

**Ryan Callan**  
(CFES, Dundalk Institute of Technology)

**Edward O'Riordan**  
(AGRIC, Teagasc Grange)

**Joseph Lynch**  
(CFES, Dundalk Institute of Technology)

**R**eseeded mixed leys can be grouped as: multispecies swards, red clover silage swards or typical perennial ryegrass-white clover swards.

Red clover swards are sometimes sown as a single species, but popular reseeds typically contain high proportions of the upright red clover plant along with grass and some white clover. It is mostly targeted for silage crops.

Multispecies swards consist of a minimum of three species of forage plant, but generally contain six or more grasses, legumes and herbs (such as chicory or plantain).

The majority of multispecies swards are seeded for use in grazing systems.

However, in challenging seasons farmers may be interested in making silage with some of these swards to help with management of their grazing rotation.

#### What does ensilability mean?

When making any silage, three factors interact to determine a successful outcome: weather conditions, harvesting practices and the composition of the herbage.

From the herbage perspective (ie the plants), the factors that need to be considered include: the yield required, and the nutritive value needed in the forage to achieve animal performance targets.

Also important is the ability of the forage to preserve well and not suffer high losses in yield and nutritive value during storage (the ensilability).

When making silage, you are facilitating fermentation whereby microorganisms convert carbohydrates into acids and these acids preserve the feed. The acids generated also slow the activity of organisms that could spoil the forage.

To facilitate good silage fermentation, the forage should have enough freely available sugars, which will be converted into adequate amounts of acid to reduce the pH.

The right micro-organisms are also needed to complete the fermentation dominate the microbial population once everything is sealed up.

These factors change depending



# The benefits of ensiling mixed swards



More diverse swards have the potential to make a high-quality silage crop from reduced fertiliser input in the correct conditions. But high-clover swards can be more challenging to ensile than typical perennial ryegrass crops

on the plant species present in a silage crop at harvest. Research has shown that legumes (e.g. clovers) are more challenging to ensile than ryegrasses.

To counter this, research is ongoing into the actions farmers can take to reduce the potential for a poor silage fermentation in these newer multispecies reseeded swards.

#### Cutting the crop

Research at Teagasc Grange has highlighted that multispecies swards and silage crops with a substantial clover content can successfully be

preserved as pit or bale silage if conditions allow for the correct management.

Cutting at a higher height than typical grass silage swards (e.g. 6-8 cm) is recommended to avoid damaging the growth point of red clover and other herb species that may affect regrowth after harvest.

Harvesting silage swards at appropriate growth stages is also an important consideration as the





Continued from p9

nutritive value (e.g. digestibility) and ensilability change with crop development.

Field tests on ensilability, such as refractometer tests to indicate the sugar content in a sward, are available. These may be of particular value in fields with many species as increased complexity can make visual predictions more difficult.

It is beneficial to take herbage samples for these field tests in several different places to capture the variability within the sward.

In maturing multispecies swards, the amount of different component species and their rate of development can vary quite quickly depending on the growing season.

As such, delaying a harvest may not always be advisable if adequate quality and ensilability is evident. There has not been much research to date on the effect of harvesting system for these sward types (ie baling or precision-chop for a pit).

However, it is only logical that both systems could be effective once good sealing is achieved and the previously mentioned factors are in order. Some farmers have reported that chicory tends to bolt at later growth stages, resulting in a stronger stem that may present issues around sealing the silage crop.

### Is wilting required?

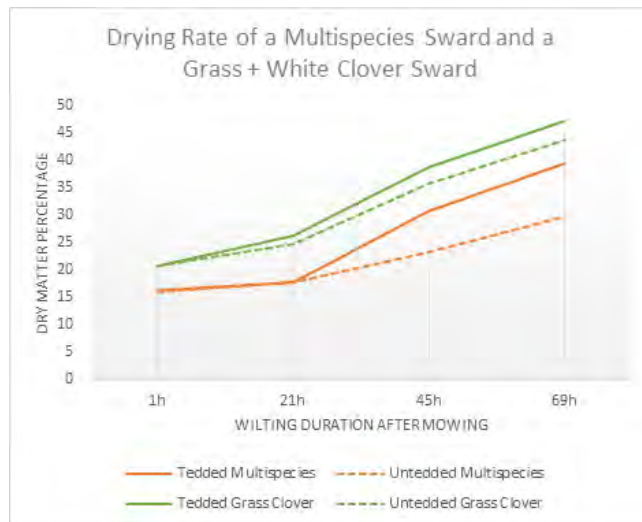
One of the primary concerns around ensiling multispecies swards is the lower dry matter at cutting than a more perennial ryegrass-dominated sward.

A low dry matter content forage can inhibit the fermentation when it is ensiled and lead to higher effluent losses. Wilting is of high value in such swards.

The aim with wilting is to achieve an optimal dry matter content of approximately 25-30% quickly in order to minimise nutritive forage losses in the field.

Recent research at Teagasc Grange and DkIT has highlighted that high yielding and dense swards with high herb content (ie chicory or plantain) are likely to dry more slowly during wilting than grass dominated swards in similar conditions (Figure 1 above).

Deciding whether to ted out the mowed swaths or not will depend on the quantity of each plant species in the sward. Swards with a high herb content will most likely need to be teded to achieve a dry matter of over 25% in adequate time. However,



**Fig 1. The drying rate of a multispecies sward and a separate grass + white clover sward sampled in the same conditions in experiments last summer at Teagasc Grange.**

if the herb content of the sward is low, and the red clover content is high (e.g. in a red clover silage crop) take care to prevent high losses from leaf shattering on the clover plants. Mechanical processing may need to be kept to a minimum.

If conditions allow for an optimum dry matter and carbohydrate content to be achieved through good harvest timing and machinery intervention, then these swards can successfully be ensiled. While additional research is required into what ad-

ditives are most suitable for these swards, additives have been effective at reducing the losses associated with low ensilability indices in previous studies of grass and other forage crops. However, the effects are variable depending on the composition of the crop.

It is important to monitor diverse swards closely as they progress towards a silage harvest as their variable nature can lead to quick changes in the sward composition as the crop matures.



The aim with wilting is to achieve an optimal dry matter content of approx 25-30% quickly in order to minimise nutritive forage losses in the field



**SwiftCool Milk Tank**

"It has nearly cooled by the time we are finished milking, the efficiency is unbelievable"

**James Godley**  
Co. Kerry



[www.dairymaster.com](http://www.dairymaster.com)  
call now: 0818 124 124

