

7. Integrated weed management

Two or more of the above methods are used in combination to manage weeds with resultant ecological as well as social-economic benefits.

REMEMBER

To achieve high and good quality yields, timeliness and cost effectiveness are crucial for every weed control option.



Good maize yields



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How to manage weeds in maize for high yields



Introduction

Competition between maize and weeds can cause total crop loss depending on several weed factors.

These factors include:

- i) Type of weeds which may be
 - Grass or broad leaved
 - Free living or parasitic
 - Weed life cycle (Annual (1yr), Biennial (2yrs) perennial (>2yrs)) weed.
- ii) Population density
- iii) Period of weed competition

Irrespective of factor, correct weeding time and stage should be observed to avoid crop yield loss due to nutrient and moisture competition.

Weed management options

Various weed management options are available which include:-

I. Land preparation:

This is the first step to effective weed control. It starts with bush clearing followed by ploughing and harrowing. In minimum tillage systems, a contact herbicide is applied.



Well prepared land

2. Hand weeding

This is done using various tools like hoes, knives and ploughs. Two weeding between the 2nd and 7th week after germination are often adequate for maize depending on the agro eco zone.

This should be:-

- First weeding at 2-3 weeks
- Second one at 6-7 weeks after emergence.

3. Cover crops in intercrops

Crops in the bean family are intercropped with maize to suppress weeds. Examples include cow peas, mucuna, clotararia and dolichos.

- These crops should be fast growing and leafy to cover the ground before weeds emerge.



Maize intercrop

4. Managed fallows

The same crops above can be grown alone as fallows to prevent weeds from germinating and suppress any that germinate. When repeatedly done, the weed seeds in the soil are reduced. Maize is then planted in the following season after these crops are harvested.

5. Plant residue mulches

These are crop residues that are used to cover the spaces between the growing crops.

This method is not common due to a shortage of crop residues and destruction by termites.

6. Chemical weed control (Herbicides)

These are chemicals that kill weeds. They exist in form of granules or liquids.

Some kill weeds before they germinate or emerge and are called Pre-emergence herbicides. They are applied on bare soil surface after planting and kill weeds as they emerge.

Others kill weeds when they come into contact with them and are called contact or post-emergence herbicides. They are commonly used in minimum tillage systems.

To use herbicides effectively, skills as well as appropriate application equipment are required.



Contact herbicide control