

Breeding of Napier grass (*Pennisetum purpureum*) cv. Taishiu No.8 ⁽¹⁾

Tzu-Rung Li ⁽²⁾⁽⁵⁾ Yu-Kuei Cheng ⁽²⁾ Shyh-Rong Chang ⁽²⁾ Chi-Hsin Lu ⁽²⁾ Jeng-Bin Lin ⁽²⁾
Hisn-Hung Lin ⁽³⁾ Sheng-Yang Wu ⁽⁴⁾ and Pi-Hua Chuang ⁽⁴⁾

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Abstract

Napier grass (NG, *Pennisetum purpureum*) line 2504 was a superior line selected from a hybrid descendant of Taishiu No. 3 (NG cv. TS 3) and Taishiu No.2 (NG cv. TS 2) through progeny selection, strain comparison and regional trials. The agronomic traits of line 2504 include straight leaves, none or very little hair in the leaf blade and leaf sheath, which distinguishes them from existing Napier grass cultivars in plant characteristics. Regional test results show that at 10 weeks of regeneration, the height of leaf collar and leaf apex for the agronomic traits of line 2504 were 71.8 and 149.0 cm, respectively. The stem diameter was 13.5 mm, dry leaf and stem ratio 0.93 and the number of tillers was medium. In terms of forage yields, the average fresh yield was 208.7 mt/ha/y, up 39.3% compared with the parent NG cv. TS 3, and up 28.2% compared with the control cultivar NG cv. TS 7. The dry matter yield was 36.4 mt/ha, which was higher than both NG cv. TS 3 and NG cv. TS 7. In terms of nutrient composition, the contents of crude protein, acid detergent fiber, neutral detergent fiber, and relative feed value of the forage were 12.0, 33.5, 59.3 and 99.1%, respectively. The above contents were all better than the control cultivar NG cv. TS 7 and with significant difference. Apart from the Phenotypic traits, the adoption of Inter-Simple Sequence Repeat (ISSR) could also distinguish line 2504 from the existing seven varieties of Napier grass in Taiwan. Therefore, line 2504 became a new cultivar named as Napier grass Taishiu No.8 (NG cv. TS 8) on October 21, 2018.

Key words: Napier grass (*Pennisetum purpureum*), NG cv. TS 8, Relative feed value.

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(2) Forage Crops Division, MOA-TLRI, HsinHua, Tainan 71246, Taiwan, R. O. C.

(3) Southern Region Branch, MOA-TLRI, Pingtung 94644, Taiwan, R. O. C.

(4) Eastern Region Branch, MOA-TLRI, Ilan 268, Taiwan, R. O. C.

(5) Corresponding author, E-mail: trli@tlri.gov.tw.