

Annual Soil Summary

NRM is the UK's leading provider of agronomic analysis.

Every year we publish summarised data from thousands of samples from farms across the country. Our soil, plant tissue, harvested crops, and inputs analysis helps farmers and their advisors understand their nutrients status and benchmark against other farms. This data helps them plan and implement insightful management decisions to prepare them for the coming season.

The 2022 - 2023 summary includes data from soil samples collected between June 2022 and May 2023. The nutrient levels outlined in the 9th edition of the RB209 are used to summarise our data for phosphorus, potassium, and magnesium in the soils of four different crop categories.

Our results show that 36% of arable samples were above P index 2 (11% lower than samples analysed in the same period in 2021 - 2022), and only a third of samples were at the recommended index. High soil phosphorus can not only result in losses to the environment through erosion, impacting water quality and habitat loss, but it can also result in nutrient imbalance and soil structure degradation. A significant proportion of samples, nearly 37%, were also below K index 2. Lower availability of soil potassium can have profound implications for soil growth and development, especially under the droughted conditions during late spring and summer which we have seen over the past few years.

Once again, we saw another increase in grassland soil samples due to more farmers sampling to comply with the Farming Rules for Water and SFI requirements. Whilst only 4% of the samples were the below target index for Mg in 2022, 2023 saw more than 11%. A shortage of magnesium can result in hypomagnesemia, also known as grass tetany or grass staggers. This condition is characterised by low levels of magnesium in grazing animals, which could result from high levels of soil potassium and nitrogen in the forage. Taking steps to mitigate issues before they affect production using analysis insights is crucial to ensure optimal crop yield and production.

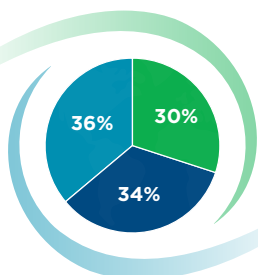
To book analysis for your farm or for help interpreting your results,
talk to your agronomist or contact us.

