Product: Bird’s Nest Banksia, Baxter’s Banksia
Botanical name: Banksia baxteri
**Banksia baxteri** is a major Banksia species grown for the cut-flower market. Its squat, domed, greenish-yellow flower heads are held on the ends of strong woody stems. Each brush-like flower head is composed of hundreds of tiny individual flowers or florets. Each floret is fully open when the pin-like style is sticking out. The first florets to open are those at the base of the flower head. The number of open florets on the head determines the correct picking stage for maximum vase life.

There are several selections of *B. baxteri*. Those best suited to flower production have compact, tight flower heads on thin, straight stems (rather than more open flower heads on very thick, woody stems).

The foliage is dramatic and a major feature – stiff green leaves with a deeply serrated (zigzag) edge.

*Banksia baxteri* flower heads dry well and are also sold dried and dyed. The woody fruit (or cone) is also marketed.

The flower head is easily damaged, so careful handling and packing are important. Avoid picking and packing banksias when the flowers are wet as they can develop black streaks.

This Banksia originates from the south coast of WA. It is grown commercially mainly in WA and SA. Plants in cultivation often flower at different times from plants growing in the wild, and come into flower at different times in different regions, thereby extending the season of availability. Banksias are also grown commercially overseas, for example in the US states of California and Hawaii, as well as Israel and South Africa. *Banksia baxteri* grows best in well drained, sandy soils and appears to tolerate mild frosts. It responds well to pruning, which is best done soon after the flowering season to maximise the stem length for the next crop of flowers. Research has shown that most flowers are produced on shoots that are 2 years old and of a minimum diameter. So, in pruning, keep shoots with a stem diameter of 11 mm or more, and leave 4–5 healthy leaves below the cut, from which new shoots can grow to produce future flowers. Remove any thin and weak stems, which are less likely to flower.

Like other banksias, *B. baxteri* is susceptible to *Phytophthora* root rot. The flower heads attract insects and need to be disinfested before harvest.

Banksias for the fresh market must be placed in water quickly after harvest and cooled, as they dry out quickly and lose freshness and quality. Flowers do not open further after harvest. Leaves dry out quickly and can’t easily be rehydrated.

**Flowering season:**
November to March. The cone is available in November–December.

**Typical vase life:**
14 days

The woody fruit (or cone) is another product derived from *Banksia baxteri*. 
Product: Bird’s Nest Banksia, Baxter’s Banksia

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.

Note:
Stage 1 flower head enlarged to show detail.
Stages 2–5 – some leaves have been removed to reveal entire flower head.

Stage 1
Immature stage, unacceptable to markets: flower head soft and has not reached full size and shape

Stage 2
Early harvest stage, suitable for export and some domestic markets: top of flower head firm and round and <20% of florets open

COMMON DEFECTS

Common defects to avoid at market entry
- Deformed or asymmetrical flower heads
- Damaged flower heads
- Blackened, dried or physically damaged leaves
- Dried-out, dull or faded flower heads
- Immature flower heads
- Bypass shoots

Head offset from the vertical – discard
Very immature flower, squashed – do not market
Stage 3
Later stage, suitable for domestic markets: 30% of florets open

Stage 4
Late stage, acceptable for only some markets: 50%–60% of florets open

Stage 5
Overmature stage, unacceptable to many markets: >75% of florets open and flower head brownish; bypass shoots emerging

Bypass shoots – remove before marketing
Uneven flower development – discard
Borer – discard; avoid by applying appropriate preharvest insecticide treatments
Poor-quality foliage – discard
### FLOWERS

**Appearance**
Flowers clear greenish yellow, not dull or greyish. Flower head fully formed and at final size, symmetrical. Size (diameter) and length must be proportional to stem length. Flower head follows in a straight line from the stem (and is not offset from the stem at more than 30°).

**When to harvest**
Flower head fully formed, and top is firm and round. Flower green and luminescent. No individual florets open (export), or <20% of individual florets at the base of the flower head open (domestic market). Avoid harvesting when flower is wet.

**Damage**
No asymmetrical, deformed or damaged blooms. No bypass shoots at the base of the flower head.

**Contamination**
Product free of grit and soil, weeds or weed seeds, living or dead insects, and signs of insects or spiders, such as webbing.

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

### LEAVES

**Appearance**
Fresh and crisp, not dull or wilted. Minimum discoloration (<2% by area and affecting <10% of leaves); no yellowing.

**At harvest**
Remove leaves from the lower 15–20 cm of the stem, or as buyer requests.

**Damage**
Minimum evidence of pests, disease or other blemishes, such as mechanical damage. Leaves entire (no insect feeding damage). No spiders or spider webs. Free of visible chemical residues.

