

Big growth from subtropicals

By Matt Crosbie

With growth rates as high as 140 kilograms a day over a dry summer, subtropical grasses are obviously highly water efficient.

The Agronomy of New Perennials – Tropical Grasses Project being conducted on 'Dunreath' Duri, in the Goonoo Goonoo catchment in northern NSW is looking at subtropical grasses to determine their plant rooting depth; extent of soil drying; levels of ground cover and their efficiency of dry matter production.

Established in December 2005, the trial is in its third summer investigating Katambora Rhodes grass, Premier digit grass and Swann bluegrass compared with more traditional forage options.

"Our findings indicate that Premier digit is the most attractive in terms of quantity and quality of forage grown. Katambora Rhodes has been excellent at generating groundcover and extracting soil water from the profile," Dr Sean Murphy said.

"Swann bluegrass, however, has been very slow to establish, but I expect better things from it this season.

"The subtropical grasses started to producing rapid growth by late September and by early December growth rates were as high as 140 kg DM/ha/d for the Premier digit. By comparison, a summer active forage crop achieved just 18 kg DM/ha/d in early

December and was still too young to graze. For the season Premier digit produced 30 per cent more dry matter than forage sorghum.

"The subtropicals fit nicely into the hydrological system of northern NSW because soil water accumulates during their dormant

key points

- Northern NSW trials reveal the potential for subtropical grasses to produce bulk forage at efficient rates over summer
- Initial results indicate superior fodder quality and quantity from Premier digit over other species
- Katambora Rhodes grass has shown a strong ability to generate groundcover and extract soil water from the profile.



TABLE 1. Trial results from Goonoo Goonoo catchment in northern NSW

	Dry matter yield (t/ha)	Root depth (m)	Soil drying (mm)	Water use efficiency (kgDM/ha/mm)
Premier digit	16.1	1.4	175	32.4
Katambora Rhodes	11.4	1.7	213	22.0
Swann bluegrass	6.8	1.2	139	13.7
Lucerne	11.6	1.7	130	23.6
Forage sorghum	12.7	1.2	121	30.0

LEFT: Subtropicals such as Premier digit fit well into the NSW hydrological system. (Photo: S Murphy)

growing period compared to the long-term average of 524 mm, Premier digit produced 16.1 t/ha of dry matter with a water use efficiency of 32.4 kgDM/ha per millimetre of soil moisture and rainfall. Table 1 shows data for the three grasses, along with lucerne, which was also grown in the trial.

One downside of Premier is that it is not quite as aggressive as Katambora in seeking soil water. During drier parts of the season, Premier tended to wilt and become dormant rather than continuing to chase moisture; Katambora chased every drop it could get.

While lucerne produced quality forage, the level of groundcover has only once exceeded 75%, the threshold above which soil erosion is minimised. The subtropicals, however, all have groundcover levels above 80% substantially reducing the risk of soil erosion.

“The subtropical grasses have an important role to play in the forage production system because they can produce large quantities of forage, at very efficient rates, which can be used at the time of growth or later in the season in the form of dry bulk to fill the autumn feed gap.” ↓

 **More information**

Dr Sean Murphy, NSW DPI

T: (02) 6763 1244

E: sean.murphy@dpi.nsw.gov.au

winter period. They then harvest this stored water during their growing season in spring and summer, thereby creating dry soil profiles once more.”

Despite the extremely dry 2006-07 summer, where 364 mm fell over the nine month