

Segment of Vermin Control Which Endeavors to Stop Weeds

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Abstract

Weed control practices are mean to use weedicides, hoeing, tillage operations, hand pulling, mulching, intercropping, cultivation of weed competitive varieties, use of pure seed, seed rate, use of fertilizers, mixed cropping, crop rotation, sowing time and sowing methods. Use of weedicides: Generally chemicals such as weedicides are extensively used in crop production system throughout the world. Weedicides are used in all crops. It is known as effective and rapid control of weeds than any other method. Weedicides are available in pre and post emergence formulas for suppression of weeds before they give losses to crop.

Keywords: Weed control; Hand pulling; Intercropping; Phragmites; Weedicides

Introduction

In crop production, perennial weeds are very difficult to control such as *Phragmites karka*, *Cynodon dactylon*, *Demostachya bipinnata*, *Phragmites communis* and *Cyperus rotandus* etc. They are mostly controlled through the use of systemic herbicides including glyphosate and dalapon etc. while atrazine, diuron, paraquat, simazine and some growth regulators are also used to control annual broad leaved weeds, among them; 2,4-D is best resultant at post emergence application against broad leaved weeds. Moreover herbicide damages the weeds with most efficiency and does not give any high level negative effect on soil and environment [1]. It is an economic method which requires less labour, easy and effective against many weed species. Hoeing with hand is a historical weed control method in agriculture before activation of technology and it has been continually used in crop production for maximum crop yield. This practice is effective for all crops. Some time when crops as well as weeds become mature in a standing crop due to less attention of farmers then they cannot be controlled completely through the use of chemicals and famous weedicide products provides failure results. At that time hoeing plays important role for weed control and effectively controls the weeds [2].

Literature Review

Hoeing is a most suitable method of weed control and it is recommended for soybean in getting maximum yield. Funding it, hoeing with hand increases the yield and appropriately eradicates the weeds. Tillage means to till, pulverize, manipulate and explore the soil. Deep tillage operations is useful to control the weeds because they destroy weeds from their living roots so, weeds do not germinate again, while sprayer weedicides destroy the weeds from leaves and stem which results in re-germination of weeds in crop land [3]. However, these are effective for short term and tillage practices are effective for long term suppression of weeds. Deep ploughing significantly increases crop yield by reducing weed infestation in context with surface tillage or minimum tillage which does not reduce weeds meaningfully in any crop. Hand pulling: The practice of hand pulling of weeds is considered as a good weed practice but it is usually time consuming and less effective when crop is widely infested by weeds. This method is useful on regular basis; very few hard working farmers do this activity and save the crop from weed infestation. Organic farming recommends this method where chemicals are not used for controlling the weeds. Hand weeding is a traditional and slower method of weed control which consumes much time and labour,

because it is a difficult field operation. Mulching, cultivation of weed competitive varieties and sowing time: Mulching, growing weed competent varieties and sowing time are important in controlling the weeds [4]. These practices are key aspects of agriculture and widely recognized in crop production for weed management activities. Mulching reduces the weed infestation; it is famous, easy and less cost full. Small land farmer's use mulching in an easy and good way, not only for weed control but also for conserving moisture content of the soil, supply of essential nutrients, enhancing soil fertility, improves soil texture and structure and for obtaining good quality produce of crop and maximum yield. Weed competent varieties are almost rapid in growth and development from genetic material because they are genetically improved and timely sowing provides healthy and vigour plants which are able to compete with weed plants for nutrient and water and other resources. Sowing of crop at proper time is also an important thing, this provides best quality produce and an increase in yield, and late cultivation of crop negatively results on crop growth and yield. For better weed control the basic thing is the use of pure seed in any crop. Impure seeds contain weed seeds which result in weed germination, growth and development together with crop throughout its growth period. Pure seed provides early germination and rapid response to available nutrients and water in soil than impure seeds that establish the crop after weed germination and limits the resources for crop to germinate. Moreover if crop land is already free from weeds then there is no chance for weed infestation in use of pure

