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The Rye-SaFe study aims to provide evidence that new feeding concepts promote animal health

Rye is experiencing a kind of renaissance in many regions of Europe: The domestic cereal also grows in nutrient-poor soils; requires less fertilizer than, for example, wheat; needs less water; and, in general, enjoys good plant health. With these characteristics alone, rye makes a significant contribution to boosting agricultural sustainability.

Recent studies have demonstrated that providing rye-rich feed to pigs also promotes the animals' health. In light of this, the Federal Ministry of Food and Agriculture (BMEL) has now given the go-ahead, and has thus granted approval, for the Rye-SaFe project. Rye-SaFe aims to investigate if salmonella contamination in sow husbandry and piglet production can be reduced by using rye-rich feed. KWS is involved in the research project from the industry side along with the livestock cooperative Viehvermarktung Walsrode as a project partner; other businesses of the German Raiffeisen Association; the University of Veterinary Medicine Hannover, Foundation; and additional project partners.¹

KWS is already involved as an industrial partner in the 6-R² project funded by the BMEL. Among other aspects, this project is also examining the connection between higher rye content in feed and lower salmonella levels. The investigation is being carried out in pig farms. "In addition to the research project, we have carried out an exceptionally interesting field study involving more than 117,000 feeder pigs on 11 farms," explains Willi Behrens of Viehvermarktung Walsrode. "It was possible to reduce salmonella contamination among the animals by two-thirds — entirely without medication and only by changing the feed." The 6-R² project provides scientific proof of this. Rye-SaFe will begin at an earlier step and investigate how salmonella contamination can be reduced by employing new feeding concepts before the pigs are even transferred to fattening farms. "We have found that many piglets already have salmonella when they're delivered to the farms, so we have to ensure the contamination levels of the sows — and subsequently, of course, the piglets — are lower," Behrens says. Fewer animals exposed to the salmonella pathogen means the animals are healthier and fewer antibiotics have to be used in the pens. This also has a positive impact on food safety since salmonella can be transmitted from animals to humans. As Behrens states: "If we can achieve all this — improved animal welfare, less medication and safer food — by simply implementing new feeding concepts, all sides will have gained a lot." Rye-SaFe is also supported by large-scale field studies involving more than 3,000 sows, thus providing the scientific project with practice-based data. Combining a research project like Rye-SaFe with field studies was only possible through the close cooperation between the livestock cooperative Viehvermarktung Walsrode and the seed breeding company KWS.

Modern hybrid rye varieties for safe animal feed

The ability to confidently use rye in animal feed today is due to modern hybrid rye varieties with PollenPlus® technology, a development from KWS. "Rye has always been quite susceptible to the ergot fungus, which poses a problem for both human and animal health," explains Dr. Andreas von Felde, who heads the animal feed projects for KWS. Due to rye's open flowers, ergot spores can more easily gain access to the plant. In modern varieties, significantly improved pollen formation, quicker fertilization and rapid husk closure help to significantly reduce rye's susceptibility to ergot. KWS has integrated these plant traits into the new rye varieties using traditional, natural breeding techniques. As von Felde states: "Ergot would considerably impact the fertility of animals, especially in sows. Thanks to

progress made in plant breeding, we've succeeded in developing modern hybrid rye varieties with PollenPlus® technology that are virtually free of ergot.”

1. University of Veterinary Medicine Hannover, Foundation (project coordinator), represented by Prof. Christian Visscher; University of Rostock, represented by Prof. Petra Wolf; Institute of Environmental Technology and Energy Economics at the Hamburg University of Technology, represented by Prof. Martin Kaltschmitt; AniCon Labor GmbH.

2. The abbreviation 6-R derives from the project title “Regionale Renaissance von Roggen und Raps zur Reduktion von Problemen in Pflanzenbau und Tierproduktion durch Reevaluation der Inhaltsstoffe und deren gezielte Nutzung zur Förderung des Umwelt-, Tier- und Verbraucherschutzes” (“Regional renaissance of rye and rapeseed to reduce problems in crop and livestock production through the reevaluation of substances and their systematic use to support environmental, animal and consumer protection”).

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About KWS*

KWS is one of the world's leading plant breeding companies. In the fiscal year 2018/19, more than 5,500 employees in 70 countries generated net sales of EUR 1.1 billion and earnings before interest and taxes (EBIT) of EUR 150 million. A company with a tradition of family ownership, KWS has operated independently for more than 160 years. It focuses on plant breeding and the production and sale of seed for corn, sugarbeet, cereals, rapeseed, sunflowers and vegetables. KWS uses leading-edge plant breeding methods to increase farmers' yields and to improve resistance to diseases, pests and abiotic stress. To that end, the company invested approximately EUR 200 million last fiscal year in research and development.

*All indications excluding the results from the companies accounted for using the equity method AGRELIANT GENETICS LLC, AGRELIANT GENETICS INC. and KENFENG – KWS SEEDS CO., LTD.

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