A Yellow, Single-stem *Leucadendron*, 'Rosette'

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The Agricultural Research Council (ARC) of South Africa has released 'Rosette' (*Leucadendron laurum* L. x *L. elimense* ssp. *salterii* L.). Proteaceae cultivars have been developed by the ARC Fynbos Unit since the late 1970s (Brits, 1985; Brits and van Niekerk, 1985). The cultivar Rosette produces an above-average yield of long, straight stems, suitable as single-stem cut flowers. The name 'Rosette' has been registered with the International Registration Authority: Protea (The Directorate of Plant and Quality Control, Private Bag X5015, Stellenbosch, 7599 South Africa). Plant breeder's rights have also been awarded to the cultivar Rosette (ZA 971647) in South Africa.

Origin

'Rosette' originated from seedlings produced by hand pollination between an *L. laurum* (T81 07 01 *L. laurum*, large, whitish-yellow, tulip-shaped inflorescence,

vigorous, flowering June to July) clone and an *L. elimense* ssp. *salterii* (T81 07 19 *L. elimense* ssp. *salterii* large, lime to medium-yellow inflorescence, slight lemon scent, flowering July to August) clone grown on the Tygerhoek Experimental Farm, Riviersonderend, South Africa. Of the 393 seeds that developed from the cross, one, T930502, was selected in the ARC Fynbos Unit Fynbos Genebank in 1993.

Description

'Rosette' is a perennial shrub, growing to well over 2.5 m when left unpruned. The bush has an upright growth habit. It does not develop a lignotuber (Littlejohn, 1998) and the aboveground stems arise from a single trunk 10 to 30 cm above ground level (Fig. 1). The elliptical leaves are clear green, 7.5 mm long, and 2 mm wide. The stem leaves are carried at a 45° angle to the stem and immature leaves are covered with fine hairs.

The involucral leaves, which represent the

'petals' in *Leucadendron* flower heads, change from green to deep-yellow during the flowering season in July and August (southern hemisphere). The female cone in the center of the involucral leaves is green-yellow during flowering, but changes to red-brown after flowering (Fig. 2). The cone is fully exposed within a cup- to saucer-shaped ring of involucral leaves, 120 to 160 mm in diameter. The flower heads are borne at a 90° angle to the flower stem.

The stems can be harvested as a green product during April to June, as a yellow flower head from July to August, and as a green product bearing a central red-brown cone during September (Fig. 2). During the summer months, the shoots are too soft for harvesting.

Culture

'Rosette' is vegetatively propagated by cuttings. In excess of 90% of the cuttings root under the correct conditions. The cut flower yields obtained in a totally randomized trial at Elsenburg Experimental Farm, on which the ARC Fynbos Genebank is situated, are given in Table 1. 'Safari Sunset' is the most widely grown *Leucadendron* cultivar, originally selected in New Zealand (Littlejohn, 1998; Silber et al., 1998). 'Rosette' gave cut flower yields at Elsenburg equivalent to those obtained from 'Safari Sunset'. Elsenburg is situated 33°50'80"S, 18°50'10"E, and 200 m above sea level. The trial was rainfed during the winter rainy season and watered with 15–20 L per

Fig. 1. Mature 5-year-old shrubs of 'Rosette' during the flowering period, showing the upright growth habit and long, straight stems.

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Fig. 2. Flower heads of 'Rosette' 6 weeks after pollination, showing the mature red-brown cone within the ring of green involucral leaves.

Table 1. Cut flower yield^a per plant of *Leucadendron* cultivars Rosette and Safari Sunset for the first 3 years after establishment. The harvestable stem lengths were classified in production lengths, and stems less than 40 cm in length were ignored. The planting date was Oct. 1994.

Cultivar	Year of harvest	Stem length categories (cm)					Total no. stems/plant
		40–49	50–59	60–69	70–79	80–89	
Rosette	1995	9.5	0.8	0.5	0.5	0	11.3 ± 2.3
	1996	5.8	9.5	2.8	1.5	4	23.5 ± 1.7
	1997	3.0	8.8	5.0	9.2	20	44.5 ± 1.1
Safari Sunset	1995	0.0	2.5	1.0	0.5	0	4.0 ± 2.5
	1996	7.0	6.0	8.6	8.0	0	29.6 ± 2.1
	1997	9.5	5.8	7.5	4.5	10	37.0 ± 1.6

^aThe harvestable stems cut from four randomly chosen plants within randomized blocks of 10 plants were sorted and counted. The yield per four plants was recorded and the average determined to give a per-plant production

plant per week during the dry summer months. Ammonium sulfate (50 kg·ha⁻¹) was applied three times per year during the spring seasons. The plants were pruned by harvesting the flowering stems. No other pruning was necessary. 'Rosette' plants normally live for 10 to 12 years, but are not frost hardy. Based on conditions observed in South Africa, they would only be suitable for cultivation in USDA zone 10 (U.S. Dept. of Agriculture, 1990). 'Rosette' grows best in full sun on well-

drained soils of pH 4.5 to 5.5. High phosphate levels (>20 mg·kg⁻¹) are not tolerated, and nitrogen in the ammonium form must be used for fertilization. Due to the upright growth habit, damage to plants can occur from storm winds.

Availability

'Rosette' is vegetatively propagated from stem cuttings. Plants do not breed true from

seeds. Plant material is available for sale from ARC Fynbos Nursery, Private Bag X1, Elsenburg, 7607 South Africa. The cultivar is protected by plant breeder's rights in South Africa. Inquiries concerning availability for research purposes, or for evaluation in other countries, should be addressed to The ARC Fynbos Genebank, at the above address.

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