

**OXALATE AND NITRATE ACCUMULATION IN HYBRID NAPIER VAR.
CO -3 (*Pennisetum purpureum* **P. americanum*) AND WILD GUINEA
GRASS (*Panicum maximum*) GROWN IN MID COUNTRY SRI LANKA**

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Excess amount of soluble oxalate and nitrate cause poisonous effects on ruminants mainly fed on forages. Oxalate and nitrate accumulation in forages depend on many factors such as soil, climate, agronomy and plant factors. A field experiment was conducted using Completely Randomized Design (CRD) in 4 factor factorial treatment with three replicates to evaluate the effect of location (Animal experimental farm Gannoruwa, AI centre farm Kundasale), species (Hybrid Napier variety, CO-3, Wild guinea grass), plant part (stem, leaf) and growth stages (2, 4 and 6 weeks) on nitrate and soluble oxalate accumulation. There was a four way interaction among the factors in nitrate accumulation ($p < 0.05$). The highest nitrate content was observed in stems compared to the leaves and declined with maturity in hybrid Napier variety CO-3 followed by wild guinea grass with location effect. Three way interactions of location \times species \times plant part and species \times plant part \times growth stage were significant ($p < 0.05$) in oxalate accumulation. In wild guinea grass, soluble oxalate concentration in leaves was higher than stems and declined in both parts with maturity while similar trend was followed by hybrid Napier variety CO-3 without location effect. Thus, it can be concluded that the nitrate and soluble oxalate accumulation in forages depend on plant factors like species, plant part and maturity.

Key words: CO-3, Guinea, Nitrate accumulation, Oxalate accumulation, Plant factors