

## POTASH DEFICIENCIES ARE HITTING SILAGE POTENTIAL

**A new survey by Promar International suggests that many dairy farms will see lower silage yields this year because of recent cut backs in the application of potash.**

Analysis of soil samples from over 200 farms in North West England collected by Promar showed that over 40% of sampled fields are potash deficient (see graph), and according to consultant Sandra Callwood, this indicates probable reduced crop output.

“Soil potash status is expressed in indices, with 2 being the target index,” she explains. “Indices below 2 indicate that insufficient potash is available to support optimum plant growth, and a need for additional potash applications. At a soil index of 0 potash deficiency can cost up to £75/ha in lost production and cut silage yields by up to 15%, equivalent to 1.5 tonnes of dry matter per hectare.”

Potassium plays three crucial roles in plants, all of which affect yields. The main role is the control of water relationships in the plant. Potassium also plays a vital role in the transport of sugars and other products of photosynthesis from leaves to storage organs while small quantities are needed to support many of the crucial enzyme processes within the plant.

“Adequate potassium is essential not only for a crop to achieve its full yield potential but also for many aspects of silage quality, its dry matter, starch and sugar content.

Mrs Callwood explains that potash deficiency is most common in silage fields, which she says isn't surprising. “Silage production is potash hungry work and a typical three-cut system uses 280kg/ha per year. Grazing fields will be continually topped up with potash from manures which often doesn't happen with silage fields.”

The only way to understand the potash status of soils and to avoid yield depression is to carry out regular soil analysis and Mrs Callwood recommends analysing 25% of fields every year.

She advises that a potash deficiency should be tackled separately from the standard fertiliser policy. If using inorganic fertilizer she recommends applying muriate of potash which contains 60%  $K_2O$ . This should be spread in the autumn/winter. Alternatively better use could be made of slurry. A typical application of 2,300 gallons (10 tonnes) would provide 29kg of available potash.

“The tendency is to spread slurry on the fields closer to the farm buildings, but these also tend to be grazed, and consequently they have a very low potash requirement. Most farmers can address potash deficiency cost-effectively by re-thinking their slurry and FYM applications as part of a balanced Nutrient Management Plan.”

According to Mrs Callwood the crucial factor in replacing potash is to apply it on a ‘little and often’ basis. She advises that no more than 80 kg/ha (64 units/acre) should be applied in a single dressing to minimise the risks of ‘luxury uptake’. Where more than 80 kg/ha is required for 1st cut silage, the extra should be applied the preceding autumn.

“In two cut systems, apply an extra 60kg/ha (48 units/acre) following the last cut or by the autumn. Where grazing follows cutting, this may be applied as an extra 30kg/ha (24 units/acre) potash per grazing for up to two grazings. No potash should be applied in spring to fields which may be grazed before closing up for silage to reduce the risk of grass staggers,” Mrs Callwood concludes.

Grant aided nutrient management plans, which include 10 free soil samples, are available now to farmers in the North West. For more information please ring 01270 616 800.

### Frequency distribution of potash indices across 200 farms in the North West

