Tasmania have been working on various Tasmanian species from Liliaceae and Iridaceae including *Dianella*. Diane Sward has presented papers on her work. She has successfully cultured and multiplied plants and has the first batch of transplants out of culture (Sward, pers. comm.).

LITERATURE CITED

Bureau of Flora and Fauna, Canberra. 1987. The flora of Australia. Bureau of Flora and Fauna, Canberra. Austral. Govt. Pub. Serv. Vol. 45.