

Keywords: Abundance of weed; Frequency; Major crops; Weed ora; Similarity index.

Introduction

Weeds are plants that interfere with the objectives and requirements of man (Steven, 1984). Weeds are genetically diverse and can readily take advantage of the variety of conditions created by any give crop production system. is is primarily due to their ability to produce a large quantity of viable seeds (if it is an annual) or vegetative tissues such as rhizomes (if it is a perennial) in a single growing season Weed serve as alternate and alternative for pest organisms that adversely a ect crop production system [1]. e degree of yield loss due to weeds crop depends on the species' competitive ability, relative growth height, time of emergence (relative to the crop), leaf area, vegetative

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 Y^^å F][!æ -![{ Mæjor Crops at Borana and Y^●c G[×]lå Z[}^●, Ù[[×]c@^!} Ec@i[]iæ.

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Copyright: © 2023 Kitaba K, et al. V0i• i• æ} []^}-æ&&^•• æ\d&|^ åi•clià`c^å`}å^\ c0^ c^\ {• [- c0^ C!^æciç^ C[{ { [}• Acclià`ci[} Li&^}•^, _0i&0]^\ {ic• `}!^•cli&c^å `•^, åi•clià`ci[}, æ}å !^]![å`&d[} i} æ}^ { ^åi` {,]![çiå^å c0^ [li*i}æ|æ`c0[! æ}å •[`!&^ æ!^ &!^åi^å. more favorable living entities, but unlike the other districts found in these zones Bule Hora has di erent agro climatic conditions which tends to mid highland and has a long rainy season than the others. Geographically they fall under an elevation of 1356masl to 1874masl for Borana, and 1422-2328masl for west Guji. Speci cally, by districts the altitude range of the surveyed area are as follows Yabello 1490-1800masl, Teltelle 1356-1460masl, Abaya 1422-1460masl and Bule Hora 1860-2328masl [9].

Assessment methods

e survey was done in four districts above listed zones and the districts were selected purposively based on potential of crop they produce. Fields were assessed with the distance of about 3-5KM apart accordingly i.e. based on crop abundance. But, the assessed eld for each crop was not equal, for instance for common bean about 113 elds, for maize 94 and for Te 89 elds were assessed. GPS was used during the assessment for the purpose of geographical data such as elevation, latitude and longitude, distance and area of the survey areas. Also, 1m² quadrat was used during the survey to take sample from the elds and the sampling was done in diagonal pattern in each eld. During the survey the producers/farmers were interviewed for source of seed they use, cropping pattern, input used for the crop and sowing date (early or late), presence or absence of the weed in the previous cropping year or season. Weed species compositions frequency (F), abundance (A), dominance (D) and similarity index (SI) were summarized using the formula.

Frequency (constancy): Is the percentage of sampling plots (vegetation registrations) on which a particular weed species is found. It explains as how o en a weed species occurs in the survey area. Frequency is calculated for all weed species as follows.

 $F{=}100^{*}X/N;$ Where $F{=}$ frequency, $X{=}number$ of weed species occurrences, $N{=}$ sample number

Similarity index/Community index is the similarity of weed communities between di erent locations or crop types.

Similarity index=SI = 100*Epg/ (Epg + Epa + Epb)

Where, SI = Similarity index; Epg = number of species found in both locations; Epa = number of species found in location I; Epb = number of species found in locations II

Data analysis

All collected data were feed into computer and managed by using Excel and lastly the data was analyzed using IBM SPSS Statistics 20.

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Botanical Name	Family	Category	Life Cycle	Frequency	Abundance	Dominance
Amaranths hybrids	compositeae	Broad leaf	Annual	13	2.15	9.57
A¦*^{ [} M^¢i&æ}æ	Pæ]æç^¦æ&^æ^	G¦æ∙∙	Annual	6	1.36	6.05
Båå^}∙]å [∙æ L.	Asteraceae	Broad leaf	Annual	9	3.12	13.91
C[{ { ^ i}æà^}*@æ ^}•i• L.	Commelinaceae	Broad leaf	Annual	5	1.14	5.08
C^}[å[} åæ&c^ [} (L.) P^¦•.	Poaceace	G¦æ∙∙	Perennial	18	4.56	20.31
C^]¦≚• ^•&≚ ^}cæ L.	Cyperaceae	Ù^å*^	Perennial	4	1.36	6.05
Dæcĭ¦æ ∙c¦æ { [}åĭ { L.	Ù[æ}æ&^æ^	Broad leaf	Annual	4	0.83	3.71
Gæ å}•[*æ]æ¦çå'[¦æ(Cæç.)	Asteraceae	Broad leaf	Annual	2	0.7	3.13
Gči:[ciæ•&æà¦æ	composite	Broad leaf	Annual	1	0.09	0.39
Ni&æ}妿]@^∙æ [å^∙ (L.) Gæ^¦₀}.	Ù[æ}æ&^æ^	Broad leaf	Annual	3	0.22	0.98
Parthnium hysterophus	Asteraceae	Broad leaf	Annual	2	0.18	0.78

