An adaptation of Reyneke’s key to the genus *Eucomis*

Neil R. Crouch
Ethnobotany Unit, South African National Biodiversity Institute, P.O. Box 52099, Berea Road, 4007 South Africa / School of Chemistry, University of KwaZulu-Natal, Durban, 4041, South Africa. E-mail: n.crouch@sanbi.org.za

Reyneke’s work
Subsequent to the awarding of his M.Sc. thesis on *Eucomis* in 1972, William Reyneke continued to write up some—but not all—of his research findings. He first clarified the identity of the much confused *E. regia* (Reyneke 1974) before describing the Drakensberg endemic *E. schijffii* (Reyneke 1976) and later resolved the greater part of the *Eucomis autumnalis* complex (Reyneke 1980). Reyneke’s genus treatment has generally been accepted, including his recognition of the gigantic *E. pole-evansii* as a mere subspecies of *E. pallidiflora*. In this regard it took more than 20 years before this new combination was ultimately made!
Subsequent to Reyneke’s thesis appearing on a select few shelves, neither a complete revision nor a synopsis of *Eucomis* has appeared in print – not even a key to this genus has become readily available. To breach the gap James Compton in 1990 published an overview of the genus which took consideration of Reyneke’s work, and was written largely from a horticultural perspective – it appropriately appeared in the *Plantsman*. His contribution provided short English descriptions of each of the species and subspecies, with notes on how best to grow them in north temperate climes. For such a horticulturally important genus the continued lack of an accessible key has proven frustrating to both fieldworkers and growers. The current note is intended to remedy this, and to provide photographs and maps which complement both the key, and Compton’s earlier useful account. Maps have been drawn based both on Reyneke (1972), and specimens held by the National Herbarium.

*Eucomis humilis.*
The original key provided in Afrikaans in Reyneke’s thesis was incomplete in as much as the subspecies of *E. autumnalis* were not included, nor the full details for *E. schijffii* provided. Accordingly, the key below is a translation, one adapted from Reyneke (1972, 1976, 1980), and additionally accommodating current concepts and names. For ease of use, an attempt has been made to translate the key to layman’s terms.

The following should be noted in the context of this key:

1. Great emphasis on the colour of the different flower elements is made, as also is the size of the pineapple-like top-knot in relation to the diameter of the inflorescence.
2. The flowering stem or peduncle is taken as that portion of the inflorescence below the first flower. Whether the peduncle is cylindrical or tapering towards its base is important to note.
3. The ovary is that part of the flower which once fertilized, expands and matures into the fruit capsule.
4. With all *Eucomis* species the flowers turn a greener hue as they age, so try to find a flower that is fully mature but not yet gone right over. Here one needs to look for a flower with anthers that have just released their pollen.
5. Some species of *Eucomis* are naturally very variable both in vegetative and floral form. *E. bicolor* can, for example, have leaves essentially green, or with prominent raised black pustules on the upper side.
6. There appear to be yet further species of *Eucomis* which await description, but these have not been included in the key.
Eucomis pallidiflora subsp. pole-evansii, whole plant.

Eucomis pallidiflora subsp. pole-evansii inflorescence.

Eucomis regia.

Eucomis regia inflorescence.

Eucomis regia infructescence.

Eucomis vandermerwei, whole plant.
Key to Eucomis

1. Plants grow in winter and flower in late spring .................................. E. regia
   2. Plants grow in summer and bloom in late summer .................................. 2

2. Individual flower stalks of mature flowers 15 mm or longer .................................. 3
   2. Individual flower stalks of mature flowers 12 mm or shorter .................................. 7

3. Individual flower stalks of mature flowers bent and sometimes drooping .......................... E. bicolor
   3. Individual flower stalks of mature flowers straight but angled (though not usually at a right angle) .................................. 4

4. Plants with purple-speckled leaf bases and purple ovary .................................. 5
   5. Plants medium-sized, leaves sword-shaped with straight margins, leaf underside purple-spotted at the base .......................... E. comosa var. comosa
   6. Plants large, leaves strap-shaped with wavy margins, leaf underside purple-striped at the base .................................. E. comosa var. striata

6. Plants medium-sized, flowering head quite densely packed flowering stem 45–47 cm long, each individual flower stalk 15–28 mm long (very occasionally as short as 10 mm long) .................................. E. pallidiflora subsp. pallidiflora
   6. Plants very large, flowering head loosely packed, flowering stem 80 cm–150 cm long, each individual flower stalk 25–50 mm long .................................. E. pallidiflora subsp. pole-evansii

7. Plants with purple colouration .................................. 8
   7. Plants without purple colouration .................................. 11

8. Plants with club-shaped flowering stem (it narrows at the base), and top-knot that overhangs the flowering stem, each individual flower stalk angled (though not usually at a right angle) .................................. 9
   8. Plants with cylinder-shaped flowering stem (it does not narrow at base), without an overhanging top-knot, each individual flower stalk somewhat bent and drooping .................................. E. humilis

9. Relatively small plant (at most 10 cm high) with dark purple tepal cluster and filament (stalk supporting the pollen bearing anther), egg-shaped leaves which normally lie flat on the ground, and with creamy-coloured blown-up mature fruits .................................. E. schijffii
   9. Plants a lot bigger than 10 cm in height, tepal cluster green with a purple edge or brown-purple tinge, leaves angled upwards (not floppy on ground) and mature fruits that are not swollen .................................. 10

10. Stalks supporting the pollen-bearing anther (the filaments) are purple, wall of mature ovary is not transparent .................................. E. vandermerwei

11. Flowers white at the time of pollen release, individual flower stalks bent and drooping, flowers widely spaced on the flowering stem, top-knot not overhanging .................................. E. montana
   12. Leaves long and narrow with parallel edges, 15–40 mm broad and 13–30 cm long, margin wavy; flowering stem club-shaped (it narrows at the base); individual tepals 6–10 mm long; mature fruit papery .................................. E. autumnalis subsp. amaryllidifolia

12. Leaves egg-shaped to lance-shaped, seldom long and narrow with parallel edges, 40–130 mm broad, 15–55 cm long, margin wavy; flowering stem cylinder-shaped or club-shaped (it narrows at the base); individual tepals 10–16 mm long .................................. 13

13. Flowering stem club-shaped (it narrows at the base), mature fruit with a hard wall .................................. E. autumnalis subsp. clavata

13. Flowering stem cylinder-shaped, mature fruit with a thin wall .................................. E. autumnalis subsp. autumnalis

Eucomis schijffii, whole plant.
Although readers may find the above key useful on most occasions it is important to bear in mind that in both wild and cultivated situations the species of *Eucomis* evidently hybridise freely. Accordingly, if your specimen does not fit neatly start looking around for the putative hybrid parents!
Acknowledgements
Dr Tanza Crouch kindly translated elements of the thesis of William Reyneke, and produced the maps. The data section of the National Herbarium (SANBI) is thanked for providing PRECIS information.

References


Distribution of *Eucomis* taxa in South Africa, with close-up photographs of flowers of selected taxa.

*Eucomis autumnalis* subsp. *amaryllidifolia*.

*Eucomis autumnalis* subsp. *autumnalis*.

*Eucomis bicolor*.

*Eucomis comosa* var. *comosa*.

*Eucomis comosa* var. *striata*.
Eucomis humilis.  
Eucomis regia.  
Eucomis montana.  
Eucomis schijffii.  
Eucomis pallidiflora subsp. pallidiflora.  
Eucomis vandermerwei.  
Eucomis pallidiflora subsp. pole-evansii.  
Eucomis zambesiaca.