The aim of the ‘Adaptation of warm-season turf grasses for the tropics’ project (HAL Project TU09001), was to obtain a greater understand-
ing of how a diverse range of warm-season turf grasses would handle the tropics. A total of 25 va-
rieties comprising of 14 species were chosen (Table 1) to assess their performance against challenging
environmental parameters (e.g.: shade, wear and drought) and resources (e.g.: nutrition).

Two trial sites were established in mid-2011 in Mackay and Darwin with the assistance and support from the Mackay Regional Botanic Gardens and Darwin City Council (Wagaman Park) respectively. A third site was to be established at The Centre of Urban Greenery and Ecology’s (CUGE) HortPark in Singapore, however, due to unforeseen circumstances CUGE withdrew from the project as a voluntary contributor and the Singaporean site dropped from the project.

CUGE’s withdrawal meant that the budgeted sum of over $145,000 of matched funds would no longer be available to the project. Discussions between the Department of Agriculture, Fisheries and Forestry Queensland (DAFFQ) and potential voluntary contributors (VCs) to buy into the project commenced early in the New Year.

This included a proposal put forward to the Turf Industry Advisory Committee (IAC) to invest $30,000 of turf R&D levy money to support the project and stop it from folding as a result of CUGE’s withdrawal. The project variation request for levy funds was not endorsed by the IAC through communication received by DAFFQ on 12 March 2012. The IAC felt that the project (TU09001) was not aligned with the Strategic Investment Plan initiatives to date, and the project only benefitted a minority of levy payers.

DAFFQ senior management thought that the project still had merit and that significant information would still be gained from having the Mackay and Darwin trial sites continue, albeit in a limited capacity. A voluntary contribution of $30,000 was made from DAFFQ royalty money to support the adaptation of warm-season turf grasses for the project study by DAFFQ on 4 April 2012, which was agreed to by HAL on 14 May 2012. Following the modified HAL head agreement, the project in its current form (available budget) will allow for a total of three formal assessments to be conducted by DAFFQ research staff of the Darwin and Mackay trial sites to track comparative turf performance only (e.g.: turf quality, colour, mowing requirements, incidence of disease).

Within the original HAL application nutritional studies aimed to reduce nitrous oxide emissions through reduced fertiliser application and “traffic stress” (implementing wear and compact) studies using a simulated wear machine (similar to work undertaken during TU08018) were to be undertaken at both the Darwin and Mackay trial sites. However, due to a significantly reduced budget as a result of CUGE’s withdrawal and no financial support being made available from the turf R&D levy, these parameters are unable to be researched.

The most recent inspection of the Mackay and Darwin trial sites was conducted on 26 and 27 June 2012 respectively. A summary of the condition of each turf cultivar being trialled to date follows (Table 1). Where plugs were used to establish the plots, these were planted at approximately 150 x 150mm spacings on 12 July 2011 (Mackay site) and 26 July 2011 (Darwin site).

### Broadleaf Carpet Grass
Mackay:
- Planted as sod. The combination sward is nearly equal halves carpet grass and green couch as commonly seen in the tropics (referred to as buffalo grass). The variety is very fast growing and is already in need of a mow after having been cut five days ago. The growth is comparable to the blue couch varieties (Aussiblue and Tropika) being trialled. Nutrition is moderate which is highlighted by the purplish colour in the leaves. Low thatch. Some dieback in the turf possibly due to disease. Thatch moderate. Some weeds present. Moderate mowing requirement. Low thatch.

- Darwin: Established by seed. The carpet grass looks to be a good genotype, somewhat finer than other common broadleaf carpetgrass varieties. Has produced a dense sward under close mowing. Approximately 90 per cent of the plot is carpet grass and 10 per cent green couch. Nutrition level and colour are excellent. Fast vertical growth compared with other varieties, meaning a greater mowing requirement. Low thatch.

### OZ Tuff

- Darwin: Established by plugs. A high level of contamination present, particularly from the surrounding Aussiblue sward. Turf colour is good. Some mite damage visible. Low thatch.

### Tropika
- Mackay: Planted as sod. The variety is very fast growing (equal to Aussiblue) and is already in need of a mow after having been cut five days previous. Good colour and density. Fertility levels are good. Thatch moderate. High level of green couch contamination is present (although surrounding plots are not green couch). Excess clippings are still present across the turf as a result of high moisture levels (the moisture makes it difficult to catch and remove grass clippings from the fast growing turf). Thatch moderate. Low thatch level to moderate.

- Darwin: Established by sod. Fast vertical and lateral growth compared with other varieties. Nutrition and turf colour is good. No weeds present. Thatch level moderate to high. High level of green couch contamination is present (although surrounding plots are not green couch). Excess clippings are still present across the turf as a result of high moisture levels (the moisture makes it difficult to catch and remove grass clippings from the fast growing turf). Thatch moderate. Low thatch level to moderate.

### Aussiblue
- Mackay: Planted as sod. The variety is very fast growing (equal to Tropika) and is already in need of a mow after having been cut five days previous. Good colour and density. Fertility levels are good. Thatch moderate to high. High level of green couch contamination is present (although surrounding plots are not green couch). Excess clippings are still present across the turf as a result of high moisture levels (the moisture makes it difficult to catch and remove grass clippings from the fast growing turf). Thatch moderate. Low thatch level to moderate.

- Darwin: Established by plugs. High contamination present. However, where the variety is growing, the sward is very healthy. Good turf colour, even some purpling of the leaves (see photo below).
**Kings Pride**
M: Only. Planted as sod. Very high thatch, the most of all varieties trialled in the Mackay trial. Good dark green colour. Moderate vertical growth compared to blue couch varieties and Blue Dawn. Nutrition level is good as is colour. No weeds present. Thatch moderate to high.

**LowgroW**
M: Only. Established by sod. Excellent turf colour. Some scalping from mower blades and or scarring. has occurred and recovery is slow because of its stoloniferous growth. Moderate vertical growth compared to blue couch varieties and Blue Dawn. Nutrition level is good as is colour. No weeds present. Thatch moderate to high.

**Pristineflora**
M: Planted as plugs. Top dressing is needed. Nutrition is good. Some weeds are present. Seeding profusely. (See photo below). Thatch is low to moderate due to its establishment method.

**Royal**
M: Planted as plugs. Low nutrition level. Strong stolons porpoising across the establishing sward (see photo below). Top dressing is needed. Some blue couch contamination is present. Moderate inflorescence level. Low thatch level because of the establishment method.

**Sir Walter**
D: Only. Established by sod. Excellent turf colour. Some scalping from mower blades and or scarring has occurred and recovery is slow because of its stoloniferous growth. Moderate vertical growth compared to blue couch varieties and Blue Dawn. Nutrition level is good as is colour. No weeds present. Thatch moderate to high.

**Zt-11 (ZoySia)**

**Shadetuff**

Over the course of the study images from the Mackay and Darwin trial sites have been uploaded to the Redlands Turf Research photostream on Flickr: www.flickr.com/photos/redlandsturfresearch/. Should you wish to discuss activities of the above trial contact Matt Roche via email Matt.Roche@daff.qld.gov.au.

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