Summarised Results



Arable Soils

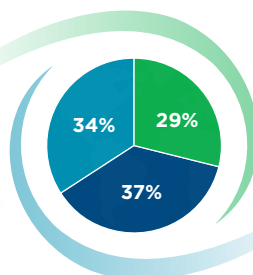
Phosphorus



30% of soils at target value

■ > Index 2 ■ < Index 2
■ Index 2

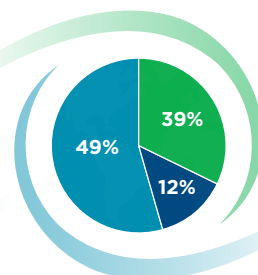
Potassium



29% of soils at target value

■ > Index 2 ■ < Index 2
■ Index 2

Magnesium

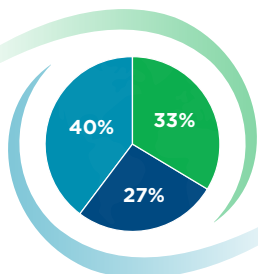


39% of soils at target value

■ > Index 2 ■ < Index 2
■ Index 2

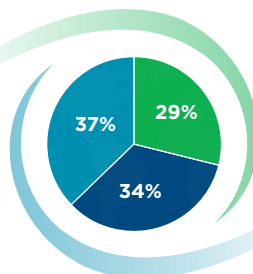


Grassland



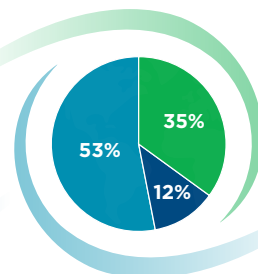
33% of soils at target value

■ > Index 2 ■ < Index 2
■ Index 2



29% of soils at target value

■ > Index 2 ■ < Index 2
■ Index 2-

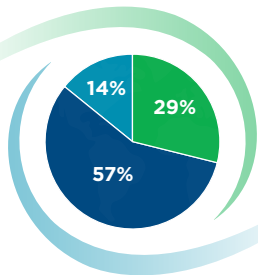


35% of soils at target value

■ > Index 2 ■ < Index 2
■ Index 2

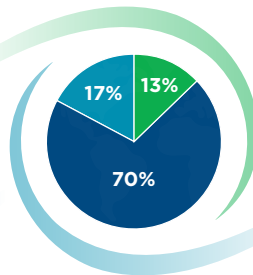


Vegetable & Bulb Soils



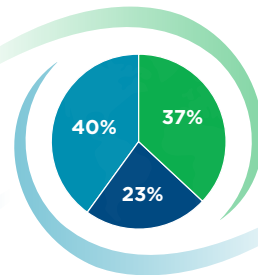
29% of soils at target value

■ > Index 3 ■ < Index 3
■ Index 3



13% of soils at target value

■ > Index 2 ■ < Index 2
■ Index 2+

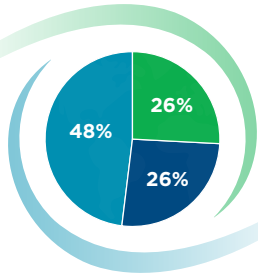


37% of soils at target value

■ > Index 2 ■ < Index 2
■ Index 2

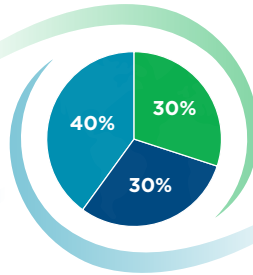


Fruit, Vines & Hops Soils



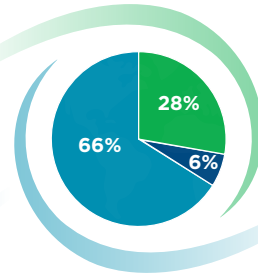
26% of soils at target value

■ > Index 2 ■ < Index 2
■ Index 2



30% of soils at target value

■ > Index 2 ■ < Index 2
■ Index 2



28% of soils at target value

■ > Index 2 ■ < Index 2
■ Index 2

2022-2023 Soil Summary

N-Check, when used in conjunction with soil, plant tissue, and grain analysis, will help you make the best decisions every season for optimal crop production and yield.



Measuring soil mineral nitrogen levels in spring determines how much soil nitrogen remains after winter. Booking analysis before applying fertiliser will help you tailor your nitrogen applications so you only apply what you need. This saves you money and helps you ensure you're on track for bumper crops.

Since launching our N-Check soil mineral nitrogen packages in 2022, we have analysed over 17,000 samples. Our innovative N-Check analysis service analyses soil for Nitrate-Nitrogen, Ammonium-Nitrogen, soil mineral nitrogen, and gives a total value for the combined soil depth.

Our premium package, N-Check Plus, also includes soil organic matter analysis. Measuring soil organic matter enables an estimate of organic nitrogen to be determined. By following the RB209 Measurement Method, the SNS index can be reported if an estimate of spring crop nitrogen has been supplied.

Not only can understanding the nitrogen content of your soil save you spending money on expensive fertiliser where it's not needed, but it's designed to support you in optimising crop production and therefore increase profit margins.



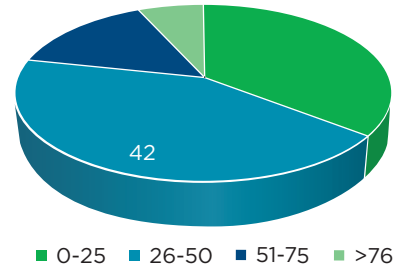
NRM Focus: N-Check

Results to date

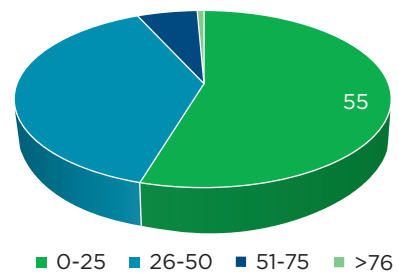
- N-Check data from 2023-2024 showed that 42% of samples in the top 0-30cm of the soil had 25-50kg N/ha, whilst 55% in the 30-60cm layer contained 0-25kg N/ha and 80% of samples in the 60-90cm layer contained 0-25kg N/ha.
- These numbers vary considerably from N-Check data from 2022-2023. For example, whilst the top layer (0-30cm) of soil contained the highest mean quantity of soil mineral nitrogen (SMN) in 2023-2024, this layer contained the lowest mean quantity of SMN in 2022-2023.
- Overall, the number of samples analysed during 2023-2024 are up about 25% compared to those analysed in the same period in 2022-2023.

