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PRELIMINARY STUDIES ON THE DISTRIBUTION OF MAIZE WEEDS OF ABBOTTABAD AND HARIPUR (NWFP)

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Abstract

Studies on maize weeds of Abbottabad and Haripur were conducted during 1987 - 1988. A total of 60 weeds species belonging to 50 genera and 23 families were recorded from the area. Out of these 33 species (55%) were of large distribution and 45% were of scanty distribution. Xanthium strumarium was found most abundant.

Key Words: Zea mays; Weeds; Haripur.

Introduction

Weeds have a peculiar capacity for survival under a variety of environmental conditions. The efficiency of some weeds in spreading both vegetatively and by seed is a vital factor in their ability to infest new areas. Dormancy or the suspension of growth for extended periods of time enables weed seeds to remain inactive for many years and germinate when favourable season comes. Also, weeds have developed a variety of special adaptations to disseminate their weeds.

Area studies consisted of Abbottabad and Haripur which are part, of Hazara Division of NWFP and its altitude ranges between 450- 1400 m. elevation above sea level. It lies between 33 and 34 north latitude and 72 to 74 east longitude. It is bounded in the north by Mansehra district and in the south Rawalpindi - Islamabad districts. In the east lies Swabi district while Azad Kashmir is in the west. The climate of the area is variable due to variation in physio-geographical conditions and falls under two climatic regions i.e. The Semi-arid warm sub-tropical winter/monsoon region which lies between an altitude of 450 and 800 m. elevation comprises Ghazi, Derwaish, Haripur proper, Serai Saleh, Baldhair, Sultan pur, Havelian and Khota Qabar. Climax vegetation found is dry sub-tropical winter broad leaved thorn mixed forest (Champion et. al. 1985).

The humid moderately cool sub-tropical region (R2) lies between an altitude of 900 to 1,400 m. above sea level and consists of Salhad, Abbottabad proper, Madian, Mirpur, Nawansher, Dhamtor and Thai.

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Although taxonomic studies on weeds of these areas have been conducted by some research workers in the past but unfortunately no published information exits on the distribution of maize weeds of Abbottabad and Haripur. Thus, the present studies were carried out for the first time to record an accurate picture of the distribution of maize weeds from the study area.

Material and Methods

Extensive survey for seasonal collection of maize weeds from sixteen randomly selected maize fields of Abbottabad and Haripur (i.e. Qalanderabad, Mandian, Dhamtor, Thai, Salhad, Mirpur, Abbottabad proper, Nawanshehr, Khota Qabar, Havelian, Baldher, Sultan Pur, Sarai Saleh, Haripur proper, Derwash Ghazi) was carried out during 1987-88.

During weeds collection other basic information about individual weeds like habitat, altitude, occurrence etc. were also recorded. The collected specimens were identified with the help of Flora of Pakistan (Fascicle series 1 - 186) edited by Nasir. E. and Ali S.I., 1970-1986. Abedin 1979, Abedin and Ghaffar 1976, Ali, 1977, Champion et al 1965, Cope, 1982)

Abbreviations used: P= Present, - = Absent; c= Common; R= Rare; VR = Very F= Frequent; MF = Most Frequent; R1 = Semiarid sub-tropical region; R2 = Humid moderately cool sub-tropical monsoon region.

Results and Discussion

According to orographic data analysis it is concluded that out of total 60 weed species belonging to 50 genera and 23 families recorded from the study area, 10 species (16.67%) were collected from R1 region (Semiarid sub-tropical) in fields of localities like Ghazi, Sarai saleh, Baldher and Havelian. Out of these 4 weeds were collected from 450 to 900 m. and 6 weeds were found between 450m. to 900 m. altitudinal range while 27 weed species (45%)were recorded from R2 region (Humid moderately cool sub-tropical monsoon region) in localities like Thai, Mandian, Nawanshehr and Khotaqabar both in R1 i.e. Semi-arid sub-tropical regions like Ghazi, Haripur, Sarai salah and Baldher and in R2 i.e. Humid moderately cool sub-tropical monsoon region of localities like Nawan shehr, Thai and Mandian. During the survey it was observed that *Xanthium strumarium* was most abundant (Table 1-3).

