

Tetraploids

Summary

- Some ryegrass, red clover and lotus varieties are tetraploids. They have four sets of chromosomes per cell.
- Tetraploids usually have bigger darker leaves. In perennial ryegrass, tetraploiding increases palatability.

What is a tetraploid?

Ryegrass, red clover and lotus occur in nature as diploids, meaning each cell in the plant has two sets of chromosomes. Tetraploids have four sets of chromosomes per cell, and have been developed by plant breeders using controlled mutation from standard (diploid) varieties.

This practice was first developed in Holland in the 1960's and has become common in plant breeding. It does not involve gene modification.

Tetraploid characteristics

Tetraploids have larger seed (about double the size of standard), and because of this a higher sowing rate is required. Plants are also larger with bigger darker leaves.

Tetraploid perennial ryegrasses

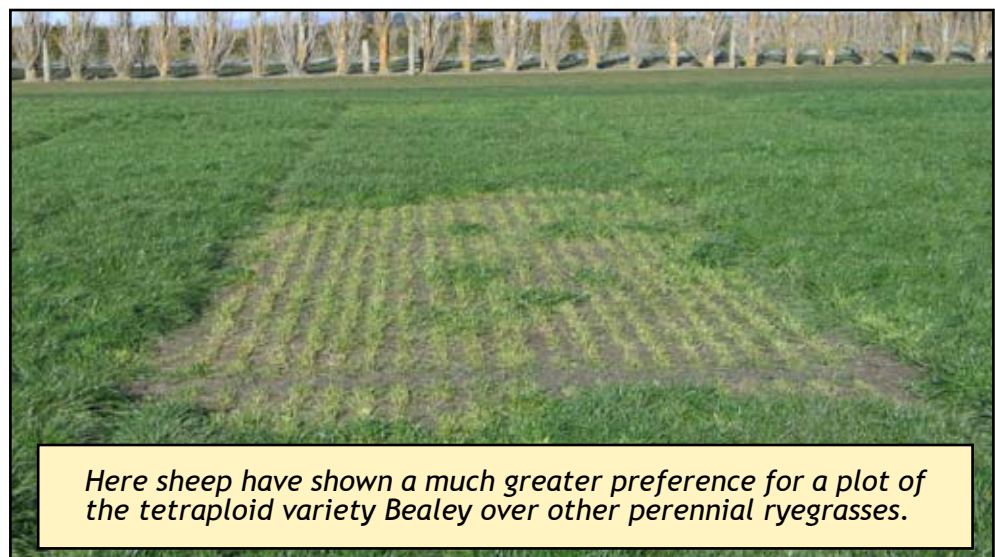
Tetraploid perennial ryegrasses have excellent palatability, higher than diploid perennials. Trials show increased liveweight gains from stock grazing tetraploid perennial pastures. They are suited to farm systems seeking high per animal production.

Grazing management

Tetraploid perennial ryegrasses need good management to get the best from them. Because tetraploid plants are highly palatable, larger and more upright, continual hard grazing and/or prolonged set stocking through summer dry periods can reduce their persistence. Their more open habit also means they are more susceptible to pugging/treading damage by cattle in early spring conditions.

Tetraploid annual and Italian ryegrasses

Tetraploiding annual or Italian ryegrass appears to have little effect on their palatability. This is likely due to them being very palatable anyway.



Here sheep have shown a much greater preference for a plot of the tetraploid variety Bealey over other perennial ryegrasses.