

Pre-harvest herbicides

May | 2022



Factsheet about integrated weed management



Introduction

In an integrated weed management strategy herbicides can be used to support other non-chemical measures. Different herbicides are focused on one of the growth stages of the weeds, on specific weed groups and either on establishment or growth of the weeds. Herbicides are basically divided in three groups based on their moment of application: pre-emergence, post-emergence or pre-harvest herbicides. This factsheet focuses on pre-harvest herbicides.

Applicability and efficacy

Pre-harvest herbicides are often used for weed control in crops like wheat, soybean and rapeseed. They are intended to suppress or kill and desiccate weeds that can make harvest of the crop difficult. Applying non-selective herbicides late in the season prior to harvest is done with the main reasons regarding weeds:

- Reduce seed return
- To manage late season weeds
- In-crop spray topping of weeds to prevent seed set
- For desiccation of the weeds (and eventually the crop) to speed up ripening
- To manage specifically perennials.

Common pre-harvest herbicides in Europe are mostly systemic. In some crops herbicides are used before harvest for ripening or drying the crop itself, e.g. cereals and potato.

Efficacy

Especially perennial weeds are controlled by glyphosate applied either pre-sowing, pre-harvest or post-harvest (in the stubble)¹. Tough perennials like thistle are best handled when the plant is shifting or has shifted from the growth stage to reproductive stage. Close to harvest

time, when days start to shorten and nights get cooler, perennials begin to shift from above-ground growth to replenish root reserves to survive the winter. Therefore, on the long term a systemic herbicide is most effective because it can destroy that root system. Also for other weeds pre-harvest herbicides can be appropriate because it results in rapid dry-down and kill of the weeds to prevent maturing or viability of the seeds.



Scouting is important when selecting a herbicide to be applied to target the weed species that are present in the field.



Timing of the application and rates of product are crucial to maintain the yield of the crop while reducing the seed set of weeds.

Costs and equipment

The costs are generally the costs for one round of spraying which in most cases cannot be combined with other operations. Thus, the costs consist of the herbicide applied, machine costs and labour time for one time spraying.

Common spraying equipment should be sufficient for the application of pre-harvest herbicides.

Extra information

See <https://iwmpraise.eu/publications/> for all crop diversification strategies and their definitions, and for more information on integrated weed management.

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1| Riemens, M., Sanderskov, M., Moonen, A., Storkey, J. and Kudsk, P., 2022. An Integrated Weed Management framework: A pan-European perspective. *European Journal of Agronomy*, 133, p.126443.