Whilst these results are based on a comparatively small number of samples, the impact of an extremely wet autumn followed by a wetter and milder-than-average December 2023 and January 2024 could have resulted in SMN leaching from the deeper soil layers. We also saw poor establishment of winter sown cereals in 2023, which has likely contributed to higher SMN content in the top layer of soils. Both factors mean SMN is less available for crop uptake.

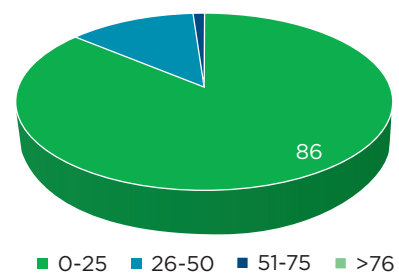
SMN (kg/ha) at 0-30cm depth



SMN (kg/ha) at 30-60cm depth



SMN (kg/ha) at 60-90cm depth



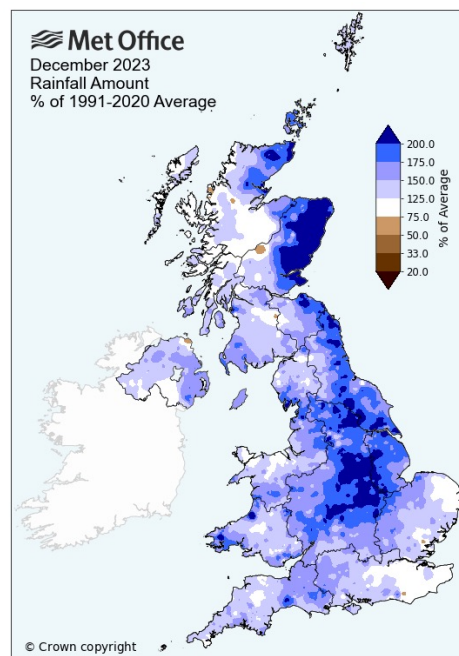
Did extremely wet weather during the season impact soil mineral nitrogen levels?

SMN is a readily available form of nitrogen for plant uptake, made available through the breakdown of soil organic matter with the help of soil microorganisms. Determining both ammonium-N (NH_4^+) and nitrate-N (NO_3^-) allows us to understand the amount of crop available soil mineral nitrogen and forms the basis of spring nitrogen management plans.

Nitrate-N can be lost through leaching due to heavy winter rainfall. The losses can vary significantly depending on the soil type, weather conditions and soil and crop management practices. It's critical to measure soil nitrogen in the spring ahead of any nitrogen applications so informed management decisions can be made.

It's best to target nitrogen applications when there is sufficient soil moisture, and when the soil in the root zone is 5-6°C or higher. These conditions are best for the rapid uptake of nutrients and help to reduce losses, improving nitrogen use efficiency (NUE). If heavy rainfall is forecast, it's best to postpone applying nitrogen to reduce the risk of nitrate leaching or loss through runoff.

Ultimately, using soil measurements and innovative analyses to guide management decisions helps build resilience, sustainability, and ongoing productivity in our growing systems.

