PRACTICE ABSTRACT NO. 24

Living mulches: when and how to establish them?

Problem

Growing a cover crop together with a main crop seems ideal but is complex to implement. Competition for light and other resources can prevent the main crop from growing properly.

Solution

Different crops are suitable for the establishment of living mulches. The solution is to identify those that could play this role in your crop rotation. The weeding of the crop must also be adapted accordingly.

Outcome

Despite the limitations and constraints of this technique, there are different possibilities to establish cover crops.

Applicability box

Geographical coverage
Europe
Application period
All year
Required time
N/A
Period of impact
Continuous
Equipment
Not specific

Practical recommendations

- The main requirements for the choice of the main crops are:
  - Moderately covering, leaving enough light to allow the survival and growth of the cover crop.
  - Clean enough to lighten the weed control program as not all programs are selective for young legumes.
- The most used crops are straw cereals, in organic or conventional agriculture. They allow the installation of cover crops, lucerne fields, meadows, seed crops etc…
- In conventional farming, it is necessary to adjust the cereal growth to make it less smothering.
- Rapeseed is also often used to install living mulches, often in addition to annual companion plants. The crop is then sown at the same time as the other species. Weeding of rapeseed must be fairly light and it will not be suitable for unclean plots. In some rotations, sunflower or fodder maize replaces rapeseed to install the cover crop.
- For some farmers, the perennial cover is originally a fodder or seed crop. It is usually lucerne, that is not destroyed before the following crops are planted.

Table 1: Ability of different crops to allow the establishment of a perennial legume cover

	State of cover development prior to sowing wheat	Sowing technique	Weed control	Weed control possibilities
Summer sowing (bare soil)	+	Seed drill	0 (unclean)	Legume herbicide
Summer sowing in a cereal mixture	Not adapted before wheat	Seed drill	++	Non or anti-grass herbicide
Winter rapeseed	+++	Seed drill, broadcasting	++	Post-emergence, anti-grass herbicide
Sunflower	+++	Seed drill, broadcasting	+	Pre- or post-emergence herbicide, hoeing
Fodder maize	++	Broadcasting /hoe	++	Adapted pre + post-emergence herbicide, hoeing
Grain maize	+	Broadcasting /hoe	++	Adapted pre + post-emergence herbicide, hoeing
Winter wheat	+ (conventional) ++ (organic)	broadcasting / harrow or Seed drill	++	Fall weed control
Spring barley	++	Seed drill	+	Mechanical weeding

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Practical testing/Farmers' experiences

If suitable for your farm, we recommend that you test it under your own conditions. Start a small-scale trial (one field). Replicate more than one year and contact other farmers, advisors or local seed companies for feedback and knowledge sharing.

Further information

- Webpage: https://www.remix-intercrops.eu/
- Facebook Page: https://www.facebook.com/RemixIntercrops/
- Wiki: http://vm193-134.its.uni-kassel.de/En.DiversiWiki/index.php/Mixture_practice_for_farmers_and_advisors
- Check the Organic Farm Knowledge Platform for more practical recommendations.

About this abstract

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ReMIX is a H2020 multi-actor project that will allow designing cropping systems based on agro-ecology for the benefit of farmers and the whole EU agricultural community. ReMIX will exploit the benefits of species mixtures to design more diversified and resilient agro-ecological arable cropping systems. Based on a multi-actor approach, ReMIX will produce new knowledge that is both scientifically credible and socially valuable in conventional and organic agriculture. The project will tackle practical questions and co-design ready-to-use practical solutions. The project will span from the specification of end-user needs and the co-design of in-field and on-farm experiments to demonstrations with evaluation of new varieties and practices. ReMIX will contribute to the adoption of productive and resilient agricultural systems. The project is running from May 2017 to April 2021

Website: www.remix-intercrops.eu

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