

Blood Urea Nitrogen (BUN) is a problem in some countries, but not in New Zealand when grazing pastures, unless excess short high nitrate pasture is grazed or an excess of artificial nitrogen is applied, both for prolonged periods.

High nitrogen (N) intake relative to carbohydrate and sugars (energy) intake, cause cattle to use some of the N to digest the surplus and excrete the surplus in the form of ammonia in the urine. Urea levels in blood and milk rise and lower the conception rate.

Pasture symptoms are burn patches killing pasture where the cattle have passed high N concentrated urine. These pasture burn patches are worse in dry weather when rain is not occurring to dilute the urine and in heat when cattle perspire more and when potassium levels are high in pasture because excess K is also excreted in the urine.

MUN analyses can help determine if there is a problem. If there is, allowing pasture to grow longer before grazing can reduce it.

MUN levels above 18mg/dl can decrease conception rates, and indicate that protein should be lowered and/or carbohydrates increased. See Elements > Nitrogen.

Very high BUN levels (above 46 mg/dl) can be a cause of low embryo survival and low pregnancy rates, despite good submission rates.

Normal BUN levels are between 15 and 20 mg/dl. Low is below 15 and high is above 25.

Also see Animal Health > Toxins > Nitrates and the Spreadsheet > Blood & Liver Levels.

Many Northern Hemisphere countries apply up to five times more artificial N than New Zealand does. The Fonterra Milk Quality Division said that MUN is not a problem in New Zealand where cows graze pasture 90% of the time, so they don't measure milk MUN levels.

When magnesium levels are low, MUN levels can be higher so fertilising with Serpentine and/or feeding Mg on silage, hay or pasture or in concentrates and/or in drinking water are recommended. Mg oxide ( a fertiliser, not a feed) is bitter so mix it with equal quantities of Solmin or similar soluble minerals and animals will eat it all.

When having to apply nitrogen I suggest using a maximum of 40 kg of N/ha (40 lb/a) in Ammo or Sulphate of Ammonia which gives more pasture growth in winters when most extra pasture is needed. Some in New Zealand apply no N and very few apply more than 40 kg/ha twice a year.

I recommend 40 kg/ha on newly sown pastures before they go yellow once or twice until the clovers produce N which is usually four to six months after sowing it. See Elements > Nitrogen for 36 pages on N.

Clovers have more Ca, Cu, B, Co and Mg, than grasses so add these to mixed pastures and improve pasture and animal health and production.

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\*Queen's honour for services to the farming industry.

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