
Different Methods of Weed Management

Debasish Borah

Krishi Vigyan Kendra, Udalguri, Assam Agricultural University, Lalpool, BTR, Udalguri, Assam, India.

Corresponding author's e-mail: drdebasishborah@gmail.com

Published on: September 30, 2023

ABSTRACT

A weed is a plant considered undesirable in a particular situation, growing where it conflicts with human preferences, needs, or goals. Weed management is one of the most crucial aspects of agriculture and land maintenance, aiming to control and minimize the impact of unwanted plants or “weeds”. The main objective is to mitigate weed competition with desirable crops, ensuring optimal growth and yield. Farmers and land managers employ various methods, such as cultural practices, mechanical cultivation, use of herbicides, mulching, and biological control, to suppress weeds effectively. Integrated weed management combines multiple practices to reduce the reliance on any single method, promoting sustainability and minimizing environmental harm. Effective weed management not only enhances crop productivity but also conserves soil health, water resources, and biodiversity, making it an essential practice in modern agriculture and land stewardship. Weed management involves various methods and strategies to control and reduce weed populations.

SOME COMMON METHODS OF WEED MANAGEMENT

1. CULTURAL METHODS

It is an eco-friendly method of weed control using the cultural practices like crop rotation, tillage operation, mulching, planting density *etc.*, to reduce weed population.

Crop Rotation: Alternating crops can disrupt weed life cycles and reduce weed pressure.

Tillage: Mechanical cultivation, ploughing, or tilling can uproot and bury weeds to keep weeds under control.

Mulching: Applying mulch materials like straw or plastic can smother weeds and inhibit their growth.

Planting Density: Planting crops closer together can create a canopy that shades out weeds.

2. CHEMICAL METHODS

It is an eco-friendly method of weed control chemicals are used for management of weeds.

Herbicides: In these method herbicides both selective or non-selective chemicals are used to kill or inhibit weed growth.

Pre-emergence Herbicides: Applied before weed seeds germinate.

Post-emergence Herbicides: Applied after weeds have emerged.

3. BIOLOGICAL METHODS

It is an eco-friendly method of weed management.

Biological Control: Using natural enemies like insects, pathogens, or grazing animals to control weed populations.

Allelopathy: Planting crops that release chemicals inhibiting weed growth.

4. MECHANICAL METHODS

Hand Weeding: Manual removal of weeds by hand or using tools.

5. INTEGRATED WEED MANAGEMENT (IWM)

IWM combines multiple strategies to reduce reliance on a single method and increase overall effectiveness. Customizes weed management approaches based on specific conditions and crop types. The choice of weed management method depends on factors like the type of weed, the crop being grown, environmental considerations, and the overall goals of weed control. Integrated approaches that combine several methods tend to be more sustainable and effective in the long term while minimizing environmental impact.

6. PREVENTATIVE METHODS

- Practicing good sanitation to prevent weed seed introduction.
- Implementing proper irrigation and fertilization to promote desirable crop competitiveness.
- Some INM practices, such as organic matter addition, can stimulate microbial activity in the soil. This microbial activity can break down weed seeds and reduce the persistence of weed seed banks over time, ultimately lowering the number of viable weed seeds in the soil.
- Weed infestation in upland direct sown rice is one of the most serious problems that may pose threat to the upland rice grower. From a study conducted by *Debasish Borah et al.*, showed

that FYM treated plots recorded significantly greater number of weeds than those obtained from any other treatment at all the growth stages during two years under the study. The higher weed infestation in FYM treated plots might be due to the presence of viable weed seeds in the FYM used in the experimental plots. So, apply weed seed free well decomposed FYM.

CONCLUSION

Weed management plays a pivotal role in agriculture and land maintenance, aiming to control undesirable plant growth that interferes with human objectives. Farmers employ various methods, including cultural practices, chemical interventions, biological control, and mechanical means, to effectively suppress weeds. Integrated weed management, which combines multiple strategies, stands out as an eco-friendly and sustainable approach. The choice of method depends on factors like weed type, crop, and environmental considerations. Integrated approaches not only enhance crop productivity but also safeguards soil health, water resources, and biodiversity.

REFERENCES

Borah, *Debasish* ; Ghosh, M and Ghosh D. C. (2015) “Effect of nutrient management practices on weed infestation, crop productivity and economics of rainfed upland rice in Arunachal Pradesh” *.IJBEAS*. 1(3) : 77-83.

Rajkhowa, D. J.; Barua, I. C.; Deka, N. C. and Borah, *Debasish*. (2005). Bioefficacy of Oxadiargyl in transplanted rice under rainfed conditions. *Indian J. Weed Sci.* 37 (3 & 4) : 258-259.

Package of Practices for Rabi crops of Assam (2019) published jointly by AAU Jorhat and Department of Agriculture, Assam. pp 58-63.