STUDIES ON THE SUGARCNE WEEDS : WEEDS OF SUGARCANE RESEARCH INSTITUTE FARM

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SUMMARY

Weeds are serious problem to sugarcane. For effective weed control, thorough study of the weeds are needed. Hence, during 1976-77, the weeds found in Sugarcane Research Institute farm were surveyed and 32weeds were collected, identified and described. Most of the weeds were annuals but some were perennials. The climax infestation period was found to range between November and April. One parasitic Kharif annual, **Striga densiflora** was also identified.

INTRODUCTION

Weeds are serious problem wherever they occur on sugarcane field and the competition between weed and crop is often in favour of the weed due to poor crop condition. The loss of crop due to weed infestations in India has been reported to vary from 5 to 50% depending upon the level of crop and soil management (Anon, 1970 and Ethirajan **et al.**, 1976). Under labour-intensive cropping system, the most common weed control methods is hand weeding. Chemical weed control has been found suitable under labour constraint conditions and in plantation crops like sugarcane (Arakeri **et al.** 1962; Muzik, 1970: Crafts, 1967 and Parker and Frayer 1975). For successful weed control programme either cultural, mechanical or chemical, a thorough knowledge on the life cycle, taxonomy, crop association and other relevant factors are quite obvious as particular method of weed control is effective only at a definite stage of growth and environmental conditions surrounding the weeds.

To acquire a comprehensive idea on various aspects of weeds that are found to grow in association with sugarcane, a survey was carried out during 1976-77 in the Sugarcane Research Institute farm, Ishurdi.

METHODS AND MATERIALS

During the survey, the weeds found in sugarcane fields were collected and identified following the standard taxonomical classifications. In addition, life cycle-time of emergence, reproduction and senescence, leaf type-broad or narrow, weed infestation intensity in relation to cropping season were also studied.

RESULTS AND DISCUSSION

During the survey 32 weeds were collected and described (Table I). Most of them were annuals although some perennials also did exist. Both broad and narrow leaf type weeds could be identified indicating a diverse scope of chemical control. The annuals appeared during both kharif and rabi seasons but the rabi annuals were more prevalent than the kharif ones. The perennials existed all throughout the year. The annuals reproduced through seeds but the perennials mostly through vegetative parts. The climax infestation period ranged between November and April suggesting that the sugarcane seedlings are most vulnerable to weed attack.

Beside the non-parasitic weeds described above, parasitic weed, **Striga densiflora** L., had been identified. This weed was found to establish parasitic relationship with sugarcane by ramification of its roots into those of sugarcane and forming haustoria. This is a narrow leaf weed found to infest during kharif season when sugarcane starts boom growth period.

The identied weeds are listed in Table I giving their agronmoic attributes.

REFERENCES

Anon. 1970. **New vistas in crop yield.** An Agricultural Year Book published by the Indian Agricultural Research Council, New Delhi.

Arakeri, M. R., G W. Chalam, P. Sotyanarayana and R. L. Donahue. 1962. **Soil Management in India.** Asia publishing House, India.

Crafts, A. S. 1967. **The chemistry and mode of action of herbicides.** Inter science publishers. Inc. New York.

Ethirayan, A. S., P. N. Chowdhury and A. Misra. 1976. Studies on weed control in sugarcane. Cane Growers' Bulletin, 3(3) : 1-4.

Mukherjee, H, 1972. **Plant groups.** Books and Allied Private Ltd. 8/1 Chintamoni Das Lane, Calcutta-9.

Muzik, T. J. 1970. **Weed Biology and Control.** McGraw-Hill Publishing Co., Inc., New York.

Parker, C and J. W. Frayer, 1975. Weed problems causing major reductions in food supplies. FAO Plant Protection Bulletin.

Table-1 List of weeds found in sugarcane field and their agronomic attributes.

