

Thesis Title Effect of Cutting Frequency on Yields and Persistences
 of Signal grass (*Brachiaria decumbens*) and Verano
 stylo (*Stylosanthes hamata cv. Verano*) in
 Associations.

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Abstract

Two experiments were carried out from April 4, 1990 to June 30, 1991 at Khon Kaen University, Khon Kaen, Thailand, on the Korat soil series. The objectives of the experiments were to determine the effects of frequencies of cutting at 15, 30, 45, 60 and 90 days on yields, crude protein (CP) and persistences of signal grass in experiment I and cutting at 15, 30, 45 and 60 days on yields and persistences of signal grass and verano stylo in associations in experiment II. A randomized complete block design was used in each experiment.

In experiment I, five treatments with eight replications were studied. The signal grasses were transplanted by rootstocks and cut at the height of 1.5 inches from the ground level. The initial cutting was imposed at 45 days after planting. The next

cutting were managed at the frequency which imposed in each treatment. The result showed that the highest cumulative dry matter herbage yield (207.42 g./pot) ($P < 0.01$) at cutting frequency of 90 days. The highest total crude protein content (16.9%) was obtained at the cutting frequency of 15 days. At cutting frequency of 90 days, the total nonstructural carbohydrate content cumulative on root and plant density were highest ($P < 0.01$) being 505.55 mg./g.root and 35 plants/pot, respectively. The result demonstrated that the frequency of cutting influenced the yields, nutritive values and persistences of signal grass. In experimental II, four treatments with six replications were studied. The signal grasses were transplanted by rootstocks and treated verano stylo seeds surface sown at 8 kg. per rai. Every harvesting, the swards were cut at approximately 1.5 inches from the ground level. The results showed that in the first year, the cumulative dry matter mixed sward yield was highest (11.72 ton/ha) ($P < 0.01$) at cutting frequency of 60 days and the entire density of plants in mixed sward was highest (757 plants/m²) ($P < 0.01$). In the early rainy season of the second year, the cumulative dry matter yields and the plants density were not significantly different, but were significantly different ($P < 0.01$) only on signal grass density which was highest (408 plants/m²) from the frequency of cutting at 60 days. At cutting frequency of 15 days, the density of legumes was highest (72 plants/m²) ($P < 0.01$). This results demonstrated that the cutting at different frequencies affected the yields and persistences of signal grass and verano stylo in associations.