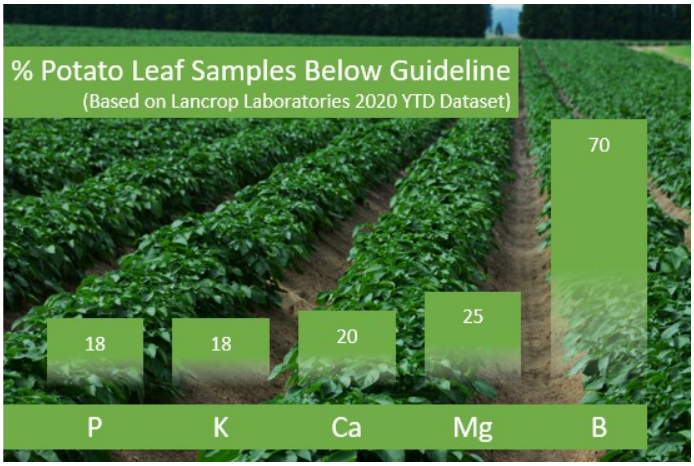
Knowledge grows

Yara Analytical Services
Technical Bulletin

Potato Nutrient Status June 2020

Tissue analysis of potato crops, either petiole or youngest fully developed leaf, can provide an accurate guide to a crop's nutrient status and identify the likelihood of nutrient disorders that can impact on both tu-ber yield and quality. It also shouldn't be forgotten that adequate nutrient supply is important for plant health, improving resistance or tolerance to disease.

Looking at the results of samples processed so far during 2020, nutrient levels on the whole look reasonably good but there are some key nutrients that are repeatedly showing up as deficient in a significant proportion of samples.



The deficiency rates observed in the samples process so far this season can be seen in the chart above.
Use Broad Spectrum Leaf testing to assess whether your crops could benefit from additional nutrient inputs.

Phosphorus – Phosphorus availability at tuber initiation is important to ensure maximum tuber set. Beyond tuber initiation availability is critical to ensure adequate tuber size and, therefore, crop yield. Because phosphorus is relatively immobile in the soil, tissue analysis is key to the early identification of a potential deficiency, particularly where soil supply is impaired by unsuitable conditions such as sub-optimal pH, compaction, cold soils and during drought conditions. In these scenarios foliar phosphorus ensures rapid and unimpaired availability.

Potassium – Potassium is required in large quantities throughout the crop's life. Whilst it is common knowledge that adequate supply of potassium is critical to achieving high yields, it also plays a role in reducing levels of tuber bruising.

Calcium – Calcium is a vital nutrient for the production of high quality potatoes. Any deficiency will increase the risk of IRS and skin quality issues such as black scurf, powdery scab and bruising. Due to calcium being immobile in the plant, soil applications will always be the most effective way of ensuring supply but foliar applications can help ensure that calcium remains in the tuber-zone. Foliar applications have also been known to reduce the incidence of IRS.

Magnesium – Present at the center of every chlorophyll molecule, magnesium plays a key role in maintaining crop canopy and any deficiencies will impact on crop yield. Please note that deficiency in the developing crop can be induced following large applications of potassium meaning tissue analysis may be more reliable than looking at soil levels alone.

Boron – Boron supports calcium absorption so it is important to ensure the two nutrients are in adequate supply. Alongside potassium, calcium and magnesium, boron is an key component of cell walls and, therefore, affects tuber storage and quality. Following the drought conditions of spring 2020, it is perhaps no surprise to note that 2 out of every 3 potato leaf samples processed through our laboratories are below our guideline for boron.

Yara Analytical Services
Wellington Road, The Industrial Estate
Pocklington, York. YO42 1DN
Tel: 01759 305116 Fax: 01759 306955
Email: ypl.laboratory@yara.com
www.yara.com/analysis