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Promising new *Curcuma* cut flower hybrids for Australia

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Introduction

Curcumas are a member of the ginger family Zingiberaceae and are highly valued for their medicinal properties and as ornamentals. Over the last 10 years, Curcumas have become a very popular ornamental with many new cut flower and potted flower varieties being developed. Many of these new varieties have been derived from intensive breeding work done in Thailand, primarily on the native species *C. alismatifolia*, commonly known as 'Siam tulip' or 'Thailand tulip'.

In Australia, the range of *Curcuma* cultivars sold as a cut flower and potted colour has mostly been selections from overseas. A number of these cultivars have been used both as a cut flower and potted colour. However, only a select few have been good cut flower types and these have been predominantly *C. alismatifolia* cultivars.

As a continuation from the ginger breeding work already underway as part of the 'New and Improved Ornamental Crops' program at the Northern Territory Department of Primary Industry and Fisheries (NTDPIF), located in Darwin, Australia. A *Curcuma* breeding program was initiated to provide the local ornamental industry with new and improved cut flower and potted flower varieties. At the beginning of the program, the focus of the *Curcuma* breeding work was on cut flower varieties, however, as the breeding work progressed the focus has expanded towards identifying promising potted colour types.

In 2008, sixteen promising new *Curcuma* cut flower hybrids were selected from the initial hybrid field trial after

evaluating them against a number of flowering characteristics. The outcomes from the flowering evaluation of these sixteen hybrids are discussed in this report.

Method

The hybrids in the field trial were assessed over two flowering seasons during 2005/06 and 2006/07 against the following flowering characteristics (see Table 1). For the postharvest studies flowers stems were cut just above the soil level and when approximately 50% of the dayflowers were open on the inflorescence. Data was recorded on vase life, stem length and inflorescence head length for each flower stem. In addition, inflorescence colour and form of the hybrids was also recorded during the field assessment.

In the field, hybrid vigour and performance was observed and recorded in relation to flowering period, productivity, adaptability to the full sun condition and the incidence of spotting on the inflorescence. The incidence of spotting was only assessed on those hybrids crossed with the species *C. alismatifolia* and *C. thorelli*. Both of these species are very susceptible to this spotting disorder which is caused by a fungal disease that causes the appearance of small dark pin-hole spots on the inflorescence bracts, stem and leaves (Figure 1). During rainy, overcast and high humidity conditions the severity of spotting increases.



Figure 1. Incidence of spotting on inflorescence

The Costaceae cultivar registry

Continued from the Bulletin 19(4)

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'Red Lollipop'

PARENTAGE: *Costus erythrothyrus*

ORIGIN: Per Glenn Stokes, obtained from Mark Collins

DESCRIPTION: Described in Stokes Catalog as follows:

A fantastic new costus that is compact (24"-30") that has numerous shiny-red 3" pikes on separate 1' basal stems.

Sometimes cones are produced terminally on spiral stems.

Plant blooms profusely at any time of year. Spikes retain color long after small orange flowers are gone.

REFERENCE Stokes Tropicals catalog.

PHOTO: no photo available

'Red Rose'

PARENTAGE: *Costus osae*

ORIGIN: Unknown.

DESCRIPTION: Described in Stokes Catalog as follows:

A beautiful native of Costa Rica is popular because of its attractive red inflorescences. The round fuzzy leaves help make this plant attractive as a foliage plant. A delight to touch. The plant will grow to 3' (1.8m) in shade. Cultivar name is established but description does not distinguish this from other specimens of species *Costus osae*.

REFERENCE: Stokes Tropicals Catalog 1999

PHOTO: no photo available

'Silver Leaf'

PARENTAGE: *Costus erythrophyllus*

ORIGIN: In general cultivation in the US for many years, origin unknown, name from plant tag as received by Dave Skinner.

DESCRIPTION: This form of *C. erythrophyllus* is apparently named for the silvery



sheen when the deeply plicate leaves are seen under certain lighting conditions. The leaf color is a medium green. This cultivar is similar to 'Grey Ghost' except for the leaf color, the more deeply plicate leaves, the stems which are green except at the base, and the deeply lobed ligules which are slightly longer at 25-30 mm. The plant grows to about 1 1/2 meters tall and is glabrous. The bracts have long, leafy appendages and the flowers are white with red stripes.

REFERENCE: www.gingersrus.com/DataSheet.php?PID=7351.

PHOTO: www.heliconia.org/Registry/Costus_SilverLeaf.jpg

'Southern Cross'

PARENTAGE:

Costus 'Tropicais' x comosus var.

bakeri

ORIGIN: Dave Skinner hybrid.

DESCRIPTION:

This is a hybrid of 'Tropicais' with the common *C. comosus* var. *bakeri*,

which is often sold under the incorrect name of *C. barbat-*

us. It is a vigorous grower and easy to flower. The plant often flowers at 1 to 1 1/2 meters but can grow much taller. It is mostly glabrous except for the pubescence on the undersides of the leaves. Leaves have cordate leaf base and ligules are truncate, 3-5 mm long. The bracts are bright red but not appendaged and the flowers are bright yellow and tubular.

