

TECHNICAL INFORMATION

Soil Audit and Nutrient Management

THE POWER OF SELENIUM!

Adequate selenium is essential for the health and wellbeing of your livestock plus you me and our families.

The amounts required are very small but it is essential that every living creature gets some every day. In the last year or so, we have been analysing soils and forage for this mineral and generally the levels have been low, very low and sometimes absent. You might have some in your soil but it will **NOT** be 'available' to your plants unless other elements are in balance.

Unfortunately too many soils are **NOT** in balance and regular use of N P & K fertilisers plus large doses of slurry in some areas has meant poor soil fertility. The problem is that the fertiliser companies measure soil fertility by the amounts of potassium, phosphate, magnesium and pH in the soil, but this is just a part of the chemistry in the soil and a healthy plant needs up to 20 different



elements - your livestock, you and me need much more than that, so although an element is not needed strictly for the plant to grow, it **IS** needed by who or what eats it.

Too often the soil mineral levels are too high in some things e.g. very high iron which has the effect of 'locking up' other minerals such as copper or selenium. The key to a healthy soil is **BALANCE**. It is the highs and lows that cause problems. You can grow really good healthy forage in a soil with low levels of P & K as long as it is not overloaded by something else - often magnesium.

Many soils contain 4000 - 5000 kg/ha of P_2O_5 in the top 15cm/6" and over 10,000 kg of K_2O and yet everybody worries about putting these two elements on. Sales of 0 - 24 - 24 and 0 - 20 - 30 are still the number one blended autumn fertiliser, I really should not use the word fertiliser for these products as they certainly are **NOT** fertilisers.

Your crops do need access to this vast store of P & K but that is not chemistry function, it is the biology that will make these elements 'available' to your crops.

For years scientist's said that a plant required 15 then 16 different elements, a few years ago they put that up to 17 and now, lo and behold we suddenly need 20. I wonder what it will be in another 10 years; and at the moment selenium is not one of them!

BIO-Logical farming works!

Fact is that for your grass to be healthy and sustain healthy stock it needs more like 40 to 50 different minerals and an adequate amount of selenium is one of them. In sheep a deficiency of selenium directly causes 'white muscle disease' so called because of the calcium deposits on the muscles making it look white. Other effects on sheep include:

- Weakness in lambs and stiffness in the hind quarters
- Scouring and general poor health
- Slow growth - poor wool growth
- Muscle wasting - Myopathy
- Heart failure and death

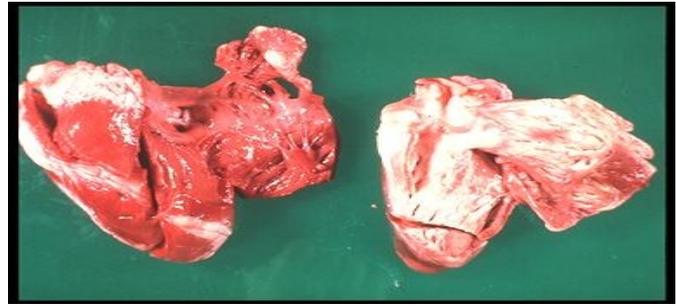
In cattle the effects are:

- Reproductive disorder
- Erratic or silent heats
- Poor cycling and delayed conception
- Retained placenta
- Ovarian cysts
- Early abortion
- Hoof and leg problems
- Stiffness and arched back
- Lowered resistance to disease
- Anaemia and low iodine
- High somatic cell count
- Reduced weight gain
- Milk yield reductions

Supplementation will help to provide these essential minerals but it is also required in the gut by the *villi bacteria* and the best way is for it to be in the grass/forage so that the stock get a small amount every day.

Adequate selenium will also increase copper retention and increase iodine levels in the forage - so you can see how very important this micro-nutrient is. Conversely it can be 'locked up' by applications of DAP or MAP, high levels of sulphur, iron and a low pH will reduce 'availability'.

For almost 100 years UK farmers used *Basic Slag* as their preferred grassland fertiliser. This regular application maintained the essential trace elements including cobalt and selenium. For the last 35 years nothing but NPK and the occasional low quality lime has been applied!



Above : White Muscle disease caused by low levels of Selenium

One of the reasons that calcium is so important is that calcium will reduce sulphur and iron levels as well as raise soil pH - after all calcium is the number one nutrient - bar none.

Like any of these micro level elements an excess can be just as damaging as a deficiency, which is why it is essential to check your soil **AND** grass/crops growing there. Only apply in very small quantities when and as required, preferably with a range of other essential minerals.

For the future '*The Better Grass Program*' will check your soil and grass levels and a specialist fertiliser will be produced for you - specially designed to balance **ALL** of the minerals for **MAXIMUM** stock health.

'*The Better Grass Program*' will improve true soil fertility, we will advise on types and timing of any additional fertilisers that might be required and help you get the best return from your fertiliser budget.

Soil analysis for selenium is quite expensive and Agri Labs will charge approximately £30 just for this element alone. Independent Soil Services will carry out a complete soil fertility audit to include selenium plus cobalt, molybdenum, copper, zinc and 'available' levels of phosphate, potassium, magnesium and calcium. Do remember that pH does not measure the need for calcium but calcium is **THE** controlling mineral. This detailed soil analysis comes as part of '*The Better Grass Program*'.

To find out more please telephone, if you are not already a member you should be!

Ring

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