

GRASS-WHITE CLOVER & MULTISPECIES SWARDS

Irish agriculture is now facing a period of rapid change with environmental constraints forcing reductions in chemical fertiliser inputs. Grass & white clover swards and multi species swards offer an alternative to high chemical fertiliser inputs while maintaining animal production and dry matter production. However, white clover and multispecies swards still require additional research in terms of long term persistency, optimising nutrient in soil and herbage production and feed quality.

With the growing interest in white clover swards and multi-species swards, the aims of this living lab was to use actual fields on commercial farms to measure the quality of the feed of the tree different sward types as well as the impact on soil health characteristics. The results and impacts of same were discussed with the farmers in the field

That predominant grass type in Irish dairy, beef and sheep production systems is perennial ryegrass. Perennial rye grass swards are very well suited to an Irish climate; they persist for in excess of 10 years with high feed quality. However, they require high levels of chemical fertiliser inputs to maintain high levels of dry matter production. From this living lab experience it was found that grass-white clover and multispecies swards maintained or improved feed quality, with higher soil organic matter than grass-only swards in the farms studied.

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A group of 30 grassland farmers discussed findings generated on five volunteer commercial dairy farms. Between six and nine paddocks per farm were selected, representing grass-only, grass-white clover and multispecies swards.

What was measured?

Pre-grazing pasture quality (twice), soil fertility and organic matter (end of season), and slurry nutrient composition (winter).

30

Farmers in living lab

5

Participating dairy farms

2025

Grazing season

Pasture feed quality

Crude protein (% of dry matter)



Dry matter digestibility (%)



Soil organic matter

7.60%

Grass only

10.43%

Grass + clover

9.18%

Multispecies



Fig. 1. Living lab participants

Grass and white clover swards increased the organic matter content of the soil. The reason for the increased organic matter is when legumes are included in swards, they can take atmospheric nitrogen into the soil and increase the overall nitrogen content. Similarly multispecies swards increase sward diversity and increase rooting depth which can impact on the soil organic matter content. These results in terms of feed quality and soil health characteristics are consistent with what has been reported in research studies, the difference here being that these results were generated in a living lab pharmacy.

These results are extremely important in pasture based systems as it can increase the overall carbon sequestration and improve nutrient use. The group of farmers were extremely interested in this from a feed quality perspective with reduced inputs but also from a soil health point of view in that soil organic matter can be increased which has significant financial and environmental benefits

Lessons learnt

The living labs approach of taking the samples from individual farms and then discussing the results together as a group while standing in the individual fields was hugely beneficial and arguably more informative than relying on research results from experimental farms in technical reports. From the meeting, the management practices on paddocks that contain white clover or multispecies swards are being optimised to ensure chemical in fertiliser is being reduced to the appropriate level in order to maintain herbage production, feed quality and animal performance while also improving the environmental footprint of these swards through reduced chemical input. We will continue to meet the group of farmers while monitoring the progress of the individual paddocks on farms to ensure wider uptake within the group of multispecies and grass while clover swards