Getting Started – How to establish forage protein crops

At IBERS, we explored ways of establishing protein forages including comparing ploughing to direct drilling, the effects of sowing date and the use of herbicides. When establishing a high-protein legume to replace a grass ley, we need to know what effect each treatment will have on protein yield and establishment success.

IBERS Research

We investigated the effects of different approaches on the success of lucerne establishment.

What we compared

Lucerne (Timbale) was sown at 22kg/ha either:
- after a 1st silage cut or 2nd silage cut
- after ploughing or by direct drill
- with or without the use of glyphosate herbicide

Forage yield, botanical composition and protein content was assessed.

Results

During the establishment year we found:
- No loss of annual forage crude protein yield when established after a 1st silage cut with the use of a herbicide.

During the 1st harvest year we found:
- Similar DM yield to existing grass receiving 270kg N/ha (except late-sown lucerne without herbicide) (Fig.1).
- Higher protein yield per ha when lucerne sown early or with Herbicide (Fig.2).
**Key Findings**

- Weed grass competition was the main factor affecting the success of lucerne establishment.
- When herbicide was used, lucerne was not affected by establishment date or method.
- When herbicide is NOT used, establish early in the season by ploughing.
- Lucerne benefitted from early sowing to establish before winter.
- Establishing lucerne early in the season resulted in a higher annual DM and CP yield per ha than an existing sward receiving 270kg N/ha.

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*Yield data shown includes the existing grass yield taken as silage cuts prior to each lucerne establishment.*