

# Study on Common plants at Savannah Rangeland in Elsuki area, Sinnar State, Sudan

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## Abstract

This study was conducted in at Elsuki area, Sinnar State, Sudan. The study aims to provide information that defines the Common plants of the Elsuki area at low rainfall savannah rangeland in the Sudan. Taxonomical specimens were collected for the plant species, and used transects (belt) to prepare a checklist for Common plant species present in the study area. These specimens were prepared, examined, identified, described and documented. The results define of common plants revealed 85 species, belonging to 68 genera and 34 families. The common species that had high distribution were *Acacia seyal*, *Acacia mellifera*, *Commelina amplexicaulis*, *Acnthespermum hispidum* and *Rhynchosia memnonia*. It was concluded that common plants species considered as a basis for vegetation studies in the Elsuki area, Sinnar State which will be invaluable in resources for data base for vegetation types used by ecologist.

**Key words:** Common plants, Herbs, Shrub, Tree, Specimens, Key species.

## Introduction

Savannah plants in Sudan provide various benefits to pastoral and agro-pastoral communities. These plants are sources of food, medicine and shelter for the communities and their livestock. The starting point for most range management decisions to know range plants by identifying species and their growth habits, habitat, response to grazing, and other characteristics. Under Sudan's savannah environment the pasture is composed of a predominantly annual grasses with some forbs. Skerman (1965) showed that annuals

constitute 80% and perennials 20% of the forage plant composition. Annuals are the most important forage in the livestock economy of the Baggara country and all appear to be eaten. According to (Musa et al, 2011), the most commonly medicinal plants species is *Acacia oerfota* with a use value of 1.20, followed by *Amarindus indica*, *Cassia arereh* and *Ziziphus spina-christi* which have use values from 1.07 to 1.00. The most rarely used plants are *Senna singueana* (use value 0.10), *Senna occidentalis* (use value 0.13) and *Strychnos innocua* (use value 0.13). This current paper aims to contribute on a better understanding of Study on Common plants at Savannah Rangeland in Elsuki area, Sinnar State, Sudan.

## Material and Methods

The study was conducted at Elsuki area about 50 km south of Sinnar town at the eastern bank of the Blue, (Latitude 12°.5'-14°.7' N and longitude 32°.53'-35°.58' E). The total area of the state is about 40860 kms<sup>2</sup>. The population is about 1,144,755 distributed within three localities, Sinnar, Dindir, and Singa with the following ratios, 40.2 %, 32.2 %, and 27.6 % respectively. The rangeland represents about 40 % of the total area of the state. This area includes enclosures, valleys, banks of the Blue Nile, Rahad and Dindir rivers in addition to rangelands around mountains and forests. The main pastoral tribes are: Kenana, Lahawein, Nefadia, Arakein, Agalein, Falata, Ambararo, Ruffaa and others. ( Abdelaziz , 2010).

Five major transects were taken, each of 3000m length, 10m width for trees and shrubs, for herbs one quadrat taken each 200m within a total area of 150.000m<sup>2</sup>. Sampling precision was obtained by long narrow rectangles crossing contour lines, according to Barmann (1953).

Taxonomical specimen were collected for the plant species, and used transects (belt) to prepare a checklist for Common plant species present in the study area. All transects took the form of belt transect according to Greig Smith (1957) and Barbour et al. (1987). Then most important 15 species were documented and studied in detail taxonomically. Materials were used which help in collecting plant specimens like scissors, pressers and newspapers etc. Plant species were first verified using sets of keys

(Anderws 1950, 52, 56), (Hutchinson and Dalziel 1963), (Arbonner, 2004), (EL safori, 2000) and (Baraun et al 1991).

### Results and Discussion

Result In table 1, provide that chick list as common trees species at Elsuki area during season 2011/2012.the key tress species were *Acacia seyal*, *Acacia Senegal* and *Blaanites aegyptica*.

**Table 1, List of Trees found at Elsuki area during season 2011/2012**

No.	Scientific Name	Family	Local Name
1.	<i>Acacia seyal</i> Del.	Mimosoideae	Taleh
2.	<i>Acacia fistula</i>	Mimosoideae	Sofair
3.	<i>Acacia nilotica</i> (L.) Wild. Ex Del	Mimosoideae	Sunt
4.	<i>Acacia polyacantha</i>	Fabaceae	Kakamout
5.	<i>Acacia senegal</i> (L.) Willd.	Mimosoideae	Hashab
6.	<i>Adansonia digitata</i> L.	Bobacaceae	Tabaldi
7.	<i>Anogeissus leiocarpus</i>	Combretaceae	Sealak
8.	<i>Blaanites aegyptica</i> (L.) Del.	Balanitaceae	Heglig
9.	<i>Cephalocroton cordofanus</i>	Euphorbiaceae	Dangal
10.	<i>Combretum hartimanniam</i> Schweinf.	Combretaceae	Habil
11.	<i>Delbergia melanoxyton</i> Guill& Perr	Fabaceae	Abanus
12.	<i>Dichrostachys glumerata</i>	Fabaceae	Kadad
13.	<i>Hyphaene thebaica</i> (L.) Mart.	Plmaceae	Dom
14.	<i>Sterculia setigera</i> Del	Sterculiaceae	Tartar
15.	<i>Ziziphus spina chiristi</i> (L.) Desf.	Rhamnaceae	Sidir

Result In table 2, provide that chick list as common shrubs species at Elsuki area during season 2011/2012.the key tress species were *Acacia mellifra*, *Acacia oreofota*, *Capparis deciduas* and *Cadaba farinose*.