### STEMS

**Appearance**
Rigid and strong enough to support blooms, without being too heavy and bulky. Bend <30°. Free of disfiguring trim marks or other blemishes. Neatly cut end.

**Length**
According to market demand.

### RECOMMENDED HANDLING AT HARVEST
Minimise drying out and exposure to heat – pick when it is cool, preferably straight into buckets of clean potable water, and hold in the shade. Move cut stems promptly to a cool, shaded packing area.

### GRADING AND BUNCHING

**Grading**
Reject any contaminated stems. Sort stems according to maturity, length and thickness: flower head proportional to stem length (typically 20%–25% of the total stem length for larger blooms). Market smaller heads on shorter stems.

**Bunching**
This *Banksia* is usually sold as single stems.

**Stem length**

<table>
<thead>
<tr>
<th>Stem length (cm)</th>
<th>100</th>
<th>90</th>
<th>80</th>
<th>70</th>
<th>60</th>
<th>50</th>
<th>40</th>
</tr>
</thead>
</table>

### 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-aid cooling (if boxed) or holding overnight in a cool room in postharvest solution.
- Process within 1 hour of cutting, and then cool to 2–4 °C by either forced-aid cooling for 20–30 minutes (if boxed) or holding overnight in a cool room in postharvest solution (if in buckets).

Forced-air cooling of packed flowers is ideal for large volumes of product.
## HOLDING AND STORAGE cont’d

<table>
<thead>
<tr>
<th>Temperature and humidity</th>
<th>Hold in a high-humidity cool room (95%) at 2–4 °C for up to 4 days. Another way of achieving high humidity is to cover the flowers with plastic sleeves or plastic sheeting.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Postharvest solutions</td>
<td><strong>Postharvest solution</strong>: Hold in clean potable water with an added registered biocide. To date, banksias have not responded to floral preservatives. Sucrose pulsing does not improve quality or vase life (sucrose concentrations above 2% are detrimental). To increase water uptake and improve hydration it may be worth holding the stems in deep water (e.g. 20 cm) or in special hydrating solutions (see Postharvest Manual* for details). Holding solution: Same as postharvest solution.</td>
</tr>
<tr>
<td>Longer-term storage</td>
<td>Flowers have been stored dry and well wrapped in boxes at 0–2 °C for up to 2 weeks without significant loss of vase life. For longer storage seek professional advice and test in the market before committing product.</td>
</tr>
</tbody>
</table>

## TRANSPORT

Refrigerated vehicle at 2–4 °C.

## COMMON POSTHARVEST PROBLEMS

Refer to Postharvest Manual* for general advice.

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

Use preharvest fungicide sprays during wet weather to reduce the risk of botrytis disease. Use preharvest insecticide sprays to reduce the pest population at harvest. Fumigate flowers with a registered product before dispatch to kill insects. Check flower heads for insects before packing (insects such as bees may be trapped in the flower head). Avoid postharvest dips if any florets are open.

### Insects (for export)

Fumigate flowers with a registered product before dispatch to kill insects. Check flower heads for insects before packing (insects such as bees may be trapped in the flower head). Avoid postharvest dips if any florets are open.

### Ethylene sensitivity

**Banksia baxteri** does not appear to be susceptible to ethylene.

### Messages for importers and wholesalers

- **Recut stems and place into fresh water containing a registered biocide.**
- **To increase water uptake and improve hydration it may be worth holding the stems in deep water (e.g. 20 cm) or in special hydrating solutions (see Postharvest Manual* for details).**
- **Cool product before marketing or sending on and keep it cool (2–4 °C).**
- **Maintain good hygiene and keep containers clean.**

### Messages for retailers

- **Recut stems and place into fresh water containing a registered biocide.**
- **Do not mist the flowers.**
- **Use clean buckets and containers for displays.**
- **Do not display flowers in areas that are exposed to full sun, draughts, high temperatures or vehicle 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 fresh clean water and clean vases.**

### Messages for consumers

- **Keep vase filled with the fresh clean water. Check daily, as flowers can use a lot of water. 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.**

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**PACKAGING**

Pack only dry, cold flowers. Banksias are heavy, so ensure the box used is strong enough. Handle carefully to avoid damage, particularly if florets are open. Pack with flower heads at each end of the box and stems in the middle to avoid damaging blooms. Avoid packing too many stems per box. Especially for export, stems in each box should be approximately the same diameter and length, and flower head size should be consistent. If shipping bunches, pack them firmly so the product will not move and be damaged. Use boxes with holes to allow forced-air cooling and to facilitate fumigation. If the flowers will need forced-air cooling or fumigation, line only the long sides, tops and bases of the boxes, not the ends. Minimise water loss, especially for long-distance shipping, by lining boxes with plastic. 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.