IBERS Research on the Forage Protein Project

Effect of Mower Type on Forage Legume Silages

Getting Started – What you need to know about mowing forage legumes

- Rapid wilting of forage crops for ensiling is key to ensure nutrient loss is kept to a minimum.
- Using conditioners on mowers at harvest promotes moisture loss, reducing wilting time.
- Forage legumes have fragile leaves that can shatter if not managed correctly during harvest.
- Forage leaves contain more protein than stems so reducing leaf shatter should increase silage protein yield harvested.

IBERS Research

We investigated how the use of different mower conditioners* affected field losses and silage quality.

What we compared

- Forages:
  - Red clover (AberClaret)
  - Lucerne (Timbale)
  - White clover (Aran)
  - P. Rye grass (AberMagic)
- Each plot harvested by 3 methods:
  - No conditioner (No C)
  - Steel tine conditioner (STC)
  - Rubber roller conditioner (RRC)

How we compared them

- At IBERS, each forage was mown and left to wilt in the swath.
- After a 24hr wilt, forages were baled.
- Losses during baling were measured by raking and vacuuming the ground on each plot post-harvest.
- Sub-samples of baled forage were inoculated and ensiled in lab-scale silos,
- Dry matter (DM) and nutritional composition of forage and silage were determined.

* The project consortium gratefully acknowledges PÖTTINGER for the loan of mowers and staff expertise.
Results – What are the losses in the field at harvest?

**Fig. 1** Crude protein (CP) field losses (%) during harvest of legumes and ryegrass cut using different mowers

![Graph showing field losses of crude protein for different legumes and ryegrass cut using different mowers.](image)

Results – How do these field losses affect silage quality?

**Fig. 2** Crude Protein content (%) of legumes and ryegrass silages harvested using different mowers

![Graph showing crude protein content for legumes and ryegrass silages harvested using different mowers.](image)

**Key Findings**

- Different harvesting methods are required when harvesting legumes compared to ryegrass.
- A rubber roller conditioner achieved the target forage DM with less field losses.
- Due to the higher field losses, legume silage produced using a steel tined conditioner had a lower crude protein content.