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DLF TRIFOLIUM
SEEDS & SCIENCE

Research proves the importance of high DNDF

A study in 2004-07 at Oregon State University, USA confirms the value of high DNDF. Some of the conclusions are:

"Differences observed in total digestible fibre harvested per acre (32%) has significant impacts on farm productivity. It is estimated that the amount of extra energy produced from digestible fibre advantage of the ryegrass with the highest DNDF compared to the ryegrass with the lowest DNDF is enough to produce an extra 28 cwt of milk per acre (3,130 kg/ha) per year.... We would expect to see additional growth and productivity from grazing livestock as well.

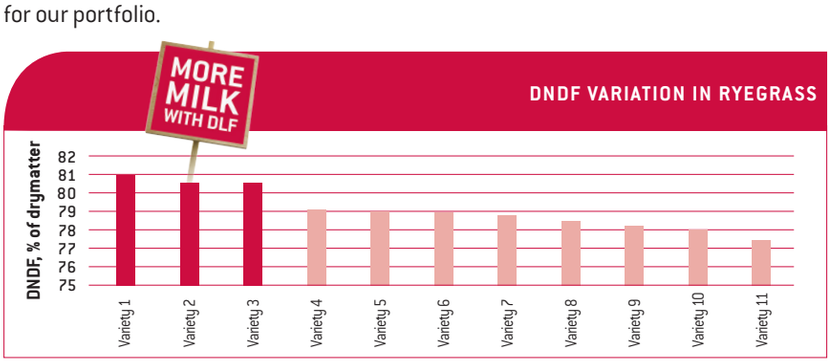
Accounting for DNDF in grasses is turning out to be critical for the livestock industry. It is probably more important as a producer to understand the DNDF of grasses than even corn silage or alfalfa because there is more variation seen in the grass population".

Source: Improved Understanding of Fiber Digestibility in Ryegrasses by Troy Downing, Regional Dairy Agent, Oregon State University, Tillamook, Oregon and Patrick French, Southern States Coop, Richmond, Virginia.

Earn €100 extra per cow with high DNDF grass seed varieties

Digestibility of the cell wall (DNDF) is the single most important quality parameter in grasses. High DNDF results in higher animal intake of forage and consequently higher output as milk or weight gain. With high DNDF varieties you get higher production as these varieties deliver the best possible combination of yield and quality, when harvested at the optimal time.

For Perennial ryegrass, differences of up to 10%-units in DNDF are reported in literature. This gives the grass breeder something to work with and at DLF we have for some time been looking for variation in DNDF – in order to select the best varieties for our portfolio.



Variation in DNDF within 11 intermediate diploid varieties of Perennial ryegrass. Dried samples of fresh grass, NIRS analysis. Average of two years trials, 8 cut in total, 2010-11. DLF-TRIFOLIUM.

In the figure, a typical spread in DNDF is shown. There is around 4.5%-units from the least to the most digestible variety. This corresponds to an extra yield of more than one litre milk per cow per day when feeding with Variety 1 instead of Variety 11. On a yearly basis this sums up to around €100 per cow – just by choosing the best grass variety.
In the example above, Variety 1, 2 and 3 would be selected as high DNDF varieties at DLF.

It also works in practice

Cows are not always fed on grass alone, so how important is the digestibility of grass in a balanced ration of maize, grass and concentrate? In the table below a specific feeding plan has been calculated with two different grass silage qualities, one with relatively high and one with relatively low digestibility of organic matter.

The message is clear: This is something that improves farm economy as high quality silage has a clear impact on feed intake and consequently on animal performance.

THE ADVANTAGE OF HIGH QUALITY SILAGE

	HIGH QUALITY SILAGE	LOW QUALITY SILAGE
Digestibility of Organic Matter	79,3	72,5
NEL_{20} per kg DM	6,43	5,90
Grass intake, kg DM/day	5,46	4,20
Price per kg DM, €	0,19	0,21
Difference per cow	+ € 100 per year	

Difference in animal intake and feed price depending on silage quality. Danish Advisory Service.

Lucerne for dry regions

Mixtures with grass and Lucerne have become very popular on many farms in dry regions.

The high yield of the first cuttings as well as the high quality of the forage has been confirmed on large dairy farms in the Black Earth Region, Russia.

The total protein yield is 50% higher compared to a pure Lucerne stand.

YIELD OF CUTMAX ALFA PROTEIN

	GREEN MASS YIELD, 1ST CUT, T/HA GRASS	PROTEIN %	PROTEIN YIELD, T/HA
Pure Lucerne	12	19,8	0,83
CutMax Alfa Protein	20	17,8	1,25

Yield of pure Lucerne compared to a mixture of grasses and Lucerne.
Source: DLF trials and observations in the Black Earth Region, Russia.

The ForageMax mixture with Lucerne and grasses is successfully used in Estonia:

Einar Lepiste, agronomist for Central Estonia reports:

"I have successfully used DLF-TRIFOLIUM's ForageMax mixtures for producing silage for more than seven years now.

As part of the land is drought-sensitive, the CutMax Alfa Protein mixture is most suitable for growing there, ensuring a normal harvest, even in dry years.

With this seed mixture I establish new grassland on approx. 50 ha every year. The fields are sown down for a four year period. Thus, we continuously use up to 200 ha of grassland created with this mixture. In an average year, I get four cuts of silage.

In the case of CutMax Alfa Protein, early spring sowing is important and conservation is done with the silage additive AIV. The quality of silage has always been very good".

DLF offers a number of ready ForageMax mixtures with Lucerne:

FORAGEMAX MIXTURES WITH LUCERNE

Grazing	Dry climate	VersaMax Hot & Dry
Cutting	Moderate climate	CutMax Alfa Protein
Cutting	Dry climate	CutMax Alfa Protein, Hot & Dry
Cutting	Dry climate	CutMax Alfa Super

Ask your DLF contact person for further information or take a look at www.dlf.com

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