

Title

Fertiliser Planning in Denmark: In-season Adjustment and Post-season Evaluation Hold Significant Potential to Improve Nutrient Use Efficiency

Objective

The purpose of this Policy Brief is to summarise insights gathered in NUTRI-CHECK NET on how optimisation of nutrient application in Danish crop production can be strengthened by increasing the focus on evaluating and adjusting fertilisation strategies both during the growing season and after harvest. Analyses from the project show that the evaluation step is one of the least utilised elements of nutrient management.

Denmark already has comprehensive regulations² and tools for fertilisation, including nitrogen quotas, fertiliser plans, and fertiliser accounting. These provide a solid foundation for planning, but there is currently no standardised approach for systematically evaluating how well the year's fertilisation strategy actually performed—for example in relation to yield, nutrient use efficiency, or seasonal variation. Furthermore, better guidance and nudging towards making in-season adjustments may improve fertilisation practices.

Project results indicate that these steps hold substantial potential for increasing nutrient use efficiency and improving fertilisation strategies³.

Methodology

- A 9-nation Thematic Network called 'NUTRI-CHECK NET' was formed from 2023 to 2025, with 26 Crop Nutrition Clubs (CNCs) of farmers & advisors and 9 National Expert Groups (NEG). Project partners reviewed stakeholder (CNC & NEG) attitudes, costs and benefits to addressing CNM challenges and adopting available tools.
- Crop nutrient management (CNM) guidelines and tools to support farmers and advisors were reviewed across the 9 partner countries. Information was categorized into broader management stage categories - 1. Planning, 2. Checking & Adjusting and 3. Reviewing.
- Stakeholders were surveyed and interviewed, including to understand whether reviewing and reflecting on nutrient management success formed a common aspect of nutrient management approaches.
- Stakeholders were also surveyed and interviewed on common needs, gaps and barriers of tools to support nutrient management decision making.

Key findings

- A 9-nation Thematic Network called 'NUTRI-CHECK NET' was formed from 2023 to 2025, with 26 Crop Nutrition Clubs (CNCs) of farmers & advisors and 9 National Expert Groups (NEG). Project partners reviewed stakeholder (CNC & NEG) attitudes, costs and benefits to addressing CNM challenges and adopting available tools.
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Policy Implications & Recommendations

It is recommended that greater attention be directed towards the evaluation phase of fertiliser planning, as this stage currently receives far less focus than the planning phase. Clear and practical guidelines should be developed to support farmers in assessing how their fertilisation strategy actually performed, for example using yield data, field observations, or nutrient use efficiency.

A stronger emphasis on systematic knowledge collection during the season is also recommended, enabling farmers to make more informed adjustments along the way and document experiences that can later feed into a more structured end-of-season evaluation.

A more balanced focus between the three phases of nutrient management—Planning, Check & Adjust, and Evaluation—should be emphasised. While the planning phase is well-developed in Denmark, the latter two phases are used to a much lesser extent. Increasing the utilisation of these phases should be promoted as a key component of good agricultural practice, with potential benefits both agronomically and economically.

Finally, nudging initiatives and clear communication about the benefits of evaluation may encourage farmers to prioritise follow-up and learning as central elements of their annual nutrient management routines.

Key References

1. Wall et al., (2023). Report: Drivers, needs, challenges and barriers for farmers to improve arable crop nutrition and the adoption of nutrient management decision tools and technologies. NUTRI-CHECK NET. Available at <https://ec.europa.eu/research/participants/documents/downloadPublic?documentIds=080166e506b3d0ef&appId=PPGMS>
2. <https://lbst.dk/planter/goedning/goedsknings-og-harmoniregler>
3. Kendall, S. (2025). 3 Step checking approach to nutrition management at Nutri-Check Net final conference: [Final Conference | 18th November 2025 | Brussels - YouTube](https://www.youtube.com/watch?v=KJyfJyfJyfJ)