



MORE THAN JUST ANOTHER PERENNIAL RYEGRASS!

A TECHNICAL GUIDE



This new concept is being evaluated across a range of sites throughout the UK. This is the trial near Lincoln.

What is Matrix Enhanced® Ryegrass?

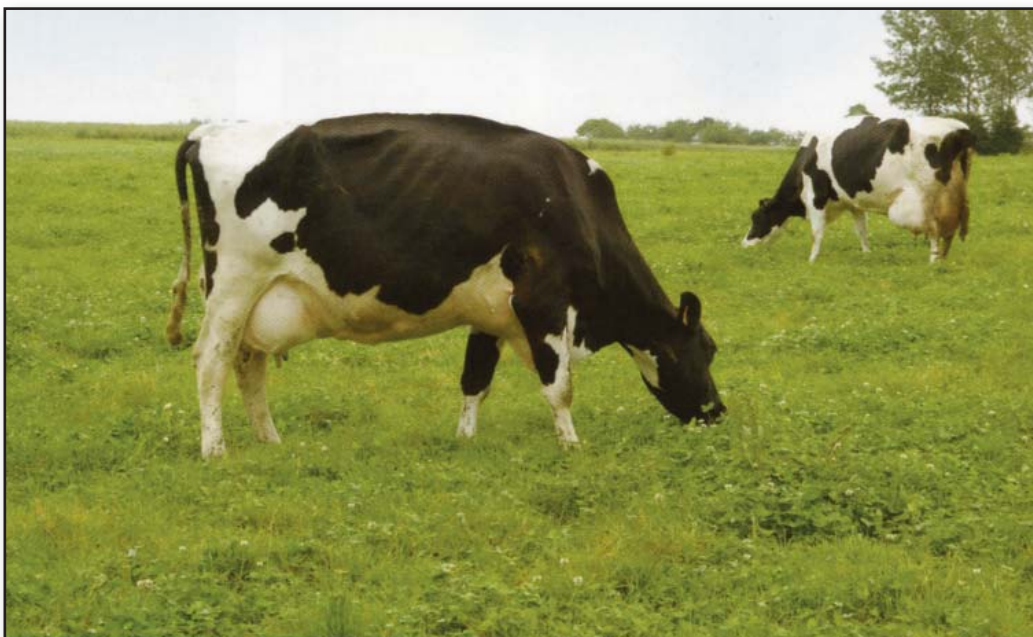
Matrix was developed by Cropmark® in New Zealand and it is a complex inter-generic hybrid consisting of about 80% diploid pasture Perennial Ryegrass and 20% New Zealand Meadow Fescue.

What is Matrix For?

Matrix was bred as a high quality grazing grass with a much extended grazing season and very rapid regrowth. This makes it especially suited to paddock management or rotational grazing systems, but it can also be used for set stocking.

Benefits of Matrix Enhanced® Ryegrass

- Grows at lower temperatures than ryegrass giving up to 3 weeks extra growth in the spring!
- Matrix also grows much later in the autumn than ryegrass, giving up to another 3 weeks extra grazing!
- Very rapid regrowth particularly when defoliated at the 3 leaves per tiller stage.
- Very dense fine leaved sward resists poaching and treading.
- Complex genetic make up enhances forage quality and digestibility. For best results graze when there are 3 leaves per tiller.



Matrix 40 Enhanced® Ryegrass Mixture

40%	Matrix Enhanced® Ryegrass
35%	Twymax Late Perennial Ryegrass (Tetraploid)
7.5%	Cancan Late Perennial Ryegrass
7.5%	Romark Late Perennial Ryegrass
5%	Grasslands Demand White Clover
5%	Makuri White Clover
<u>100%</u>	

Sowing rate 12.5 kilos per acre. Pack size 25 kilos.

This mixture is the one to choose if you are likely to experience frequent frosts or prolonged winter conditions. The Matrix is protected to a degree by a blend of suitable companion ryegrasses and white clovers but the principles of frequent defoliation and hard defoliation before the onset of winter still apply.

Matrix 70 Enhanced® Ryegrass Mixture

70%	Matrix Enhanced® Ryegrass
20%	Twymax Late Perennial Ryegrass (Tetraploid)
5%	Grasslands Demand White Clover
5%	Makuri White Clover
<u>100%</u>	

Sowing rate 12.5 kilos per acre.

