Product: Safari Sunset
Botanical name: Leucadendron ‘Safari Sunset’
(Leucadendron salignum red form × L. laureolum female form)
Cultivar: ‘Safari Sunset’
Worldwide, ‘Safari Sunset’ is probably the most important *Leucadendron* grown for the cut-flower market.

The flower heads develop at the tips of very long, upright stems clothed with oblong, dark green leaves. Each is large and goblet shaped (30–50 mm wide; up to 10 cm across when fully opened) and features glowing wine-red bracts spirally arranged around the small central flower. As the flower matures it develops an attractive, large woody cone, which becomes a prominent feature in late-season flowers. ‘Safari Sunset’ has a long vase life and the flower heads do not bruise easily, as seen in some other members of the protea family.

‘Safari Sunset’ is an important crop for Australian growers, who target both domestic and export markets. It is almost an all-year-round product, saleable at different stages of maturity.

At the earliest stage, the bracts are clear red and firm, and tightly enclose the small central flower, giving the flower head a slender tulip shape. As the flower head matures, it develops a deep wine red to purplish colour (in winter), becoming more goblet shaped, and finally the bracts reflex to reveal a prominent woody central cone. By early spring the bracts have become cream to yellow in the centre and bronze to red on the outside. Late-season product with the cone at its final size is also a popular product, but not if there is a lot of bypass growth.

Cold weather tends to improve the intensity of colour in the bracts, making ‘Safari Sunset’ a major winter crop in some areas.

Like most proteas, *Leucadendron* originates in South Africa and bears separate male and female flowers on separate plants. ‘Safari Sunset’, a female selection, was bred in New Zealand and is vegetatively propagated.

Some export markets will not accept product with mature cones, as the cones are considered to be a fruit that might contain seeds or insects. Check with your exporter or with AQIS regarding the import requirements of your target market.

‘Safari Sunset’ is fast growing and a very high-yielding plant under intensive cultivation. Plants will produce marketable yields within 2 years of planting. Adequate irrigation is important for good stem length and quality. Plants require a well drained, acidic soil with a pH not exceeding 5. Like proteas, *Leucadendron* is susceptible to *Phytophthora* root rot.

Once established, ‘Safari Sunset’ is drought resistant and will tolerate light frost. Hard pruning is needed after flowering to promote long straight stems for the next crop. Removing the first flower head early in the season forces the growth of more flowering stems to create a ‘multi-head’, which is accepted by some markets.

Preharvest pest management is important for minimising insect chewing damage to the bracts.

Avoid storing or marketing this product for too long – do not market product with dull or dried-out bracts or leaves, or brown tips on the bracts or leaves.

Avoid selling when the young bracts are too soft.
STAGES OF OPENING

The stages shown apply to the product at market entry. Pay attention to the weather, time of year, and mode and duration of transport, because the flowers will continue to open during transport. You must consult with your target market to ensure that the flowers arrive at the desired stage.

**Stage 1**
Immature stage: bracts soft and still developing – unacceptable to markets

**Stage 2**
Prime stage (especially for export): fully coloured bracts fully enclosing small central flower

COMMON DEFECTS

Common defects to be avoided at market entry:
- Stem and leaf weevils
- Insect damage to flowers or foliage
- Bypass shoots
- Sun and frost burn on flowers and leaves
- Bent stems
- Poorly constructed or tied bunches
- Old product

- Frost damage: short flowering side shoots and reduced leaf size – discard
- Bypass shoots: this is a problem with late-harvested product – trim when small
- Bent stem – discard
- Bracts burnt due to cold damage (poor storage?) – do not market
- Sun and frost damage – discard
- Severe insect chewing: bracts almost completely missing – discard
Dieback at tips of bracts and insect damage – discard; avoid by managing insect pests before harvest.

Stage 3
Later stage: bracts starting to reflex from developing central cone.

Stage 4
Winter stage: bracts reflexing from developing central cone.

Stage 5
Late season (early spring) stage: bracts fully open and paler; prominent central woody cone clearly visible – acceptable in some markets.

Old product: badly tied bunch – do not market.

Old product: damaged, dried leaves – do not market.

Dieback at tips of bracts and insect damage – discard; avoid by managing insect pests before harvest.

Bracts with black tips – do not market.

Poorly trimmed stem ends: bad harvest practice – trim neatly before marketing.

Typical bunches look like this:

Multi-headed stems: a different product – acceptable in some markets.
### Flowers

**Appearance**
- Flower head fully formed and at final size.
- Bracts fully enclosing the central flower cone (stage 2) or more open to reveal the developing woody cone (stages 3–4).
- Flower head follows in a straight line from the stem (and is not offset from the stem at >15°).
- Flower head not hidden by leaves.
- No bypass shoots or secondary blooms.

**When to harvest**
- Bracts firm (leathery at tips and not soft) and fully coloured. Colour corresponding to time of year harvested (stages 2–5).
- Flower head at final size.
- Avoid harvesting when flowers are wet.

**Damage**
- No damaged, dull, brown, wilted or chewed bracts.
- No asymmetrical, deformed or damaged blooms.

**Contamination**
- Ensure the flowers are free of grit and soil, weed seeds or weeds, and signs of insects or spiders, such as webbing.

**Pests and diseases**
- No apparent pest or disease damage.
- Discard any poor-quality product with insects or fungal infections.

### Stems

**Appearance**
- Rigid and strong enough to support blooms.
- Bend <15°.
- Free of disfiguring trim marks or other blemishes.
- Neatly cut end.

**Length**
- According to market demand, typically as recommended in 'Grading and bunching' below.

**Recommended handling at harvest**
- Minimise drying out and exposure to heat – pick when it is cool, preferably straight into buckets of clean water or a reputable commercial postharvest solution, and hold in the shade. Move cut stems promptly to a cool, shaded packing area. Cool quickly to remove field heat.

