CHAPTER 7
YIELD, NUTRITIVE AND ANTINUTRITIVE VALUES OF SEVEN VARIETIES OF NAPIER GRASS (*Pennisetum purpuerum*) GROWN IN KELANTAN

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INTRODUCTION

Napier grass was introduced to Malaysia in 1920 from Africa as a forage crop. It is presently the most attractive grass for ruminant production, as it is a perennial grass, which requires a minimum amount of inputs. It possesses various beneficial attributes including high dry matter (DM) yield with moderate nutritive value, quick re-growth potential, drought tolerance and ease of propagation (Wangchuk et al., 2015; Fukagawa & Ishii, 2018). In Malaysia, it has been cultivated with a range of varieties, including Pakchong, Indian, Taiwan, Zanzibar and dwarf; they differ in morphology, DM yield and nutritive value. All its varieties can be grouped into two groups: tall and dwarf. The tall variety of Napier grass shows higher yield (56.7-65.9 ton/ha/year) than the dwarf (43.7-55.9 ton/ha/year), while the dwarf variety has higher nutritive values (e.g., crude protein 11.5-12.1%) than the tall (crude protein 9.8-10.6%) (Halim et al., 2013).

Despite the positive attributes, Napier grass can reach oxalate levels that are toxic to grazing ruminants as reported by Rahman et al. (2006). The oxalate accumulation in forage plants could be varied by agronomic factors, such as growing season, harvesting practices, and plant variety (Rahman & Kawamura, 2011). Thus, Napier grass varieties with lower tendency of oxalate accumulation might be