Combines the attributes of 70% Matrix Enhanced Ryegrass with white clover and Twymax - the best late tetraploid perennial ryegrass for grazing management. Suitable for all but the harshest climates. Management techniques described in relation to Matrix 90 still apply.

Matrix 90 Enhanced® Ryegrass Mixture

90%	Matrix Enhanced® Ryegrass
5%	Grasslands Demand White Clover
5%	Makuri White Clover
<u>100%</u>	

Sowing rate 12.5 kilos per acre.

This is the mixture that is most popular with French farmers but given the differences in climate we strongly advocate that Matrix 90 be used for **over-seeding existing pastures**.

Matrix Enhanced Ryegrass® Mixtures Management Guidelines

Sowing Rate

We recommend a sowing rate of 12.5 kilos/acre but it can be sown at higher seeding rates.

Sowing Time

Treat as you would any conventional grass/clover mixture. Depending on where you are located, the clover may not germinate if sown too late in the autumn when soil temperatures are falling. Spring to mid-August is ideal.

Sowing Method

Treat as any grass mixture, drill or broadcast into a fine, firm seed bed and roll in afterwards. If drilling, we recommend that Matrix Enhanced Ryegrass Mixtures are cross drilled.

Grazing

Mixtures are more easily managed on a paddock grazing system as pioneered in New Zealand, where Matrix was developed.

When the Matrix in the mixture has 3 true leaves per tiller, it is ready for grazing. At this point, it is likely to yield between 2500 – 2800 kgs DM/ha. After grazing the residual grass should be 1400 – 1600 kgs DM/ha for cattle and 1000 – 1200 kgs DM/ha for sheep. If grass gets beyond the 3 leaf stage prior to grazing, quality will drop and regrowth will be slower. If you are using a rising plate meter, you will need to make allowances for the improved density of a Matrix based mixture.

On a typical New Zealand system, every paddock will be grazed 10 -12 times a year.

Matrix should be grazed hard or cut low late in the autumn, before the onset of winter to avoid winter kill. Limagrain cannot be held liable for damage to swards caused by unusually cold weather or any failure to follow all the key husbandry guidelines outlined in this Technical Guide.

Recent Matrix Trial Results

	Rep	Winter Damage HD/SF 21/01/2010	Regrowth HD/SF 21/01/2010	Regrowth HD 01/02/2010	Spring Growth HD/IM 07/02/2010
Matrix 90	1	7	5	6	7
	2	8	6	7	9
	3	7	5	6	9
Matrix 40	1	6	4	5	4
	2	5	5	5	4
	3	6	5	5	4
Matrix Timothy White Clover	1	7	5	6	5
	2	6	6	6	6
	3	7	5	6	8
Matrix	1	7	6	7	8
	2	7	6	7	9
	3	7	5	7	8
Matrix Anaconda/Eurostar/ Twymax White Clover	1	6	5	5	6
	2	5	4	5	3
	3	6	4	5	6
Control (Medium Term Perennial Ryegrass Ley)	1	3	2	3	3
	2	3	2	3	3
	3	3	2	3	2

These recent trial results show that the Matrix started growing as early as the beginning of February. The highest spring scores were obtained from plots of 100% and 90% Matrix content. The lowest scores for spring growth were the plots without Matrix. Despite the very cold weather in December and January (2010) the winter damage was not significant.



Our Matrix trial site near Lincoln.

Matrix on the Farm

Dairy farmers in Brittany have been enjoying the benefits of including the new enhanced ryegrass hybrid - Matrix - in their leys for the past six years. They are gaining from not only being able to extend the grazing season, but also finding that Matrix leys are highly palatable and deliver higher DM yields than perennial ryegrass leys.

The three farmers below are all sowing Matrix with either one or two white clover varieties – so ensuring plenty of grazing through the hot summer months and also cutting fertiliser requirements.

Alain Floch's farm is situated near to the west coast of Brittany at Plourin and receives just 1000mm of rainfall each year. Cows are only inside full-time for 1 month, and from mid-January to the end of March they are only in at night. For 10 months of the year they only have grazing, and are giving an average 7,100 litres per cow. Mr Floch says that the Matrix grew up to three weeks earlier than conventional ryegrass in the spring and that it carried on growing late in to the autumn as well.



Cows at Stephan Macé's farm Le Pont Réhaut, east of Rennes, are of high genetic merit. The herd yields an average 10,200 litres/cow, with concentrate being fed in the parlour. They are grazed outdoors on Matrix leys for 10 months of the year, starting mid-February, in 1.25ha paddocks, spending 4-6 days on each plot.

