

EVALUATION OF PRODUCTIVITY OF *CHLORIS GAYANA* UNDER SOILS OF VARYING COMPOSITION IN SOUTH WESTERN UGANDA

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ABSTRACT

This study therefore evaluated the productivity of *Chloris gayana* under varying soils in South Western Uganda. The productivity of *Chloris gayana* in selected districts in South Western Uganda (Kiruhura, Ibanda, Mbarara, Isingiro, Sheema) was already established by Lagu et al (2017). The present study profiled the soils in the above districts where the *Chloris gayana* was grown for total organic matter, available phosphorus, extractable bases (potassium, sodium, magnesium and calcium), total nitrogen and textural classes (sand, clay, silt) following standard procedures described by Okalebo et al (2002). The results showed that the highest quantity of seeds and biomass per acre of *Chloris gayana* grass is attained if only all the essential primary soil nutrients (N, P, K) are above the critical levels. Hence, Kiruhura district having soils with the highest levels of essential soil nutrients, N (4.00±0.77%), P (33.73±12.98ppm) above the critical levels (N, 2%; P, 15ppm) recorded the highest quantity of *Chloris gayana* seeds harvested per acre (18.03±3.03 kg per acre) and hay bales per acre (311.11 kg/acre) compared to the other districts. Hence, efforts towards soil testing and soil amendments with essential nutrients (NPK) need to be intensified for increased productivity of *Chloris gayana* in South Western Uganda.

Keywords: Hay bales, Nutrients, Rhodes grass, Seeds.

1. INTRODUCTION

In Uganda, the livestock subsector plays a significant role as it is a source of livelihood to about 4.5 million people and contributes about 3.2% of the Gross Domestic Product (GDP) of the country (Mbabazi and Ahmed 2012; UIA 2009; ICPALD 2013). The cattle kept provide a reliable source of income, household nutrition/ food security and employment; among other benefits (ACET 2017). However, agriculture and livestock production is characterized by low yields, shortage of water and pastures/ forages including pasture seeds especially in the dry areas of the cattle corridor (World Bank 2011; MAAIF 2010). Hence there is increased demand for improving rangelands in pastoral areas including the South Western Zone of Uganda to boost livestock productivity. One strategy is to demonstrate community seed multiplication, pasture establishment and improvement and utilization of improved forages like Rhodes grass in the dry