

# Evaluation of soybean Tainan No. 3 and No. 4 for forage use <sup>(1)</sup>

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## Abstract

Many cultivars of excellent gramineous forages have been selected and bred in Taiwan, but it is not easy to produce legume forages with high quality such as alfalfa due to geographical and climatic factors in Taiwan. Therefore, domestic leguminous forages were mostly dependent on imports, which caused the cost of forages to increase. In order to reduce the cost of production for dairy farmers, it was important to develop domestic legume crops as alternative legume forages. Domestic breeding soybean Tainan No. 3 (TN3) and green manure soybean Tainan No. 4 (TN4) were evaluated for the forage use in spring and fall crops. Alfalfa line Middle-east was used as a control variety. The agronomic traits, forage yield and quality of the legume forages with different growth days 60, 90 and 120 days in spring crop, and 60 and 90 days in fall crop were determined. The results showed that the dry matter yield and crude protein content at 90 and 120 days were similar to TN3 in the spring crop. The contents of water-soluble carbohydrates, neutral detergent fiber and acid detergent fiber were the best at 90 days in the spring crop. The soybean was still in the vegetative growth stage without pod formation at 60 days in the fall crop, which was not a harvest stage suitable for use as feed. The pod dry matter percentage of pods per soybean was high at 90 days in the fall crop. It was suggested that TN3 could be harvested at 90 days in both spring and fall crops. However, TN4 might be harvested at 120 days in the spring crop and 90 days in the fall crop to produce a higher protein yield. It was recommended that TN3 and TN4 might be used as domestic legume feed, which could help reduce the dependence on imported legume feed and stabilize the supplementation of domestic feed in Taiwan.

Key words: Forage use, Leguminous forage, Soybean.

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