Just east of the Brittany area, farmer Pierre-Yves Lairy turns his cows out as soon as possible in February and brings them inside again mid-November. He allows one tenth of a hectare per day for his 55-cow herd, and expects to grow an extra 30% more grass by using Matrix in the ley. He says cows find it highly palatable.



Matrix Enhanced® Ryegrass Development Update - April 2010



Matrix sales are going exceptionally well with excellent levels of enquiries from farmers responding to all the press that Matrix has generated over the past couple of months.

In order that farmers use Matrix successfully as per our guide you may well be interested in how Matrix has come through this last winter, one of the worst on record.

Our advice to defoliate Matrix tightly as late as possible before the onset of winter proved to be very pertinent indeed. As Britain and Ireland emerge from what has been one of the hardest winter in living memory, we have carefully evaluated Matrix's performance in different areas and formulated the following advice.

MATRIX ENHANCED RYEGRASS – ADVICE FOR SOWING

1. Matrix should only be offered to disciplined graziers; dairy, sheep or beef.
2. Correct management is essential (see the Technical Guide available on the Limagrain web site), especially in relation to frequent defoliation during the grazing season and hard defoliation before the onset of winter.
3. We do not recommend any one farmer commits to more than a few acres of a Matrix mixture until they have experienced it personally, exploit its many advantages, and learnt to manage it.
4. For most situations we recommend that farmers should sow Matrix 40. Current experience shows that Matrix can be protected from the potential damage that can be inflicted by severe winters by the inclusion of other species. This is probably down to the creation of a micro-climate.
5. Matrix 70 can be sown safely in warm fields in southern areas. The sort of fields and climate where later maturing maize varieties are grown is likely to be suitable for Matrix 70.
6. Matrix 90 – This is the mixture most popular with French farmers, but given the differences in climate should only be considered for over-seeding existing ryegrass based swards.

Limagrain UK Ltd will not accept liability for damage to swards caused by unusually cold weather or failure to follow the key husbandry guidelines outlined in the Technical Guide.

REPORTS FROM OUR “DEVELOPMENT” FARMS

Ireland – nr Dungarvan

Leading dairy farmer Jim Curran sowed a third of one of his paddocks to pure Matrix to evaluate its performance compared with two of the top late tetraploid ryegrasses on the Irish Recommended List. The trial was sown last September and all three varieties established well. The big difference was that he was able to graze in February when Matrix was already growing strongly with several centimetres of growth above the still dormant perennials. When one of our technical staff visited the farm in mid March, all three varieties had now greened up, but the Matrix was again growing strongly ahead of the two perennials.



North Devon

Another site where Matrix was sown as recently as last autumn but by early March was exhibiting strong spring growth compared with the control perennial ryegrass based mixture.



Sussex

Matrix again emerged from the hardest winter in almost 40 years with flying colours! The farmers noted that as early as late February Matrix was growing strongly at a time when most of the grass in the region was looking very brown.

Sparsholt College, Hampshire

Here Matrix was sown on a particularly exposed site with an adverse high pH of 8 two years ago. After its second winter the pure stand of Matrix had suffered significant winter kill but where ryegrass had been over-seeded into the sward the Matrix had fared much better and was growing away strongly, ahead of the ryegrass as the picture below demonstrates. It seems the presence of other, more winter-hardy species, affords some protection to the Matrix.



Matrix

Ryegrass

East Suffolk

Another stand of pure Matrix emerged from its second winter with only minor winter damage despite rather lax management and being sown into a hostile, dry sandy field.

Replicated Plot Trials in Lincolnshire

Here we have Matrix sown straight and in a number of conceptual mixtures together with conventional ryegrass based mixtures as a control. Some winter damage occurred in all the plots but the Matrix fared no worse than the control plots.

Matrix started to grow in January immediately after the snow had melted and by February 1st it was growing very strongly whilst the ryegrass control mixtures were still dormant.

At the last assessment on March 24th all plots had suffered some tipping by recent frosts but Matrix still had twice the growth of the control plots.

It was also very interesting to see that a conceptual mixture of Matrix, Timothy and white clover was growing very strongly too. As Timothy grows at a lower temperature than perennial ryegrass we are not too surprised, so this might form the basis for a new mixture in the Matrix range.





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