PRACTICE ABSTRACT NO. 18

The Lucerne, one of the most used living mulches

Problem

Several species of living mulch can be used. It is important to be familiar with them to use them wisely.

Solution

Knowing the characteristics of lucerne is essential to master its implementation and maximise the benefits for the cropping system.

Outcome

Applied research has led to a better understanding of the interactions of lucerne with its environment.

Photo 1: Lucerne (credits Arvalis)

Applicability box

Geographical coverage
Europe
Application period
All year
Required time
N/A
Period of impact
Continuous
Equipment
specific

Practical recommendations

There are few characteristics to be aware of before implementing a lucerne living mulch:

- This fodder plant with a taproot is perennial (3 to 5 years or more).
- Lucerne is a deep-rooted plant, well adapted to healthy, non-acidic soils **(Table 1)**. It should be avoided in healthy but drained soil (risk of clogged drains).
- As a cover crop, sowing density must be much lower (6-8 kg/ha) than as a fodder crop (20-25 kg/ha).
- For the perenniality of lucerne (root reserves), let it flower at least once during the season (10% of flowering plants are sufficient).
- On the variety side, choose winter-dormant varieties and if possible, late in spring.
- Winter-dormant varieties show very low growth/competition in winter and medium growth/competition in fall **(Table 2).**
- Lucerne can be integrated in all crop rotations, except those incorporating peas, beans or lentils because it potentially multiplies Aphanomyces.
- In the presence of Branched broomrape, lucerne is also not recommended because of the risk of multiplication of this parasitic plant.
- Regarding ease of chemical control, while its regulation is easy in rapeseed, it is quite difficult in wheat and maize **(Table 3)**.

Table 1. Adaptation to soil types

Deep, healthy and undrained soil	**Very well adapted**
Fairly healthy, drained soil	**Very unsuitable**
Undrained hydromorph soil	**Very unsuitable**
Acidic drying soil	**Adapted**
Limestone drying soil	**Very well adapted**

Table 2. Growth dynamics according to the season

Competition period		Comments
Winter	**Very low growth/competition**	If winter-dormant variety
Spring	**Very strong growth/competition**	
Summer	**Very strong growth/competition**	
Fall	**Medium growth/competition**	If winter-dormant variety

Table 3. Ease of chemical control

In rapeseed	**Easy**
In wheat	**Quite difficult**
In maize	**Quite difficult**

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Practical testing/Farmers' experiences

Varieties: consider Flemish varieties (dormant in winter) and if possible, late in spring. You can find out more about varieties on the Herbe-book website.

Further information

- Luzerne cultivée : http://www.fiches.arvalis-infos.fr/couverts/fiche_couvert.php?mode=fc&type_couv=pures&id_couvert=502
- Herbe-book : www.herbe-book.org/varietes/luzerne-nord & www.herbe-book.org/varietes/luzerne-sud
- Webpage: https://www.remix-intercrops.eu/
- Wiki: http://vm193-134.its.uni-kassel.de/En.DiversiWiki/index.php/Mixture_practice_for_farmers_and_advisors
- Facebook Page: https://www.facebook.com/RemixIntercrops/
- Wiki: http://vm193-134.its.uni-kassel.de/En.DiversiWiki/index.php/Main_Page
- 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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