

Nitrogen use going into summer

Perennial ryegrass plants need nitrogen to convert them from seed head producers back to producers of high quality leaf. Therefore nitrogen application during December and January helps promote vegetative tiller growth.

Perennial ryegrass grows by producing new shoots (called tillers) from buds at the base of the plant. Shoots remain leafy and of high quality except if they become part of the 20-40% of the population that form seed heads in spring. Seed head formation is in fact a death sentence for these shoots because grazing or mowing removes their growing points.

Most of the perennial ryegrass cultivars available to farmers have a tendency for high seed head production in October/November. This feature can have serious consequences. Firstly, pasture quality declines (more stem, less leaf) and secondly, shoot numbers decline (death of seed heads) at the same time as the weather becomes more stressful with the start of summer. Replacing seed heads is essential for ryegrass persistence and continuous growth.

Research by Dexcel (DairyNZ's predecessor) in 1997 showed that the application of nitrogen during early summer (December/January) stimulated the development and growth of new shoots, converting the plant back to a producer of high quality leafy forage. The application of nitrogen boosted shoot numbers by 37% compared with less than half this response to irrigation.

Another Dexcel trial showed an extra 800 kg DM/ha and 66 kg MS/ha could be produced from December to April after 100kg N/ha was applied, split between December and January i.e. a 8:1 kg DM response to a kg of nitrogen.

A simple calculation subtracting the cost of the fertiliser from the value of the milksolids produced, shows this practice is well worth serious consideration. Even at the higher N prices the application of N will be profitable providing that feed utilisation is high. Consideration does need to be given to what form of nitrogen is best to use and importantly the timing of that application. The best results occur with adequate soil moisture, and targeting periods when rain is expected or recently occurred to minimise volatilisation losses and ensure that moisture is not the factor limiting pasture growth.

Other pasture benefits include less weed or summer grass invasion and less need for pasture renovation. However, nitrogen should only be applied where there are the stock to eat the extra pasture grown, and so avoiding accumulation of lower quality pasture.

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