Sl. No.	Name	Family	Life cycle				Leafs type & character	Climax infestation	Cropping season index
			Emergence	Reproduction	Senescene	Type			
1.	**Chrysopogoa aciculetus** (Retz) Trin. Premkata (B)** Love thorn (E)***	Graminae	February-March	June-July	—	Perennial	Narrow; Leaves alternate, Leaf blade linear, spikelets sessile harmaphorodite, Root fibrous.	March-April	KR*
2.	**Imperata cylindrica** Ulu (B)	,,	November-December	—	—	Perennial	Narrow; Stems erect, slender and 8-16 in tall with creeping rhizome.	January-April	KR
3.	**Saccharum spontaneum** Lin. Kansh (B)	,,	October-November	—	—	Perennial	Narrow	December-March	KR
4.	Cynocon dactylon (L) Pers. Bermuda grass (E) Durba ghas (B)	,,	All seasons	—	—	Perennial	Narrow; It is widely spreading by stolon and rhizomes and forming mats. There are 3-5 spikes radiating from the top of the culm.	November-April	KR
5.	**Elusine indica** Gose grass (E) Chapra (B)	,,	November-December	—	—	Annual	Narrow; Leaf-heath flattened. Leaf-blade smooth. Stems pross trate and grow in tufts.	January-March.	R
6.	**Cyperus rotandus** Nutgrass (E) Mutha (B)	,,	All season	—	—	Perennial	Narrow; Stem triangular and and erect Numerous small tubers come out from the rhizome. Inflorecence umbel and composed of 3-7 rap.	November-April	RK
7.	**Colocasia esculanta** Kachu (B)	Cyperaceae	March-April	—	—	Perennial	Borad	May-July	K
8.	**Chenopodium album** Lamb's-quarter (E) Bathua (B)	Chenopodiaceae	November-December	February-March	April	Annual	Narrow; alternate, simple, ovate to lanceolate, Stem erect and branched. Seeds lens-shapedshiny black & smooth.	January-February	R
9.	**Mimlso pudica** L. Lajjabati (B)	Leguminoceae	—	—	—	Annual	Narrow	February-March	RK
10.	**Vicia hirsuta** Mashurchana (B)	Leguminoceae	October-November	February-March	March-April	Annual	Narrow	January-February	R
11.	**Cassia tora** Sickle pod (E)	,,	October-November	March-April	April	Annual	Broad pinnately compound usually with six opposite, smooth & paired leafiets. Flowers are yellow in colour. The seeds are rhomboidal and shin brown.	December-March	R
12.	**Crotolaria striata** Stripped rotolaria (E)	,,	,,	,,	—	Annual	Broad; The leaves are trifoliate with ovateoblong leaflets. Stem erect. Root is a taproot.	December March	R
13.	**Jussiaea decurrens** Panimarich (B)	Onagraceae	—	—	—	Annual	Narrow; simple alternate, stem erect, gibrous, 4 angled 10-40 inch high.	January-March.	R
14.	**Hydrocotyl asiatica** Thankuni (B)	Umbelliferae	—	—	—	Perennial	Broad; stem prostrate, creeping and slender having nodes and internodes and about 30 inch long	Monsoon	RK
15.	**Ipmea aquatica** Kalmishak (B)	Convolvulaceae	—	—	—	Annual	Broad; alternate, simple, elliptic-oblong and acute. Stem hollow having nodes and internoces. Flower funnel shaped.	Monsoon	RK

*K—Kharif
R—Rabi

**B—Bengali synonym
***E— English synonym

Table-1 (Contd.)

Sl. No.	Name	Family	Life cycle				Leaf type & character	Climax infestation period	Cropping season index
			Emergence	Reproduction	Senescene	Type			
16.	**Gnaphalium lutea-album** Shweta Lumi (B)	Composiate	—	November-February	—	Annual	Broad; leaves entire, oblong, spatulate and sessile.	November-December	R
17.	**Solanum torvum** Titabegun (B)	Solanaceae	—	—	—	Annual	Broad; simple, alternate petiolate. Fruit a many seeded black-berry.	November-March	R
18.	**Physalis angulata** Futki (B)	Solanaceae	—	—	—	Annual	Broad; leaves alternate, smooth and ovate with irregular margin.	November-March	R
19.	**Solanum nigrum** Gurki (B)	Solanaceae	—	—	—	Annual	Leaves Broad and irregularly toothed alternate simple and ovate.	February-May	RK
20.	**Xanthium italicum** Gyara (B)	Solanaceae	—	—	—	Annual	Broad leaved, fruit spinoks.	February-April	RK
21.	**Leucas aspera** Setodron (B)	Solanaceae	—	—	—	Annual	Narrow	November-March	R
22.	**Solanum mauritianum** Wild Tobacco (E)	Solanaceae	—	—	—	Annual	Broad	November-March	R
23.	**Amaranthus spinosus** Katanatey (B)	Amaranthaceae	—	—	—	Annual	Broad; leaves alternate & petiolate Stem erect glabrous and branches above. Flowers in a long slender spikes, crowded in a close terminal, panicle seeds small, lens shaped glabrous and black.	November-February	R
24.	**Amaranthus viridis** Shaknatey (B)	Amaranthaceae	—	—	—	Annual herb.	Broad; leaves alternate with long petioles, broadly ovate or rhomic ovate. Stem erect branches above	November-February	R
25.	**Marsilea quadrifolia** Shushnishak (B)	Marsileaceae	—	—	–	Annual	Broad; leaves petiolate and projecting above. Leaflets 4, sessile, obdeltoid and glarnous. It propagates by vegetative means.	November-February	R
26.	**Borreria laevis** Dudhia (E)	Rubiaceae	—	—		Annual herb.	The leaves are oblong to oval lanceolate, sessile, opposite and 2-4 cm. long.	Rabi-season	R
27.	**Portulaca oleracea** Nunia (B)	Portulaceae	—	—	—	Annual herb.	Narrow; It bears alternate to nearly oppoite leaves which are often found in clusters at the end branches. Leaves are thick, sessile and ovate with broad-rounded tips and smooth margins and are 2-4 cm. long.	Rabi	R
28.	**Curcumis melo** Telkucha (B)	Cucurbitaceae	—	—	—	Annual	Broad: leves are kidney shaped, alternate and petiolate. Stem is a pubescent and spiny vines.	Rabi	R
29.	**Argemone mexicana** Prickly poppy (E) Shial kantha (B)	Papaveraceae	—	—	—	Annual herbaceous plant.	Broad; leaves are coarse, deeply lobad, irregularly toothed and prickly. The terminal flowers are bright yellow in colour. It has a characteristic yellow sap.	Rabi	R
30.	**Striga densiflora** Bijlee ghas (B) Witch weed (E)	Scrophulariaceae	—	—	—	Annual	Narrow	May-October	K
31.	**Convolvulus arvensis**	Convulvulaceae	—	—	—	Annual	Broad	May-Dec.	RK
32.	**Ipomea plebeia** Bell vine (E)	Convulvulaceae	—	—	—	Annual	Broad	May-Dec.	RK