 $\label{eq:table 2: Mab[{,^^a \bullet}]^{a} \cdot [a^{a}, a^{a}] & [{ { [} a^{a}, a^{a}] } . a^{a} \cdot [a^{a}, a^{a}] & [{ { [} a^{a}, a^{a}] } . a^{a} \cdot [a^{a}, a^{a}] & [{ { [} a^{a}, a^{a}] } . a^{a} \cdot [a^{a}, a^{a}] & [{ { [} a^{a}, a^{a}] } . a^{a} \cdot [a^{a}, a^{a}] & [{ { [} a^{a}, a^{a}] } . a^{a} \cdot [a^{a}, a^{a}] & [{ { [} a^{a}, a^{a}] } . a^{a} \cdot [a^{a}, a^{a}] & [{ { [} a^{a}, a^{a}] } . a^{a} \cdot [a^{a}, a^{a}] & [{ { [} a^{a}, a^{a}] } . a^{a} \cdot [a^{a}, a^{a}] & [{ { [} a^{a}, a^{a}] } & [{ { [} a^{a}, a^{a}] } . a^{a} \cdot [a^{a}, a^{a}] & [{ { [} a^{a}, a^{a}] } & [{ { [} a^{a}, a^{a}] & [{ { [} a^{a}, a^{a}] } & [{ { [} a^{a}, a^{a}] & [{ { [} a^{a}, a^{a}] & [{ { [} a^{a}, a^{a}] & []$

Districts	Abaya	Bule Hora	Taltalle	Yaballo
Abaya	100	28.57	38.46	42,.61
Bĭ ^H[¦æ		100	15.38	34.78
Teltalle			100	80

S/N	Weed fora Family	No. of Species	
1	Compossiteae	2	
2	Pæ]æç^¦æ&^æ^	1	
3	Asteraceae	6	
4	Commelinaceae	1	
5	Poaceace	6	
6	Cyperaceae	1	
7	Ù[æ}æ&^æ^	3	
8	L^*	1	
	Total	21	

e result of this assessment also showed that, broad leaf weed species are the most dominant over grass and sedge weed species Table 5. Among a total of 21 weed species of maize eld's broad leaf weeds accounts about 52.17% of the total weed species identi ed, while grass types and sedge types hold about 34.78% and 13.04% respectively out of the total (Table 5).

e similarity Index of weed recorded from maize elds over the districts

e Similarity Index result of the weed species recorded from maize eld across the districts indicates Yaballo and Teltalle districts have similar weed species similarity index ranged from 72.22%-80, in terms of species composition than at mid land agro-climatic condition of Bule Hora &Abaya districts (Table 6). e other reasons could be similar soil properties, tillage operations and weed management practices adopted [10]. erefore, for these districts in area where maize is cultivated similar management methods can be designed to overcome the e ect of weed on maize production. At mid land agro-

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climatic condition of Bule Hora, dissimilar with any of other districts, their similarity index raged from 46.66%-57.89 and below 60%. Weed growth, population density and distribution vary from place to place depending upon altitude, soil and climatic factors that a ect the weed ora, and farmers' management practices [11] (Table 6).

Major Weed ora recorded from Te elds

In Te elds about 21 oras of weed species which grouped under 7 families of the weeds were identi ed from four districts, where the survey was conducted (Table 7). e result from this assessment showed that, broad leaf weeds were the dominant the other weed species. Among a total of 21 weed species of farm elds' 54.55% broad leaf, 27.27% grass types and 18.18% sedge types (Table7-8).

e similarity Index of weed recordm Te(v&d(he)#he ide(il())()())

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Dis Abaya	Bule Hora	Teltalle	Yaballo	Yaballo
Abaya				