**Grading and bunching**

**Grading**
- Grade quickly to minimise time stems are out of water.
- Reject any contaminated stems.
- Sort stems according to flower maturity, length and thickness. Flower head proportional to stem length: market smaller heads on shorter stems.

**Bunching**
- Flowers are generally marketed in bunches. The number of stems per bunch varies, and is determined by their length and by market and buyer requirements. Generally a marketable bunch of 'Safari Sunset' will contain 10 stems. Multi-headed stems are usually bunched in 5s.
- Presentation is important. Stay consistent for the grade and make all bunches the same.
- Use 2 ties: 1 near base (3 cm from bottom) and again loosely 2/3 of the way up the bunch. Two ties make bunches easier to pack.
- Especially for export, stems should be approximately the same diameter within a bunch, with the ends aligned.

**Stem length**
- Stem length (cm)
  - 100
  - 90
  - 80
  - 70
  - 60
  - 50
  - 40

**Sleeves**
- This product is not usually sleeved.

### Leaves

**Appearance**
- Fresh; mid green; not dull or wilted.
- Minimum discoloration (<3% by area and affecting <10% of leaves).

**At harvest**
- Do not harvest or store when foliage is wet.
- Strip leaves from lower 12–15 cm or <1/3 of the stem, being careful not to damage the stem – cut with sharp secateurs if necessary.

**Damage**
- Minimum evidence of pests, diseases or other blemishes such as mechanical damage. Leaves entire (no insect feeding damage).

**Contamination**
- No scale insects. No spider webs.
- Free of visible chemical residues.
**HOLDING AND STORAGE**

**Cooling**

Effective cooling soon after harvest is important to retaining quality and maximising vase life. There are two options:
- Cool, process, cool – for example, remove field heat by cooling flowers immediately on entry into shed to 10 °C in buckets of solution, process flowers (bunch, grade), and then cool to 2–4 °C by either forced-air cooling (if boxed) or holding overnight in a cool room.
- Process within 1 hour of cutting, and then cool to 2–4 °C by either forced-air cooling for 20–30 minutes (if boxed) or holding overnight in a cool room.

Reached-room cooling overnight in a cool room is ideal for large volumes of product.

**Temperature and humidity**

Hold in a high-humidity cool room (95%) at 2–4 °C. Another way of achieving high humidity is to cover the flowers with plastic sleeves or plastic sheeting, as long as there is no condensation on the leaves, which can lead to decay in storage.

**Pulsing**

It is unclear whether pulsing in sugar before shipping benefits *Leucadendron*.

**Postharvest solutions**

Holding solution: Hold in clean potable water with an added registered biocide.

For longer storage seek professional advice, and test in the market before committing product.

Trials have shown that longer storage is possible when stems have been dipped in registered fungicide and stored dry and well wrapped in boxes at 1 °C.

**Longer-term storage**

Use boxes with holes to allow forced-air cooling.

Minimise water loss. For long-distance shipping consider lining boxes with a layer of paper.

Cool flowers to 2–4 °C before transport.

**PACKAGING**

Pack only dry, cold flowers.

Especially for export, stems in each box should be approximately the same diameter and length, and flower head size should be consistent.

Pack bunches with flower heads at each end of the box and stems in the middle to avoid damaging blooms.

Pack stems firmly in boxes or use export hooks or stem breaks so the product will not move and be damaged. Use shredded paper to protect flower heads. Avoid packing too many stems per box.

Use boxes with holes to allow forced-air cooling.

Minimise water loss. For long-distance shipping consider lining boxes with a layer of paper.

Cool flowers to 2–4 °C before transport.

**LABELLING AND DOCUMENTATION**

Label boxes and buckets as recommended in *Postharvest Manual* or as required by customer.

Ensure box contents are exactly the same as specified in the documentation and on the end of the box.

**TRANSPORT**

Refrigerated vehicle at 2–4 °C for long-distance transport.

**COMMON POSTHARVEST PROBLEMS**

Refer to *Postharvest Manual* for general advice.

**Fungal decay in storage due to botrytis (grey mould)**

Use preharvest insecticide sprays to reduce the pest population at harvest.

Dip flowers that are to be packaged and held for any significant length of time (up to 5 days) in a registered fungicide and insecticide solution with added wetting agent for not less than 1 minute, then dry naturally for 2 hours to ensure thorough disinfection.

OR: Fumigate flowers before dispatch to kill insects.

**Insects (for export)**

‘Safari Sunset’ is not sensitive to ethylene.

**Ethylene sensitivity**

**Messages for importers and wholesalers**

- Recut stems and place into fresh water containing a reputable commercial postharvest solution, a registered biocide or cut-flower food. Cool product before marketing or sending on and keep it cool.
- Maintain good hygiene and keep containers clean.

**Messages for retailers**

- Recut stems and place into fresh water containing cut-flower food or a registered biocide.
- Use clean buckets and containers for displays.
- Do not display flowers in areas that are exposed to full sun, draughts, high temperatures or vegetable exhausts, and preferably do not display near fruit and vegetables. Use refrigerated displays if possible.
- Tell the customer how to care for the flowers and emphasise the need for cut-flower food in solutions. Give the customer a sachet of cut-flower food to take home.

**Messages for consumers**

- Keep vase filled with the correct solution of cut-flower food. Check daily, as flowers can use a lot of water. If cut-flower food is not used, change the water at least every second day. Always use clean vases and clean water.
- Do not display in areas that are exposed to full sun, draughts or high temperatures. Keep as cool as possible without freezing.
- Discard other flower types in the same vase when they reach the end of their vase life.