



Information

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Education Background

Sep 2016 - Jun 2020

Shenyang Agricultural University

Major: Land Resource Management

Bachelor of management

Sep 2020 - Jun 2023

Shenyang Agricultural University

Major: Resource utilization and plant protection

Supervisor: Prof. Fujun Sun

Master of agronomy

Sep 2023 - Present

Shenyang Agricultural University

Major: Land Resources and Information Technology

Supervisor: Prof. Zhenxing Bian

Doctor of agronomy

Publications

1.

Guan, D., H. Gu, Z. Bian, C. Wang, X. Guo, and H. Sun. 2025. " Evaluating the Influence of Deep Tillage Depth and Complementary Technologies on Soil Properties and Maize Yield: Evidence From a Meta-Analysis." Land Degradation & Development 1–18. **(IF=3.7)**

2.

Deyang Guan, Xiaodong Cao, Yuhang Cheng, Qiubing Wang, Hualei Li, Yunzhi Wang, Zhuodong Jiang, Fujun Sun. Major Type of Mattic-Epipedon Ruptures in Alpine Meadow Ecosystems on the Qinghai–Tibet Plateau[J]. Ecosystem Health and Sustainability, 2023, 9: Article 0082. **(IF=4.2)**

3.

Chuqiao Wang, Zhenxing Bian, Yufei Zhang, **Deyang Guan**. Direct and indirect effects of linear non-cultivated habitats on epigaeic macroarthropod assemblages[J]. Ecological Indicators, 2024, 160 111871-. **(IF=7.0)**

4.

Zhang Y ,Bian Z ,Guo X ,Wang C ,**Guan D** ,et al.Strategic land management for ecosystem Sustainability: Scenario insights from the Northeast black soil region[J].Ecological Indicators,2024,168112784-112784. **(IF=7.0)**

Research Experiences

Research in the Key Laboratory of Cultivated Land System Protection, Department of Natural Resources of Liaoning Province

- Field research in the Qinghai-Tibet Plateau for two consecutive years revealed the types and distribution of Mattic-Epipedon.
- Explored the mechanism of Mattic-Epipedon cracking based on spatial and field data (e.g. spatial mapping and modeling).
- Geophysical detection technology (e.g. ground penetrating radar, ground feature spectrometer, etc.) was used to investigate the thickness of the cultivated layer, moisture characteristics and

element content in the black soil area of Northeast China.

- **Major projects:**

1. **National Natural Science Foundation of China, No. 32371656. (National level)**
2. **National Natural Science Foundation of China, No. 42077002. (National level)**
3. **National Key R&D Program of China, No. 2023YFD15001. (National level)**
4. Spatial allocation mechanism of non-crop land in farmland landscape of Xialiaohe Plain region. (National level)
5. The third national soil survey. (National level)
6. Compilation of territorial planning of Liaoning Province. (National level)

- **Research Content during PhD**

- To integrate the existing protection and utilization technology models in black soil areas, explore the key indicators of different technologies, solve problems and other characteristics.
- To establish an evaluation index system for the suitability of conservation and utilization technologies, and clarify the degree of matching between technologies and climate conditions, farming conditions, soil conditions, etc.
- To explore the impact mechanism of different key technologies on soil production potential.
- To establish precise configuration rules for conservation and utilization technologies, propose conservation and utilization technology models suitable for different conditions and types, conduct simulation predictions, and clarify the implementation effects.

Awards & Honors

- **Third Prize**, China Graduate Students' "Beautiful China" Innovation Design Competition - Innovation Contest on Biodiversity Conservation and Utilization, December, 2024. **(National level)**
- **Third Prize**, The first Youth Green Technology Innovation Competition, April 2024. **(National level)**
- Excellent Volunteer of Chinese Society of Agricultural Engineering Land Use Engineering Committee 2023 Academic Annual meeting, September 2023. **(National level)**
- Field sampling technical leader of the third national soil survey in Liaoning Province, December, 2023. **(Provincial level)**
- **Third Prize**, The 9th "Internet Plus" College Student Innovation and Entrepreneurship Competition in Liaoning Province, August, 2023. **(Provincial level)**
- Academic Scholarship of Shenyang Agricultural University, 3 times, 2020-2023. **(School level)**
- Outstanding Graduate of Liaoning Province, 2020. **(Provincial level)**
- **First Prize**, GIS Competition of Shenyang Agricultural University, 2018. **(School level)**
- **Third Prize**, Astronomy Knowledge contest in Northeast China, 2018. **(Provincial level)**

Skills

- **Computer skills:** National Computer Level 2, Microsoft office, ArcGIS, Origin, R studio, Python, Metawin, SPSS, InVEST, etc.
- **Language skills:** CET-4 (435 scores), CET-6 (436 scores), Chinese high school English teacher certificate, China Level 3 psychological consultant certificate, etc.
- **Scientific skill:** Drone aerial photography, Measuring the physical and chemical properties of the soil, Identification of plants, etc.

Future research ideas

At present, a large amount of high-precision spatial data has been mastered, such as environmental factors, topography, soil type, soil fertility factors, groundwater, and surface matrix. In the future, we hope to be able to scientifically and rationally fuse multi-source data, clarify the internal mechanism by exploring the influence paths between various factors, and use spatial big data models to establish precise configuration rules for protection and utilization technologies, providing a scientific basis for precise agricultural and farming decision-making.