On the basis of data collected distribution of maize weeds is explained and summarized in tabulated form that are present in R1 followed by the ones in R2 only and those found in both regions i.e. R1 and R2 and within each region in order altitudinal range. Detail is as under:

Table 1. Distribution of maize weeds in R1 i.e. = Semiarid sub-tropical region.

S.No.	Weed Species	Frequency
a. Between 450-600 m. altitudinal range.		
1.	*Heliotropium europaeum*	R
2.	*Melhania futteyporensis*	C
3.	*Salvia plebia*	C
4.	*Trianthema portulacastrum*	C
b. Between 450-900 m. altitudinal range.		
1.	*Aerva lanata*	C
2.	*Brachiaria reptans*	C
3.	*Bromus sp.*	C
4.	*Chenopodium ambrosioides*	F
5.	*Chrozophora tinctoria*	C
6.	*Conyza bonariensis*	F

Table 2. Distribution of maize weeds in R2 i.e. Humid moderately cool sub-tropical monsoon region

S.No.	Weed Species	Frequency
a. Between 900 - 1400 m. altitudinal range.		
1.	*Saccharum spontaneum*	R
2.	*Sesbania sesban*	C
3.	*Oenothera rosea*	C
4.	*Paspalum distichum*	R
5.	*Setaria glauca*	F
6.	*Solanum nigrum*	C
7.	*Physalis minima*	R
8.	*Xanthium strumarium*	MF
b. Between 1100 - 1400 m. altitudinal range.		
9.	*Corchorus oligaeus*	C
10.	*C. tridens*	C
11.	*Eclipta prostrata*	C
12.	*Plantago lanceolata*	F
13.	*Galinsoga parviflora*	V.R
14.	*Galdbachia verrucosa*	R
15.	*Hibiscus trionum*	C
16.	*Ipomoea purpurea*	C
17.	*Lycopus europaeus*	R
18.	*Momordica dioica*	C
19.	*Ranunculus laetus*	C
20.	*Vigna dalzelliana*	R
21.	*Commelina bengalensis*	C
22.	*C. paludosa*	R
23.	*Corallocarpus epigaeus*	R
24.	*Conyza stricta*	C
25.	*Cyperus difformis*	C
26.	*C. tridens*	C
27.	*Digitaria nodosa*	C

Table 3. Distribution of weeds in R1 i.e. Semiarid sub-tropical region and R2 i.e. Humid moderately cool sub-tropical monsoon region.

S.No.	Weed Species	Frequency
a.	**Between 450-1350 m. altitudinal range.**	
1.	*Polygonum plebejum* sp	C
2.	*Eragrostris papposa*	F
3.	*Acranche racemosa*	C
4.	*Amaranthus hybridus*	C
5.	*A. spinosus*	C
6.	*A. viridus*	C
7.	*Avena fatua*	C
8.	*Bidens biternata*	F
9.	*Brachiaria romosa*	C
10.	*Convolvulus arvensis*	C
11.	*Celosia argentea*	C
12.	*Digitaria nodosa*	C
13.	*Euphorbia hirta*	C
14.	*E. indica*	C
15.	*E. indica*	C
16.	*Eleusine indica*	C
17.	*E. prostrata*	F
18.	*Justicia peploides*	C
19.	*Mentha longifolia*	C
20.	*Oxalis corniculata*	R
21.	*Verbena officinalis*	R
22.	*Phragmites australis*	R
23.	*Polygonum plejum sp*	C

It is concluded that weed species were found varying from not only one region to another region but also from field to field i.e. within due to the Variation in altitude, soil and the quantity of water available and degree of exposure of the field to the sun and other microclimatic differences.

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