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seed while impure seeds can cause weed infestation. Pure seeds definitely provides maximum crop yield. For that, certified seed should be used that insures the purity [5]. Crop rotation: Crop rotation is found suitable for weed control and maximize crop yield. Weed germination and growth disturbs through change of crop in each season at same cropland such as wheat crop rotation with mustard crop is most helpful to reduce weed infestation. Plant population of mustard is higher that suppresses the weeds at minimal level. Same as cotton can be best rotated with millet and other crops. Crop rotation has become good practice when suitable crops are cultivated in its circle. Gheorghe reported that rotation of three to four years in wheat crop is effective for weed control and is found as good protection measure from *Fusarium* species of weeds which are most dangerous and significantly reduce yield. Many researchers around the world determined that sowing methods are important for reduction of weed magnitude, like rice crop usually sown by transplantation but due to difficulty now day's world's farmers are using direct seeding rice method. Direct seeding method increases weed infestation due to unavailability of flood water in early stage of crop. Heavy flooding in rice suppresses the weeds and reduces weed crop competition. Seeding rate has become crucial in crop production. It provides maximum plant population. Maximum number of plants effects on weeds in several ways, among them the main key aspect is space. No free space will be available for the growth and development of weed plants when maximum numbers of crop plants are growing simultaneously. If weed plants grew they will be thinner in stem and weak in overall growth and yield constituents. They cannot adversely effect on crop. In wheat and mustard crop the high seeding rate is very much important against weeds. Increase of seed rate varies with crop to crop and weed attack threat; it can be up to 20% to 90% extra seed with recommended seed rate. Some weed plants respond too much to fertilizers than crop plants. Thus they grow vigorously and damage the crop. Application of fertilizer should be at judicious time. Application of fertilizers in highly infested field will cause many problems. It will increase weed plant population and its vegetative growth that ultimately affect the crop. High dose of fertilizer should be applied early when most seasonal weeds have not started germination yet and lower dose should be applied with monitoring weed attack. Fertilization in rows of crops with major elements has significant function as compare to application of fertilizer in broadcast method because maximum nutrient directly reach the crop root zone, while broadcast fertilizers can wrongly be dispersed and can become available to the weed plants mixed cropping means growing more than one crop at same field and time simultaneously. One crop should be weed competitor that reduces the weed growth and development. Such as mustard crop is taller in height, rapid in growth and development can be best mixed with seasonal vegetable crops. From the roots point of view this crop gives tough time to weeds for nutrients and water extraction and in open sky, it shades the weeds thus limits the light availability which is most necessary for photosynthesis process of weeds [6]. Weeds then grow weaker with thinner stem and yellowish leaves. They show symptoms of light deficiency. Wheat crop can be mixed with more crops in which mustard; gram and linseed are important and commonly cultivated with wheat for minimization of weed infestation and for getting maximum profit. Minimum seed rate of minor crops should be mixed with major crop is recommended, in areas where weed infestation is greater.

Discussion

The concept of integrated weed management is that a combined action against weeds which involves all available resources to control the weed population and obtain maximum crop yield. Weed management is useful but it is a difficult practice. Thus its adaptation is a challenge among third world countries. Farmers of poor countries cannot use it as a best tool against weeds due to lack of resources and economic problems such as rotation of crop is not possible due to profitability, high seeding rate increases cost, mulching is not suitable for large scale farming, changing sowing time of crops is difficult due to climatic conditions, sowing method increases the cost for cultivation of crops and deep ploughing for good seedbed also raises cultivation costs. In Pakistan weedicides are only used as a major source of weed control in any crop and it is noted that Pakistani farmers choose low price weedicides than the products of famous companies which are high in price. For weed control various scientists has recommended integrated weed management [7]. Swanton and Weise reported that integrated weed management comprises on mechanical, biological and cultural practices. It gives information about sustainable weed control techniques through the less cost. Combined action of weed control practices is a complete code for controlling weeds that concludes significant results, while any other weed control practice is ineffective alone if used to control the weeds. Mutual use of different weed control methods reduces weed infestation and it restricts the dispersal of weeds at minimum level which cannot give adverse effects. Integration of cultural, mechanical, chemical and physical weed control practices can be best and combination of hand weeding with weedicides such as 2,4-D proved extra ordinary results. Leghari observed that calcium carbonate plus stored farm yard manure not only supply nutrients but it also kills the weeds and restrict them from re-germination.

Conclusion

This works favors integrated weed management as it definitely is a set of planned actions against weeds which can be further improved by adaptation of free of cost techniques raised from latest concept and a strategy should be modernized with integrated weed management by self-supporting techniques in which farmer's friendly weed control methods should be added which are favorable in all situations and aspects.

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