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AGROecological strategies for SUStainable weed management in key European crops

Stakeholder perceptions of the most frequently used agroecological method of weed control in Boreal Region (Estonia)

PROBLEM

What are the most effective agroecological methods for weed control in the Boreal Region?

STAKEHOLDER PERCEPTIONS

According to farmer surveys, crop rotation is the most widely used method, with 96% of respondents employing it. High-quality seed material is also prevalent, used by 83% of farmers, followed by mechanical tillage at 76%. Methods such as soil mulching and flame weeding are less common, with only 19% of farmers having heard of them and 74% not utilizing them. Weed maps are notably underused, with just 18% of respondents employing them. Stakeholders and cocreation workshop participants agree on the importance of crop rotation, cover crops, and mechanical cultivation. Mowing is particularly emphasized for effective weed control in orchards.

Figure 1: Experimental field of oat. Photo Liina Talgre

Figure 2: Clear oat field after harrowing. Photo Liina Talgre

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RECOMMENDATION

Implement crop rotation and use of certified seed material as core strategies for managing weeds. Mechanical cultivation should be employed widely, particularly in combination with cover crops to enhance soil health and weed suppression. Incorporate mowing in orchards to manage weed growth and maintain orchard health. Address practical challenges associated with soil mulching and flame weeding by exploring financial incentives and technological advancements. Increase awareness and application of weed maps and bioherbicides to expand their use and effectiveness. Ensuring that these methods are tailored to local conditions will optimize their impact on sustainable agricultural practices.

Figure 3: Clear oat field after harrowing. Photo Liina Talgre

KEYWORDS

weed control, crop rotation, mechanical weed management, boreal region

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