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Study of weed plants and their control

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A weed is the more aggressive, useless plant growing out of place which interferes with the crops especially the utilization of land and water resources and thus adversely affect human welfare. The weeds have the most widespread direct and detrimental influences on the growth of desired crop plants by way of competition for space, moisture and nutrients and thus greatly affect the yield of the crop. The weeds grow in and around agricultural fields cause enormous losses to the crop plants. 203 weeds growing in the main crops like rice, sugarcane, jowar, wheat, vegetables, mango, chikoo and banana orchards of 38 villages of Valsad district. The traditional methos of their management has been discussed.

According to Beal (1910) "A weed is a plant out of place", Farmers Bulletin (1915), Development of agriculture, USA defines weed as a wild plant that has habit of intruding. According to Brenchely (1920) weed is a plant that grows so luxuriantly that it chocks out of all other plants that possess more valuable nutritive properties. Oxford English Dictionary (1933) defines weed as a herbaceous plant not valued for use or beauty, growing wild and regarded as cumbering the ground or hindering the growth of superior vegetation. Bailey and Bailey (1941) pointed out that a weed is an unwanted plant and therefore it is to be destroyed. Salisbury (1942), Webster (1948), Muenscher (1949) have given similar definition - "A weed is a plant out of place."

Valsad district is a southern part of the Gujarat state about 194 km. The area consists of hills and plain lands. The present investigation is an attempt to record the available weed plant of Valsad district. The floristic study was conducted in Valsad district during May 2007 to September 2008. Thirty eight villages have been explored for the present study. A total of about 203 weed taxa growing in the different crops of the area. Customary methods were employed for field and laboratory work. The nomenclature has been brought up to date in accordance with current researches and rules of International Codes of Botanical nomenclature (1972). Some of the important literatures were also consulted for proper and correct indentification of weed plant species (Brenchley, 1920; Cooke, 1908; More, 1954, 1972; Raghavan *et al.*, 1981 and Christie, 1992).

The paper embodies the results of research work carried out for a period of one and half year (May 2007 to September 2008). During the survey, a total of 203 weed angiosperm plant species were reported.

The chief objective of weed control is to encourage the growth of useful plants to mankind at the right place and time, limiting the growth of unwanted or undesirable species.

The common methods of weed control are used by tribes of Valsad district as under:

Physical:

Physical control of weeds is as old as agriculture itself. The methods involve in physical control are most practical, effective oldest and are used even today. The physical control of weeds are safe to crop, environment and to the user. The implements used for the physical control of weeds vary from simple hand tools to specially designed tractor drawn mutinied weeding machines. The physical methods of weed control are distinguished as (I) Manual and (II) Mechanical methods. The manual method of weed control includes hand pulling and hand weeding. It is a labour intensive, tiresome and slow process. It can be succeeded when it is practiced in time, particularly when weeds are still young. Simple type of hand tools like fork, sharp blades, sickles, pickaxes and spades etc. are used. The farmer does not require having special skills in using these tools. The implements used in mechanical weeding are animal drawn horse hoe, harrow etc. and tractor drown cultivators, harrows, rotary hoes, weeding blades, finger weeders etc. This method is useful in tilling the land and destroying the weeds.

Ecological:

This includes plantation of proper crops at proper time, applying suitable method, application of adequate fertilizers, improvement of soil, seed bed management that help the crop seeds germination prior to weeds, crop rotations etc.