



Stakeholder perceptions of the most frequently used agroecological methods of weed control in the Arctic Region (Iceland)

PROBLEM

What are the most effective agroecological strategies for weed management in horticultural crops in the Arctic Region?

STAKEHOLDER PERCEPTIONS

Arctic farmers rely on crop rotation and tillage for managing weeds. Stakeholders were also familiar with cover crops and mechanical cultivation, while 88% knew about intercropping. Weed flaming, living mulch, and agroecological service crops were known to 75%, though only 13% had heard of roller-crimpers. During a co-creation workshop, crop rotation was highlighted as the most important weed management strategy, but land scarcity limits its effective use. Tillage remains essential, though no-till approaches tend to increase weed pressure. Weed burning, particularly in organic carrot farming, has been used to a limited extent, using homemade burners. Other strategies like mechanical weeding, row tillers, robots, and soil covers are of interest. However, the short growing season makes it difficult to grow cover crops after harvest. Weed burning was also explored as a potential solution for controlling weeds.



Figure 1: A cabbage field where *Stellaria media* and grasses are the most problematic weeds.





RECOMMENDATIONS

Crop rotation and mechanical weeding should be prioritized for weed management. Trials of mechanical weed control should be conducted across different regions to reduce herbicide use. Precision agriculture technologies, such as GPS and robotics, should be explored to improve sustainability. Despite challenges with cover crops, they should be considered for regions with longer growing periods or early-harvest crops.

KEYWORDS

crop rotation, tillage, weed burning

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