

**RESEARCH ARTICLE****PRESENT SENIOR OF WEED MANAGEMENT IN MAIZE****PRITAM O. BHUTADA**<sup>1</sup>JRF, SAC, ISRO AHMEDABAD-380015***Manuscript Info******Abstract******Manuscript History:***

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***Key words:******\*Corresponding Author*****PRITAM O. BHUTADA***Copy Right, IJAR, 2015,. All rights reserved***INTRODUCTION**

Maize (*Zea mays* L.) is an important cereal crop of India. It is grown for fodder as well as for grain purpose. The grains of maize are used in a variety of ways by the human beings. Recently, with the release of improved cultivars and hybrids, the grain yield has been increased but still the maize crop faces many problems. Farmers usually give prime importance to few cultural practices and neglect other factors like seed rate and weed control. As the maize is usually grown during the months of May, June and August, when manual method of weed control is difficult to imply therefore, other methods of weed control are more feasible, less laborious, cost effective and economical. Several weed species that are strong competitors, compete with the maize crop and thus the yield is decreased.

**NEED OF INTEGRATED WEED MANAGEMENT IN MAIZE**

Weed management strategies attempt to limit the deleterious effects of weeds growing with crop plants. These effects could be quite variable, but the most common is competition for available resources. The quantities of growth factors used by weeds are thus unavailable to the crop. On the other hand, the perennial weeds like *Cyperus rotundus* and *Cynodon dactylon* which are among the worst weeds of the world, infest the maize crop and thus increase the cost of production, as hand weeding is not effective against these weeds. Presence of weeds in maize crop decreases the yield drastically. Malik et al. (2006) reported that herbicides proved effective in controlling weeds and produced relatively more weight of cobs, number of grains cob-1, 1000-grain weight, biological yield and grain yield. Similarly plant population and row spacing also affect the weed population. Harvey et al. (1997) reported that it is logical to expect that weed management should improve if the row spacing of corn is narrow. These results supports the results of many researchers that plant population per unit area and herbicide use in corn increase the maize yield. In a similar study, Khan et al. (2002) reported that chemical weed control as well as hand weeding significantly increased the grain yield of maize.

As there are limitations of every weed control method therefore integrated weed management is a good option for sustainable agriculture. It involves the combination of all the possible methods to suppress the weeds below economic threshold level. Although some methods are effective against weeds but they prove uneconomical for the farmers or pose environmental hazards. Weeds compete with corn for light, nutrients, and water, especially during the first 3 to 5 weeks following emergence of the crop. It is important to control weeds in a corn field before they are 6 to 8 inches high, which is when they begin to impact corn yields. Late-season weed infestations do not reduce corn yield nearly as much as early weed competition; however, weeds at this time can harbor destructive insect pests such as thrips, which can vector Fusarium ear rot, and armyworms, which can defoliate corn. Weeds also reduce silage feed quality, slow harvesters by causing wheel slippage or clogging, raise grain moisture content, and provide a seed source to infest subsequent crops. Removing fully grown weeds normally requires more time and labour than removing seedlings.

Late weeding results in crop losses, especially if it is carried out after the critical period of weed competition. Maize can withstand weed competition for 3–4 weeks early in the growing season and weeds that emerge at 6–9 weeks after planting (WAP) do not cause significant maize yield losses. Weeding maize after the critical period of weed removal can result in up to 83% losses in grain yield (Usman et al., 2001). Crop yield loss could be caused in high extent by increase in the weed biomass, weed density and weed species (Blackshaw et al., 2002). Weeds are one of the greatest limiting factors to efficient crop production. As a consequence of structural and financing problems the cultural condition of the soil deteriorates and weeds proliferate; many species are hard to kill (Farkas, 2006). Weed infestation, results in severe reduction in crop yield as in the condition of pure corn culture, corn losses of 40–60% have been reported (Thobatsi, 2009). Today weed control is performed by a very advanced technology and knowledge control operations properly require thorough knowledge of plants, soil crop management system and many environmental parameters associated with weed control operations (Bolandi Amoghein et al., 2013).

A factor that is currently used as an index for evaluation of crop management in each country or even each field is the amount of attention on weed management. Choice of this index is for reason that in the case of the absence of a correct management damage caused by these weeds is more than the damage caused by infestation and disease (Gupta, 2006). Environmental pollution and contamination of surface water and groundwater by herbicides is one of the most important human concerns (Abdin et al., 2000). The most commonly used alternative methods rather than herbicides and plowed, are cover crops. There is a wide agreement in the literature that vigorous living cover crops will suppress weeds growing at the same time as the cover crop (Brennan and Smith, 2005). Cover crops can prevent the development of weed population, control the soil disease, soil enrichment through nitrogen fixation in soil, improve soil structure, preventing absorption of nitrogen, increase the soil organic matter and decrease the soil, for these reasons they are cultivated (Kruidhof et al., 2008). A legume cover crop, such as common vetch, can supply most of N required for maximum maize yield (Clark et al., 1997 and Bayer et al., 2000). In addition, vetch can improve soil water quality compared with bare fallow by reducing erosion during fall, winter, spring, and increasing organic matter (Sainju and Singh, 1997).

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