GRASSES

Grasses are the dominant plants in most forage-based enterprises throughout the world. Whether livestock graze native grassland or improved pastures, grasses usually are the basis of the energy and nutrients for animal growth and maintenance.

**Perennial ryegrass**

Perennial ryegrass (*Lolium perenne*) is the most widely sown species in New Zealand, most commonly with white clover. The key benefits include the ability to grow well in a range of conditions, easy and fast to establish (reducing weed issues), easy to manage, good herbage yields and animal performance, reasonable persistence and compatible with white clover. In addition it is able to withstand both animal treading and hard grazing.

**Annual, Italian and hybrid ryegrasses**

These are ryegrass cultivars that persist for 2-5 years. In general their feed quality is very good, usually a little higher than perennial ryegrass at similar stages. The plants in general are erect large-leaved and high yielding. They are cool season active therefore good for winter and early spring production, depending on region.

Early research indicated that these types of ryegrass were preferred over other grasses and that weaner stocking rate and performance is better due to higher potential intakes.

**Ryegrass Endophyte**

A key factor when grazing perennial ryegrass pastures that must be understood is the endophyte status of the ryegrass cultivar.

Ryegrass staggers may be seen when ryegrass is infected with an endophytic fungus. It is a seasonal mycotoxicosis of grazing livestock characterised by tremors, in-coordination and a staggering gait. Deaths occur only as a consequence of accident or starvation.

Outbreaks, in summer and autumn, occur only on pasture in which endophyte-infected (*Neotyphodium lolii*) perennial ryegrass (*Lolium perenne*) predominates and usually on which animals are grazed intensively.

Not all deer are affected to the same degree by ryegrass staggers. Red and fallow deer appear only moderately susceptible to ryegrass staggers while Wapiti are highly susceptible. Staggers can cause deer to have low growth rates, poor conception rates and low velvet production. They are also vulnerable to misadventure and can die of shock.

The current ryegrass cultivars contain new strains of ‘low toxicity’ endophyte such as NEA, NEA2, AR1 and AR37, and ENDO5. These strains produce different levels of alkaloids, and provide different levels of insect control.
Importantly, because the interaction between an endophyte and its host plant differs between ryegrass cultivars, the same endophyte may produce different effects in different ryegrasses.

There have been different responses to these ‘low toxicity’ endophytes, as wapiti have been identified in one instance with staggers on NEA2 pastures, and use of AR37 is not recommended for horses and deer.

**Tall fescue**

Tall fescue is an alternative pasture cultivar for ryegrass in drier regions and also where there are potential issues with subtropical species invasion. In spring tall fescue needs to be grazed frequently to reduce excessive seed head development and high levels of stem as this reduces feed quality.

Some Otago research showed similar liveweight gains (296-332g/day) in spring for weaners grazing either tall fescue/wc or high and low endophyte ryegrass/wc pastures. In summer liveweight gains were lower (21-35%) on all pasture but lowest on the tall fescue pastures. This is likely to be because of the rapid decline in quality of tall fescue leaf as it ages.

**Other grasses**

The main alternate pasture species available are cocksfoot; a range of brome grasses including prairie grass, and timothy.

Cocksfoot is a drought tolerant species and recent breeding has focused on improved palatability.

Prairie grass and grazing brome are best suited to fertile, free draining soils and are reasonably winter active in the warmer areas.

Timothy is best suited to heavier soils in cooler regions. It is a high quality grass and very palatable to stock which reduces its life in a pasture. It is best suited to lax grazing or supplement (silage, summer or winter specialist feed) paddocks.

No work has been reported specifically for deer performance from these cultivars. All may have roles as companion species in future deer systems that use lucerne, plantain, or chicory as specialist crop components of the farms system.

**For further reading:**


*Both of these can be purchased from [http://www.grassland.org.nz/books.php](http://www.grassland.org.nz/books.php)


For information on specific cultivars

[www.agriseeds.co.nz](http://www.agriseeds.co.nz)

[www.agricom.co.nz](http://www.agricom.co.nz)

[www.cropmark.co.nz](http://www.cropmark.co.nz)

[www.seedforce.co.nz](http://www.seedforce.co.nz)

[www.pggwrightsonseeds.co.nz](http://www.pggwrightsonseeds.co.nz)