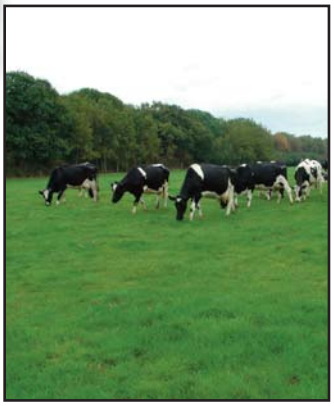
WHY SETTLE FOR *JUST* "ORDINARY" GRASSES... WHEN YOU CAN HAVE TETRAPLOID POWER!



Look at the Powerful Advantages associated with Tetraploid ryegrasses.

HIGH DIGESTIBILITY & HIGH PALATABILITY

Livestock find the wide leaves and larger cell content (containing high concentrations of sugars) of tetraploids very palatable. This leads to higher voluntary intake resulting in more meat or milk. On the whole, the digestibility of tetraploids is much better than most diploids meaning that more of the ingested material is converted to improve animal performance.

MORE EFFICIENT USE OF NITROGEN

Work carried out at Wageningen in the Netherlands showed that tetraploid ryegrasses, with their deep root systems, are consistently more efficient at utilising available nitrogen. Not only is this extremely important for our environment, but it results in higher yielding grasses for your livestock too!

What is a Tetraploid?

A normal (diploid) ryegrass has 14 chromosomes in each cell. A chromosome is the part of the cell that carries all the genetic information about the organism. By treating the cells in tissue culture with a natural chemical extracted from the autumn crocus (called colchicine) the number of chromosomes are doubled to 28. This effectively doubles the size of the cells (and their sugary contents) creating a tetraploid. This in no way alters the plants' genes.

The History of Tetraploids

Although work on developing tetraploids commenced as early as the 1930's in the USA, the first commercial tetraploid grasses were not introduced until the 1960's by the Dutch. The first variety on the NIAB recommended list was Reveille in 1968. Today the best tetraploids are still of Dutch origin, indeed the varieties with the greatest improvements in persistency, palatability and digestibility are from Dutch breeding and these are the characteristics that lead to better animal production.

DROUGHT TOLERANCE

The deep root systems, larger cells and wider leaves all combine to ensure greater resistance to drought than most diploid varieties. The larger seeds of tetraploids also means that if a drought occurs during the establishment phase, the seeds carry greater water and nutrient resources than diploids, thus increasing their chances of survival.

IMPROVED FORAGE INTAKE

Not only are tetraploids more palatable to livestock, which in itself leads to higher voluntary intake, but research at Hillsborough in Northern Ireland (1997) showed tetraploids such as Elgon are more readily eaten by dairy cows. This is probably due to the way the leaves are angled to the animals' mouth.

RAPID ESTABLISHMENT

On average tetraploid ryegrass seeds are 30-50% larger than diploid ryegrass. This results in improved seedling vigour, increased competitiveness (especially useful when overseeding) and faster establishment, which can lead to earlier utilisation.

HIGHER SUMMER PRODUCTION

The deep, fibrous root system of tetraploid ryegrass enables them to find water and nutrients that lie deep in the soil, thus prolonging production during the drier summer months.

PERSISTENCY AND WINTER HARDINESS

Tetraploids exhibit much better winter hardiness ratings than diploids and recently bred Dutch tetraploids are much improved in ground cover. Together these characteristics reduce the ingress of weeds, minimising maintenance and thus substantially increasing the longevity of a ley.

CUTTING

The sturdy tetraploids stand-up well to the cutter-bar. The higher sugar content provides food for the bacteria in the clamp, thus aiding the fermentation process to produce high quality silage.

OVERSEEDING AND PASTURE RENOVATION

The larger seeded and more vigorous tetraploids have that competitive edge when it comes to pasture renovation. Rapid establishment and the ability to out-compete weeds grasses and the existing sward is vital. So always specify tetraploids when renovating pastures.

GROUND COVER

Plant Breeders have improved the ground cover and sward density in many new varieties; Piamonte, Fornax and Eurostar are notably dense.

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For more details on the Monarch ley mixtures which have Tetraploid Power please visit our website www.limagrain.co.uk/monarch