**Table 2, List of Shrubs found at Elsuki area during season 2011/2012**

No.	Scientific Name	Family	Local Name
1.	<i>Acacia mellifra</i> (Val.) Benth	Mimosoideae	Kitir
2.	<i>Acacia oreofota</i>	Mimosoideae	La'ot
3.	<i>Aerva javanica</i>	Amaranthaceae	Ghobaish
4.	<i>Cadaba farinosa</i>	Capparaceae	Seraeh
5.	<i>Calotropis procera</i> (Ait.) Ait. F.	Asclepiadaceae	Usher
6.	<i>Capparis decidua</i> (Forssk.) Edgeu.	Capparaceae	Tundub
7.	<i>Grewia tenax</i>	Malvaceae	Godiam
8.	<i>Sterospermum kunthiamum</i> Cham.	Bibnonaceae	Kashkash

Result In table 3, provide that chick list as common herbs species at Elsuki area during season 2011/2012.the key herbs species were *Commelina amplexicaulis*, *Sporobolus pyramidatus* and *Justicia palustris*.

**Table 3, List of Herbs found at Elsuki area during season 2011/2012**

No.	Scientific Name	Family	Local Name
1.	<i>Abelmoschus esculentus</i> (L.) Moench.	Malvaceae	Waika
2.	<i>Acalyphe indica</i> L.	Euphorbiaceae	Um gloot

3.	<i>Acnthespermum hispidum</i> L.	Asteraceae	Hirab Husa
4.	<i>Aeschynomene indica</i> L.	Papilionaceae	Seha
5.	<i>Aristolochia bracteolate</i> Lam.	Aristolochiaceae	Um Glagil
6.	<i>Boerhavia erecta</i> L.	Nyctaginaceae	Triba
7.	<i>Brachairiae ruciformis</i> (Sm.) Grieseb.	Poaceae	Agaiz galas an
8.	<i>Cassia occidentalis</i> (L.)	Caesalpiniaceae	Soreeb
9.	<i>Chloris virgate</i> Sw.	Poaceae	Abu Meleaha
10.	<i>Choloris parbata</i> ver. Meccana Ash. et.Schweinf	Poaceae	Um Shelial
11.	<i>Clitoria ternate</i> L.	Fabaceae	Clitoria
12.	<i>Commelina amplexicaulis</i> Hassk	Commelinaceae	Beeaid
13.	<i>Commelina kotschy</i> Hassk	Commelinaceae	Ebreaq Elfaki
14.	<i>Corchorous fascicularis</i> Lam.	Tiliaceae	KHodra
15.	<i>Corchorus depressus</i> (L.) Christens.	Tiliaceae	Khodra Hamra
16.	<i>Crotalaria senegalensis</i> (Pers.) Bacle ex DC	Fabaceae	Tagtaga
17.	<i>Cucumi smelo</i> (L.)	Cucurbitaceae	Humaidh
18.	<i>Cuscuta hyalnia</i> Roth.	Convolvulaceae	Hamoul
19.	<i>Cymbopogon nervatus</i> (Hochst.) chiov.	Poaceae	Nal
20.	<i>Cyperus rotundus</i> L.	Cyperaceae	Se'ida
21.	<i>Dactyloctenium aegyptium</i> (L.) Beauv.	Poaceae	Um Asabie
22.	<i>Desmodium dichotomum</i> (Klein) DC.	Fabaceae	Abu Areeda
23.	<i>Digera alternifolia</i> (L.) Mart.	Amaranthaceae	Khashm elnaseeba
24.	<i>Digera muricata</i> (L.) Aschers.	Amaranthaceae	Um Hreera
25.	<i>Dinebra retroflexa</i> (Vahl.) Panz	Poaceae	Um mamlaiha