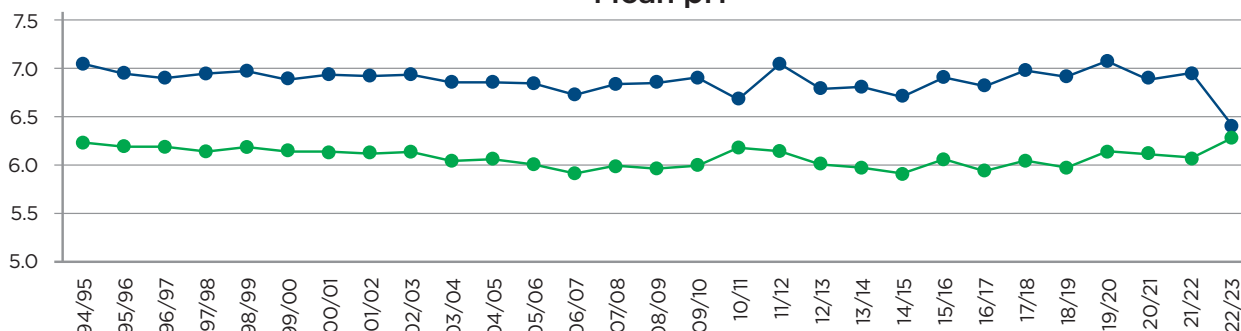


For further information on CropCheck and GrainCheck talk to your agronomist or contact our customer services team on **01344 886 338**.

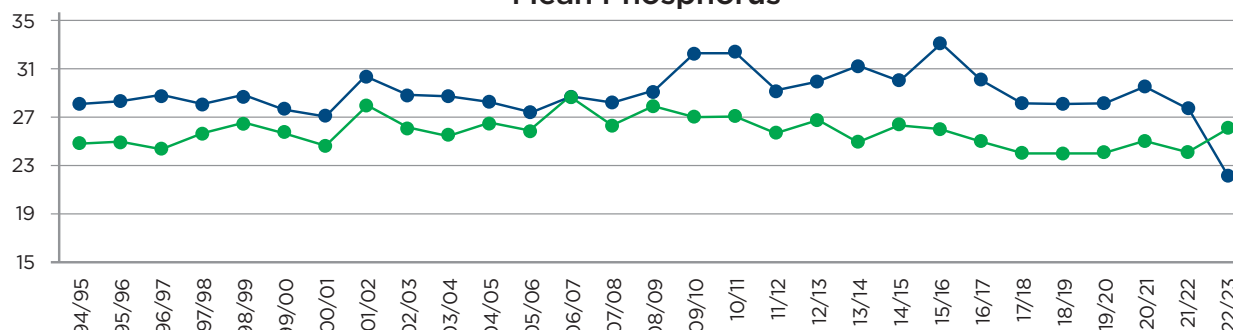
1994-2023 Trends

Grass samples Arable samples

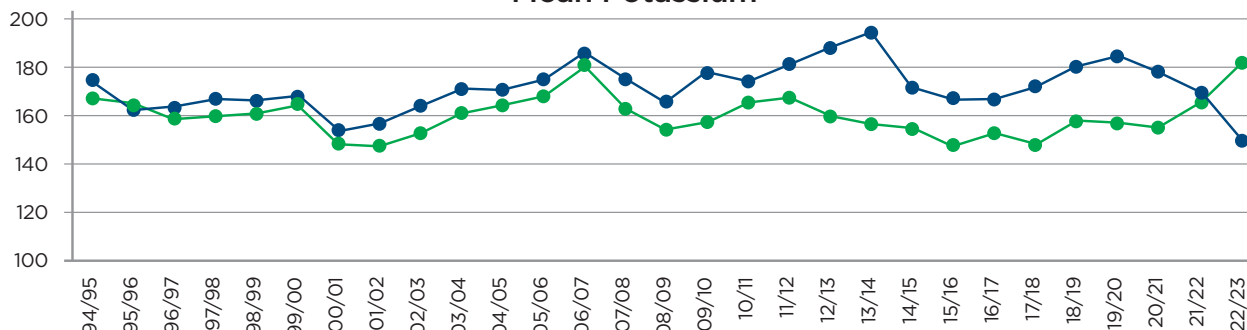
Mean pH



Mean Phosphorus



Mean Potassium



Mean Magnesium

