The Nitrogen Contribution of Fabas Demonstration

A demonstration was started in 2013 to measure the N added to the soil by green manuring a crop of fabas. Sown in April 2013, the crop was incorporated in either August or October and soil test carried out to measure N release over time. The N release results are in the top two rows of the table below.

Figure 1. Soil Nitrate Levels

Crop	Incorporation	8th August (kg N/ha)	2nd October (kg N/ha)	21st November (kg N/ha)	13th July '14 (kg N/ha)
Fabas	August	38	117	125	151
Fabas	October		41	117	147
Fabas	Stubble				84
Wheat	Stubble				37

Continuing this project in 2014, barley was sown over the area that was green manured, as well as two new areas that were either wheat or fabas in 2013. When the soil samples were taken in July 2014, the barley sown on the green manured or faba stubble was considerably greener and less disease observed than the barley on the wheat stubble.

On wheat stubble

On faba stubble

At harvest, strips were taken from the "on faba stubble" and the "on wheat stubble" and the grain yield and quality compared.

Treatment	Yield t/ha	Protein %	Retention %	Test Wt kg/hl
On Wheat	6.177	12.9	45.0	67.9
On Fabas	6.795	9.9	75.8	73.9
p	0.202	0.017	0.004	0.01
lsd	NS	1.76	7.94	2.69

Even though there was a 0.6 t/ha yield increase for the "on fabas" treatment, the statistical analysis indicates that this difference is not large enough to be attributed to the faba stubble and not simply by chance.

However the changes in grain quality are significant. The "on wheat" barley was higher in protein, and had lower retention and test weight. This suggests that the "on wheat" barley ran out of moisture quicker than the "on fabas". This may be due to the "on fabas" barley being healthier and actively growing during the wet winter period which enabled it to grow and develop a better root structure that could access more soil moisture compared to the "on wheat" barley that grew quite poorly during winter. Or the more vegetative "on fabas" barley used more soil moisture and so the soil recovered from waterlogging faster.