26.	<i>Echinochloa colonum</i> (L.) link	Poaceae	Defae
27.	<i>Echinocloa pyramidalis</i> (Lam)	Poaceae	Um chir
28.	<i>Sporobolus pyramidatus</i> (Lam.)	Poaceae	Aish elfar
29.	<i>Eragrostis megastachya</i> (Koel.) Link	Poaceae	Aish elsimber – Bano
30.	<i>Eriochloa nubica</i> (Stude.) Hack. And stapf. ex thell.	Poaceae	Melaisa
31.	<i>Euphorbia acalyphoides</i> Hochst. ex Bioss	Euphorbiaceae	Um alabana
32.	<i>Euphorbia aegyptiaca</i> Bioss	Euphorbiaceae	Um lebaina
33.	<i>Helieotroium sudanicum</i> F.W. Ander.	Boaginaceae	Danab elagrab
34.	<i>Indigofera oblongifolia</i> Forsk.	Fabaceae	Dhaseer
35.	<i>Indogofira pilosa</i> Poir.	Fabaceae	Babon
36.	<i>Ipomoea aquatic</i> Forsk.	Convolvulaceae	Arkla
37.	<i>Ipomoea cordofana</i> Choisy.	Convolvulaceae	Taber
38.	<i>Ipomoea sinensis</i> (Desr.) Coisy.	Convolvulaceae	Hantoot
39.	<i>Justicia palustris</i> (Hochst.) T. Anders.	Acanthaceae	Fakha
40.	<i>Merremia emarginata</i> (Burm.f.) Hallierf	Convolvulaceae	Deriea- Metaet
41.	<i>Ocimum basilicum</i> L.	Lamiaceae	Raihan
42.	<i>Oxygonum atriplicifolium</i> (Meisn.) Martelli	Polygonaceae	Abu Khameira
43.	<i>Panicum repens</i> (L.)	Poaceae	Bano
44.	<i>Penisetum pedicellatum</i> (Trin)	Poaceae	Balang
45.	<i>Pennistum purpureum</i> Schumach.	Poaceae	Danab Kaleb
46.	<i>Phyllanthus madraspatensis</i> L.	Euphorbiaceae	Um regaiga
47.	<i>Phyllonthus niruri</i> L.	Euphorbiaceae	Um baleela
48.	<i>Physalis angulate</i> (L.)	Solanaceae`	Karm karm

49.	<i>Rhynchosia memnonia</i> (Del.) Cooke.	Fabaceae	Erg Eldam
50.	<i>Rottboella cochichinensis</i>	Poaceae	Razza
51.	<i>Sesbania arabica</i> Steud.. & Hochst.	Fabaceae	Soreeb
52.	<i>Sesbania pachycarpa</i> DC.	Fabaceae	Soreeb elfaki
53.	<i>Sida alba</i> (L.)	Malvaceae	Um shedaida
54.	<i>Solanum dubium</i> Fresen.	Solanaceae`	Jobain
55.	<i>Soncuchus cornutes</i> (Forssk.) cass.	Asteraceae	Molaita
56.	<i>Sorghum arundinaceum</i> (Dew.) stapf	Poaceae	Adar
57.	<i>Srtiga hermothica</i> (Del.) Benth.	Scrophulariaceae	Booda
58.	<i>Thunbergia annua</i> ex Nees.	Acanthaceae	Um rekaibat
59.	<i>Trianthema portulacastum</i> L.	Aizoaceae	Raba'a
60.	<i>Tribulus terrestris</i> L.	Zygophyllaceae	Deraisa
61.	<i>Vernonia amygdalina</i>	Asteraceae	Abu Morua
62.	<i>Withania somnifra</i> (L.) Dunal.	Solanaceae`	Shar elfagri

### Key species in the study area

The vegetation of Elsuki area was described as part of the vegetation zones of Sudan by Anderws (1948), Smith (1949), Harrison and Jackson (1958), Noordwijk (1984), and Wickens (1991). According to trees shrubs and herbs interaction in the study area, the dominant tree species were *Acacia nilotica* (L.) Willd. ex Del, *Acacia senegal* (L.) Will, *Acacia seyal* Del. *Ziziphus spina chiristi* (L.) Willd and *Balanites aegyptiaca*. The most shrub species were *Acacia mellifera* (Vahl) Benth, *Acacia oreofota* (Forssk.) Schweinf, *Capparis decidua* (forsk.), and *Grewia tenax* (Forsk.) Fiori. Associated herbs were *Commelina amplexicaulis* Hassk, *Commelina kotschyi* , *Cassia occidentalis* , *Sporobolus pyramidatus* (Lam.), Hitchc, and *Justicia palustris* (Hochst.) T. Anderson. Musa et al ,2012 reported that, analysis of data based on their habitat showed that trees accounted

highest proportion (60%) followed by herbs (25%), shrubs (13%) and parasites (2%). All medicinal plants are collected from the wild and only 26% of them are also cultivated in home gardens.

## Conclusion

The current study documented for 85 common plant species, belonging to 68 genera and 35 families at Elsuki area. In addition some species considered as very important plant species were described. Majority of these species have economic value, providing fodder to the livestock. The dominant annual herbs were *Commelina amplexicaulis*, *Justicia palustris* and *Phyllonthus niruri*. The dominant woody species were *Balanites aegyptica* and *Capparis decidua*. It is to be concluded that, *Commelina amplexicaulis*, as common species throughout the study area with *Sporobolus pyramidatus* from herbs, *Acacia oreofota* from shrubs and *Acacia seyal* with *Acacia nilotica* and *Balanites aegyptica* from trees are common throughout the study area as ecological associates, because they showed high abundances, frequency and density in both seasons.

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