REFERENCE: www.gingersrus.com/DataSheet.php?PID=745.

PHOTO: www.heliconia.org/Registry/Costus_SouthernCross.jpg



'Sweet Charlotte'

PARENTAGE:

Costus guanaiensis

ORIGIN: Origin unknown, plant found in greenhouse at the University of North Carolina in Charlotte, they said it was received many years ago from an orchid collector in Orlando, Florida. Named and introduced by Dave Skinner.

DESCRIPTION: A compact form of the diverse species *C. guanaiensis*. Grows to about 1 meter tall and wide, free flowering both from basal shoots and terminal on leafy stems. Stems, ligules, petiole, leaves, bracts, bracteoles and calyx are all thickly covered with short hairs. Inflorescence is typical *C. guanaiensis* with green bract appendages and creamy white flowers with spreading type labelum, red striped and yellow throat. Flowers have a long deeply incised anther crest 25-28 mm from the thecae to the apex.

REFERENCE: www.gingersrus.com/DataSheet.php?PID=7531.

PHOTO: www.heliconia.org/Registry/Costus_SweetCharlotte.jpg

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'Tico Sunrise'

PARENTAGE: *Costus spicatus*
 AGE: *Costus spicatus*
 ORIGIN: Origin unknown, received incorrectly tagged as *C. guanaiensis*. Named and introduced by Dave Skinner.



DESCRIPTION: Plant keys out closest to *C. spicatus*, with a longer bracteole and calyx than the similar looking *C. scaber* or *C. spiralis* with which it is often confused. Plant grows up to 3 meters but can flower at 1 meter. Vegetative parts are covered with short stiff hairs, ligule is 7 mm long, leaves are large to 42 cm long by 14 cm wide, bracts are red toward the base changing to green toward the apex, bracteole 28 mm long, calyx 13 mm long, corolla is pale orange to yellow at base, labellum is yellow with red striped lateral lobes, 4.5 cm long, stamen is yellow tinged with orange, 4.8 cm long, apex is rounded to slightly delatate.

REFERENCE: www.gingersrus.com/DataSheet.php?PID=7302. PHOTO: www.heliconia.org/Registry/Costus_TicoSunrise.jpg.

'Tico Tower'

PARENTAGE: *Costus* aff. *lima* x ?
 ORIGIN: Collected, named and introduced by Dave Skinner, found in southern Costa Rica.

DESCRIPTION: This plant was found on the floodplains of the Rio Rincon on the Osa Peninsula of Costa Rica. It appears to have characters of *C. lima* except with green bract appendages and longer yellow tubular flowers. The plant grows quite tall, up to 4 meters, with thick hairs on all the vegetative parts. The ligule is short and truncate with a reddish margin. Bracts are red with green, triangular foliaceous appendages that are pendent on the inflorescence. Bracteole is 22 mm long, calyx is 15 mm, corolla and labellum are bright yellow, stamen is red at the apex.

REFERENCE: www.gingersrus.com/DataSheet.php?PID=7458. PHOTO: www.heliconia.org/Registry/Costus_TicoTower.jpg

**'Tropicais'**

PARENTAGE: *Costus* aff. *spiralis* x *arabicus*
 ORIGIN: Plant received by Jackie Petrov from her aunt in Brazil. Named and introduced by Dave Skinner.

DESCRIPTION: This plant has characters of *C. spiralis* and *C.*

arabicus. It grows to about 2 meters but can flower on stems 1 meter tall. Vegetative parts are glabrous, ligule is truncate, 10 mm, leaf base slightly cordate. Bracts are red, non-appendaged, bracteole 25 mm, calyx 20 mm. Flower is pale pink and extends vertically from bract, labellum intermediate between tubular and spreading, white to pale pink with yellow throat. Stamen pink to white at apex, apex is rounded, entire.

REFERENCE: www.gingersrus.com/DataSheet.php?PID=7389. PHOTO: www.heliconia.org/Registry/Costus_Tropicais.jpg.

**'Twister'**

PARENTAGE: *Costus* aff. *scaber*
 ORIGIN: Collected, named and introduced by Dave Skinner, found at 1100 meters in the Alto Mayo Reserve, Peru.

DESCRIPTION: This plant is closest to *C. scaber* but may be a new, undescribed species. The vegetative parts have thick hairs. Leaves are broad ovate, ligules short and truncate. The bracts tend to spiral or twist around the inflorescence - thus the name 'Twister'. Bracts are bright red, 35 mm long. Bracteole red, 18-20 mm, calyx 10 mm with shallow lobes, corolla lobes red-orange 40 mm, labellum red-orange 25 mm, stamen 30 mm yellow at base turning red toward apex, slightly exceeding labellum like *C. scaber*.

REFERENCE: www.gingersrus.com/DataSheet.php?PID=7535. PHOTO: www.heliconia.org/Registry/Costus_Twister.jpg (To be continued in the Bulletin 20(2)).

