Perennial ryegrass growing in Tasmania

Suitability factors for assisting in site selection

There are many cultivars of perennial ryegrass (*Lolium perenne* L.), each with their own rainfall requirements. However, in general perennial ryegrass requires the equivalent of at least 600mm of rainfall per annum for productivity and persistence. Ryegrass is a high input grass and favours higher rainfall and good fertility.

Climate

Ryegrass displays some dormancy in hot, dry conditions following flowering. This dormancy is not a true dormancy and continued periods of hot, dry conditions will lead to reduced persistence. For this reason, researchers have placed an emphasis on sowing other species in areas receiving less than 600mm of rainfall. Once dormant, there is a considerable delay in the response of ryegrass to autumn rains. Frost has little effect on leaf quality.

Irrigation

Perennial ryegrass responds well to irrigation, however, some cultivars are more suited than others. High temperatures restrict growth even when moisture is available. This may be an important consideration for irrigators.

Enterprise

Ryegrass is suited to a range of grazing enterprises including dairy, beef, lamb and wool. It fits well into a rotational grazing system. White clover is a good companion legume for perennial ryegrass and this combination forms the basis of many high rainfall pastures in Tasmania.

Soil and landscape

Perennial ryegrass should not be grown in soils with poor fertility. Perennial ryegrass responds well to applications of nitrogen during periods of active growth e.g. in spring. A pH (H_2O) of between 5.6 and 7.0 has been recommended for optimum pasture growth. Optimum levels for extractable phosphorus are 20-30 mg/kg (Olsen P), for sulphur are 8-16 mg/kg (KCl-40), and for potassium are 120-250 mg/kg (Colwell K) depending on soil type. Ryegrass is highly susceptible to damage by corbies and cockchafer grubs particularly on light soils. Perennial ryegrass has good waterlogging tolerance and fair tolerance of acid soils and salinity.

Caution

Ryegrass staggers is an animal disease caused by an endophytic fungus producing a chemical called lolitrem B which is concentrated in the crown of plants. It is particularly prevalent in late summer and autumn. Staggers can be avoided by allowing plant leaves to reach 50 mm in length before grazing. Cultivars that contain a novel endophyte that produces reduced lolitrem B and so cause less animal health problems have been developed and are available. Alternatively, grazing pastures that are ryegrass free during this critical period may help to avoid ryegrass staggers.

Developing rules to guide enterprise suitability mapping

Many plants require particular climatic and land characteristics for best performance. Frost, winter chilling, summer heat, drainage, slope and salinity are some of these characteristics. For each enterprise mapped by the Department of Primary Industries, Parks, Water and Environment (DPIPWE), the Tasmanian Institute of Agriculture (TIA) consulted industry experts and reference material to define land and climate "rules" that distinguish suitable from less suitable areas. These rules define the boundaries between the different classes of the enterprise suitability maps.

Suitability classes used are well suited, suitable, marginally suitable and unsuitable. Any limiting factors are also identified to guide the management practices that could help to overcome the limitations.

Landowners and potential investors are able to access comprehensive soil, climate, crop and enterprise information plus complementary farm business planning tools at:

http://dpipwe.tas.gov.au/agriculture/investing-in-irrigation

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