

# Evaluation of Sorghum Cultivar for Forage Production <sup>(1)</sup>

Po-Yu Chen <sup>(2)(3)</sup>

Received: Sep. 28, 2018; Accepted: Mar. 7, 2019

## Abstract

The weather is suitable for growing the sorghum in Taiwan. Objective of the study was to evaluate the sorghum cultivar for 5 stages production in Taiwan. Sorghum cv. Taichung No. 5 was heading at 50 days after planting in both spring and fall, while Sweet sorghum cv. Taishu No.1 (TS1) took 57 days and 53 days to head in spring and fall, respectively. It indicated that the heading date of Sorghum cv. Taishu No.1 was more sensitive to the climate factors. The plant height of Taichung No.5 was 133.24 cm in spring and 151.71 cm in fall, respectively, which were apparently shorter than those of Sweet sorghum cv. TS1 with 223.34 cm and 233.34 cm for spring and fall crops, respectively. Taichung No.5 had good standability with short plant height, while Sweet sorghum with longer stalk was apt to be lodging at late growth stage by serious rainfall. The fresh and dry matter weights of Sweet sorghum cv. TS1 were 440.1 and 137.3 g/plant, which were higher than those of Sorghum cv. Taichung No.5 with 286.4 and 107.4 g/plant for spring crop, respectively. In fall crop, the fresh weight of Sorghum cv. Taichung No.5 was 412.5 g/plant, which was higher than that of Sweet sorghum cv. TS1 with 363.4 g/plant. Both cultivars reached the highest dry matter content and dry matter weight at 40 days after heading. The crude protein content of Sorghum cv. Taichung No.5 was 11.53%, which was significantly higher than that of Sweet sorghum cv. TS1 with 8.68%. The content of water-soluble carbohydrate of Sweet sorghum cv. TS1 was 13.38%, which was higher than that of Sorghum cv. Taichung No.5 with 7.78%. The Flieg's score of Sweet sorghum cv. TS1 was 93.67, with "very good" grade for silage quality, while that of Sorghum cv. Taichung No.5 was only 48.33. The results indicated that forage sorghum for forage use might be to select the lines with high water-soluble carbohydrate content. In addition, it was suggested to harvest forage sorghum at optimum stage to make good quality of silage.

Key words: Sorghum, Yield, Forage quality, Silage.

---

(1) Contribution paper No.2603 from Livestock Research Institute, Council of Agriculture, Executive Yuan.

(2) Forage Crops Division, COA-LRI, Tainan 71246, Taiwan, R. O. C.

(3) Corresponding author, E-mail: muu680@mail.tlri.gov.tw.