



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 arable crops in the Arctic Region?

STAKEHOLDER PERCEPTIONS

Crop rotation (86%) and tillage (75%) were the most common agroecological strategies used by farmers. Over 40% of farmers also used high planting densities and qualitative seed material. Methods like soil covers and flame weeding had only been heard of but never used. Only 17% of farmers knew about weed maps, with 75% having heard of hand weeding, and 62% of cover cropping and mulching. Other stakeholders were more familiar with crop rotation, competitive cultivars, cover crops, inter-row cultivation, and mixed cropping. However, only 22% knew about weed maps. Special planting dates, seed quality, and narrow rows were known to 67%, while methods like mowing, grazing, and soil covers were familiar to 78%. During a co-creation workshop, crop rotation, especially between grains and perennial grasses, was highlighted as vital for weed suppression and soil nutrient management. Tillage is useful, but the most effective equipment varies between soil types. Precision agriculture, robots, and undersowing of cover crops were of interest, but variable weather poses a challenge.



Figure1: High weed pressure in a potato field. Main weed species are *Stellaria media* and *Polygonum aviculare*. Occasional barley plants from the previous year's crop are also visible.



RECOMMENDATIONS

Crop rotation should remain central to weed management, especially in grains and potatoes. Testing different fertilizers, sowing densities, and mechanical hilling methods could improve weed control. Precision agriculture and robotic weeding should be explored to reduce herbicide use.

KEYWORDS

crop rotation, tillage, soil condition

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