Press Release

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Successful sugarbeet field trial: Reduce fertilizer use and cut carbon emissions while maintaining the same yield

With precise fertilization, nitrogen fertilizer use, and hence carbon emissions, can be reduced in sugarbeet cultivation with no appreciable yield losses. This is the result of a field trial conducted at several locations by KWS in collaboration with renowned partners – the Kverneland Group, SKW Piesteritz, and the South Westphalia University of Applied Sciences.

By promoting sustainable agriculture and minimizing resource use, KWS has set ambitious, measurable goals for itself to deliver solutions for sustainable agriculture. That's exactly what the research project "Precision spot fertilization in sugarbeet" is targeting: During the last growing season, a study was conducted to determine whether sugarbeet deliver the same yield with reduced fertilizer use. Fertilizer was applied with high precision directly to the seed pellet. "We are delighted that the field trial impressively confirmed our assumption: With precise spot application of the fertilizer and by reducing the amount of fertilizer by 25 percent, we were able to achieve the same sugar yield as in the comparison method with 100 percent surface application," says Nils Rusek, who conducted the project on behalf of KWS. Emission reduction consists of two components: reduced emissions in the field through lower application rates, and savings in fertilizer production. The primary source of emissions in arable farming is nitrogen fertilization; this is therefore where the largest reduction in carbon emissions can be achieved.

Agriculture is currently facing major challenges: For example, in view of stricter guidelines on emissions reporting (CSRD)[1], there is growing demand for more sustainable cultivation methods among partners in the supply chain. The relevance of the findings is further heightened by the planned introduction of carbon tax in many EU countries. Denmark has already set the ball rolling, other markets could follow. "As a breeding company with clear sustainability goals, we are convinced that innovative plant breeding plays a key role in meeting these challenges," says Dr. Imke Hering, Team Lead at Group Strategy Department at KWS. "We ensure this through our seeds, which are becoming increasingly high-yielding and healthier, and by driving forward research projects that help make agriculture even more efficient and more resource-conserving."

Project description:
The research project "Precision spot fertilization in sugarbeet" was initiated by KWS and carried out together with three partners. KWS provides the seed; the Kverneland Group, with its Kverneland Optima pneumatic precision seeder, adapted for sugarbeet sowing, ensures the use of state-of-the-art technology; and SKW Piesteritz, with its climate-friendly fertilizer ALZON neo-N, ensures the use of high-quality fertilizer products. The South Westphalia University of Applied Sciences also provides support in evaluating the results.
The project was carried out on three farms in Germany. Two different methods of precision fertilizer application were tested in comparison to surface fertilization. Spot fertilizer application produced convincing results: No relevant loss in sugar yield was observed with reduced fertilizer use.

[1]: Corporate Sustainability Reporting Directive: Sustainability reporting, which is mandatory for larger companies (1,000 employees, more than 450 million in revenue) in the value chain

About KWS
KWS is one of the world's leading plant breeding companies. Around 5,000 employees* in more than 70 countries generated net sales of around €1.68 billion in the fiscal year 2024/2025. A company with a tradition of family ownership, KWS has operated independently for 170 years. It focuses on plant breeding and the production and sale of seed for sugarbeet, corn, cereals, vegetables, oilseed rape and sunflower. KWS uses leading-edge plant breeding methods to continuously improve yield for farmers and plants' resistance to diseases, pests and abiotic stress. To that end, the company invested approximately €350 million last fiscal year in research and development.
*excl. seasonal workforce

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