

Sowing pattern

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Factsheet about integrated weed management



Introduction

The sowing pattern is the spatial arrangement of a crop on the field. Most crops are sown on rows, with varying row widths and plant distances. Often the row width is determined by choices in machinery (e.g. potato ridges). Alternative to sowing on rows, crops may be sown in a uniform grid or zig-zag pattern. Crops like onion are sometimes sown in double rows or may be sown on clusters with 5-7 seeds.



Figure 1| Maize in a row configuration (left) and uniform pattern (right).



A different sowing pattern can increase crop yields and reduce weed biomass. Often the sowing rate is considered when changing the sowing pattern.



Sowing patterns and (crop specific) machinery are often adjusted to one another. Decreasing the row spacing or use of different patterns may hinder mechanical weeding, for instance hoeing.



Sowing patterns are important for certain precision techniques and weed control robots. Fixed sowing pattern can be used to maximize the efficacy of camera guided in-row techniques.

Core results

- Wider row spacing combined with higher seeding rates and inter-row weeding can lead to better weed control in cereal crops^{1|2|}.
- Sowing wheat in a grid pattern, with an inter-row space of 4 cm and a plant-to-plant distance of 2.5 cm, can increase spring wheat yields by 9% and reduce weed biomass with 30%^{3|}.
- In winter wheat, uniform patterns can lower weed biomass by 23% and increase grain yield by 14% compared to a row pattern^{4|}.

Extra information

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



Figure 2| Precision sowing of chicory in a double row and zigzag pattern.

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