

Dedication

To those give me Name and meaning

Father and mother

To whom lights of life..... My sisters and brothers

To those that closed to me My colleagues and
friends

For all those

I gift the research and simple effort

Nancy

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ABSTRACT

The study was conducted in ELbaja area west of ELDueim in the White Nile State. The main objective of this study was to investigate the browsing as related to rangelands management aspects in the area. Three plots representing the main browse pattern were selected, each of (250m×250m), within each of these three plots, three circular samples (0.1ha each) were marked to determine tree densities and browse availability. In each plot two

transects of 100m each were located to measure vegetation attributes mainly tree density, browsing level, diameter at browsing point, available twigs numbers and available browse productivity. Beside this the quantitative and qualitative assessment of herbaceous layer such as composition, frequency, density, biomass and productivity were assessed. Socio-economic investigation was conducted to collect both qualitative and quantitative information. Two questionnaires were designed for nomads and settled groups. The aim was to collect information in respect to pattern of browse resource used and the associated problems. The study concluded that, *Acacia tortilis* was the most preferred browse tree but it is decreasing since its density as mature trees was higher than its natural regeneration. While, total density of natural regeneration of trees in general was reasonable compared with total trees density in the study area, nearly (2: 1) which could be accepted as a quantity to decrease along the natural selection process.

The cover percentage under trees was dominated by *Eragrostis spp*, while the herbaceous biomass production is considered reliable (0.24 ton/ha) compared with open rangelands (0.5 ton/ha). Grazing browsing ratio found to be (1:2) which reflected good tree coverage, as this is affected by the percentage of tree shade on the herbaceous layer.

The water sources were the main factor among pastoralist to determine the utilization of browse resources during the summer period. This period considered the best browse seasons because the fodder trees was available for livestock in villages while herbaceous layer disappear.

The *Acacia tortilis* is endangered by excessive cutting that are practiced by the people in the area.

The study recommended that there is great importance to keep balance for the natural regeneration, according to the current status and need to sustain

the *Acacia tortilis* trees because it is a preferred and important browse tree in the area. Conservation and protection of the ground cover is required because it represent the source of fodder and keep the browse graze ratio within ecological stability. The study proved that the social control is still effective as related to natural resources protection and should be further supported for future conservation.

Extension is required in the area to increase the awareness among the people towards cutting of trees and to involve them in the management process.

الخلاصة

أجريت هذه الدراسة بمنطقة الباجا- غرب الدويم بولاية النيل الابيض والهدف الرئيسى منها هو استقراء معلومات عن الرعى الشجرى وعلاقتة بإدارة المراعى. تم اختيار ثلاثة مواقع تمثل انماط الرعى الشجرى وتم تحديد مساحات كعينه (م 250×250م). وداخل كل من هذه المساحات تم تحديد ثلاثة عينات دائرية مساحة كل منها (0.1 هكتار). فى كل مساحة عينة تم وضع عدد اثنين قاطع بطول 100 متر وذلك لقياس مكونات الغطاء النباتى الذى ضم كثافه الاشجار, قطر الفرع عند نقطة القضم, عدد الفروع المتاحة للرعى, الانتاجيه العلفيه الشجرية بجانب التقديرات الكمية والنوعية للغطاء العشبى مثل تركيب النباتات, التردد, التغطية والانتاجية. كذلك اجرى مسح اقتصادى اجتماعى لجمع معلومات من خلال استخدام عدد اثنين استبيان لتغطية

المجموعات الرعوية للرحل والمستقرين لمعرفة انماط واستغلال موارد الرعى الشجرى والمشاكل المتعلقة بها.

من اهم نتائج الدراسة ان شجرة السيال من اكثر الاشجار المفضلة للرعى الشجرى, لكنها متناقصة وذلك لان كثافة الاشجار اعلى من النمؤات الطبيعية. اما كثافة الاشجار بصورة عامه فهى جيدة اذا ما قورنت بنسبة النمؤ الطبيعى للاشجار (2:1) مما يعنى فرصة تناقصها مقبولة خلال عمليات الاختيار الطبيعى للاشجار.

نسبة الغطاء النباتى تحت الاشجار يسوده نبات البنو بينما الانتاجية النباتية تعتبر مناسبة (0.24 طن/ هكتار) عند مقارنتها مع المرعى المفتوح (0.5 طن /هكتار). وجدت الدراسة ان نسبة العلف الشجرى للعشبي (2:1) وهذا يعنى ان هنالك نسبة غطاء شجرى مناسبة خصوصا وان الانتاج العشبي فى المرعى الشجرية تحكمة نسبة ظل الاشجار.

تعتبر مصادر المياه من العوامل الطبيعية والمحددة وسط الرعاه لاستخدام موارد الرعى الشجرى اثناء فترة الصيف لانها تعتبر من افضل مواسم الرعى الشجرى التى توفر العلف بصورة متاحة للحيوانات خصوصا للمستقرين بالقرى.

شجرة السيال من الاشجار المهددة لتعرضها للقطع المستمر من قبل السكان المحليين.

اوصت الدراسة ان هنالك ضرورة للمحافظة على النمؤات الطبيعية لاشجار السيال حسب الوضع الحالى لها بغرض الاستدامة لانها المفضلة للحيوان وذات اهمية للرعى الشجرى فى المنطقة بالاضافة الى ضرورة المحافظة والحماية للغطاء النباتى لانه يمثل مصدر للعلف ويحافظ على معدل الرعى الشجرى من اجل صيانة واستقرار البيئة. كما وجدت الدراسة ان حماية النظام المحلى للاشجار ما زال له تاثير وتوصى بدعم هذا الاتجاه لخدمة المحافظة على الموارد وادارة المراعى بصورة مستدامة. الخدمات الارشادية مطلوبة بالمنطقة لزيادة الوعى بالنسبة للسكان اتجاه التعامل مع الاشجار, واستيعابهم فى عملية الادارة.