



Technical leaflet

Pasture of intercultures by sheep



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In collaboration with the H2020 Project DiverIMPACTS (Diversification of rotations, inter-crops, and mixtures supported by stakeholders for a greater sustainability).



1 General context

Points of attention for who wants to embark on the adventure!

The grazing of winter covers by sheep is interesting from an agronomic point of view as well as from economic, ecological, and even societal aspects. Sheep use the green cover without negative impact on the soil and its structure, quite the contrary, while saving a mechanized passage. They also give back nitrogen and other nutrients, unlike an exported mowing, and in a form more quickly assimilated by the next crop.

On the sheep side, the grazing of covers results in high animal performances: the cover largely meets the needs of the animals both in the maintenance, or in pregnancy and in lactation. Even the fattening of lambs can be considered on these areas. At the sanitary level, no problem of parasitism exists: sheep graze healthy plots. And the image of sheep grazing field plots has an undeniable positive effect on the image of agriculture for the citizen.



The practice of grazing winter intercultures by sheep is respectful of the environment and soils in many ways. For instance:

- it is alternative to glyphosate;
- There is no need of mechanized passage for grinding the cover;
- Organic fertilization through the transformation of biomass into organic matter via the droppings of sheep, trampling "sheep foot".

While cover crops are still largely seen as mandatory crops and not as service crops beneficial to the farming system, giving them value through sheep grazing represents an economic, agronomic and environmental opportunity for sheep breeders and field crop farmers. To make it a win-win partnership, you need to be attentive to different aspects: What can you implement? When? Which partnership to develop? How? How to manage your pasture? What content to give to the contract between breeder and farmer?



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2 Description of the innovation

Agronomic aspects

Cover management is essential. It must be considered as a cash crop. In view of the time and the money invested, we must think about its place in the rotation and look after its implementation so that it gives the expected results. Fodder produced by a catch crop (grass-legume-cruciferous association) is very interesting in terms of nutritional quality, at a time of the year when grass availability decreases rapidly with decreasing temperatures. It is the quality of the cover which makes it possible to ensure the needs of the ewes in the maintenance, in pregnancy and in lactation without adding concentrates. Also the adaptation of the cover to the local conditions is essential. It requires implementing trials and monitoring over several seasons. It's about building a knowledge base.

The sowing dates are paramount, especially in the colder regions. It will be necessary to implement the cover as soon as possible after the former harvest. Implantation should be neat and performed in good conditions. To avoid germination problems, care should be taken with the quality of the seeds used and the sowing technique. Producing your own mixtures allows you to adjust the proportions and save money on seed purchases.

Good to know

Sheep can also very well value cereal regrowth or yet more rapeseed regrowth. Some breeders also use sheep to depress their cereals in the spring. They use high livestock density per hectare (1000 ewes per ha) in 24 hours to avoid damaging the crop. Cereals height pass from 20 cm to 5 cm. There is a positive impact on cereal diseases (due to the absence of leaves), a better crop tillering, less crops lodging (final height reduced by 15 cm) and a final grain yield similar to ungrazed plots.

Health and zootechnical aspects

In the case of intercrop grazing, sheep graze healthy plots. There is therefore no problem of parasitism. On the other hand, cases of lameness can appear. They must be watched. Regarding the feed transition when the sheep get into the plots of intercultures, there is, a priori, no worries. But you must ensure that the sheep come into the cover crop full stomach.

The fattening and finishing of the lambs can be carried out entirely by grazing on intercultures. Intercropped pasture is also potentially ideal for "flushing" ewes (enriching the ewes' diet to improve their condition before and during the rutting season). This practice aims to increase the ovulation rate and thus the lambing rate. Here too, the quality of the cover is essential. The mixture to be sown will depend on the date and the duration of grassland, the desired grazing period (autumn-winter or spring), the previous and following crops.





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In each situation, it should be taken care to seedlings and incorporate legumes and non-bloating species. For an autumn pasture, for instance, a combination of white oats, clovers and vetches or peas is well suited. The addition of cruciferous species, such as forage rapeseed and forage or Chinese radish, has a positive impact on feed and soil structure. For a spring pasture, we will favour rye, triticale or ray-grass with a legume like crimson clover. The more diverse the coverage, the more secure the overall performance will be. An association of 3 to 6 species is recommended.

Grazing management

Several solutions of temporary electric fencing exist: nets and wires. The nets are relatively arduous and long to install. Electric fences with 3 or 4 wires are a good solution for the contention on field crops. There are installation and removal systems that are very practical and very quick to implement. This goes from the classic wire crank roller to the automatic system on quad. Tumblewheels or quad and rappa machine are the most common.



3 Adoption criteria

Geographic proximity

Geographical proximity is a *sine qua non* condition for a sustainable stockbreeder-farmer partnership.

Contractualization of the breeder-farmer partnership

When animals graze on another farmer's plot, a grazing contract is required to comply with the nitrogen regulation. In order to lay the foundations for a sustainable partnership, the potential costs and benefits of this partnership (economic, environmental, social impacts, etc.) need to be evenly weighed. It is also important to work on the trust and quality of the relationship in order to perpetuate it. All the technical ins and outs about intercrops grazed by sheep, both for the stockbreeder and the farmer, must be put on the table.

The valorization of cover crops by sheep grazing is the subject of relatively recent work in Wallonia. The dynamic is driven by the College of Producers to create / expand partnerships between farmers and breeders, in order to promote winter intercropping by grazing sheep.

This practice is a case study of the Horizon 2020 DiverImpacts project (<https://www.diverimpacts.net/case-studies/case-study-4-be.html>), which aims to promote crop diversification within the European Union. The Walloon partners in this project are the College of Producers and the CRA-W, Walloon Agricultural Research Center. It is supported by the Walloon Rural Development Network in its implementation as an Operational Group.

