





Background

Phosphorus (P) is a limited essential nutrient with a lifetime of 250 years. The fate of phosphate in the environment equals an open cycle. Phosphate is supplied by mining and fertilizer production, followed by different steps of phosphate utilization, including primary production, animal feed, human food and conversion of biomass, with accumulation in soils, little recycling and severe environmental losses. Closing P cycles and reducing phosphate consumption are, thus, future challenges.



The phosphate cycle in a future scenario with maximized phosphate use efficiency and minimized losses.

© Background: Frontiers of Agricultural Science and Engineering, Higher Education Press, Beijing, 2019

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Funded by







Sino-German International Research Training Group: "Adaptation of maize-based food-feed-energy systems to limited phosphate resources"

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More than 30 scientists from Germany and China and 35 German and Chinese doctoral candidates jointly work on various research questions related to the P cycle in Germany and China.

Research Focus

Research hypothesis: Under phosphate-limited conditions, high productivity and high phosphate use efficiency can be achieved simultaneously by adapting phosphate cycling and availability (sources) to the multipurpose phosphate demands (sinks) in maize- based food-feed-energy systems.

Thirteen joint research groups, from the University of Hohenheim and the China Agricultural University, each work on different areas of the phosphate cycle. The 13 Research Subjects (RS) are organized along four Subject Areas (SA), dealing with (1) Genetic Potential, (2) Management at Field and Farm Level, (3) Nutrition and Recovery and (4) Economic Evaluation and Synthesis.



Maize-based agricultural food-feed-energy systems in China and Germany together represent all aspects of maize production in contrasting and complementing situations.

Maritime Temperate Climate

Educational Programme

The educational programme for the German and Chinese doctoral candidates includes joint block seminars (two per year, alternating between China and Germany), thematic field trips, case studies, methodological courses, doctoral candidates' conferences and intercultural training sessions.

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