Curriculum Vitae

Jiapu Li, PhD Candidate

Nanjing Agricultural University

Education background

2022/09-present PhD Candidate in Ecology, Nanjing Agricultural University
Project: Effects of global change factors on plant stoichiometric characteristics in a Tibetan alpine meadow
Advisor: Hui Guo

2019/09-2022/06 M.S. in Ecology, Visiting student, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences
Dissertation: Effects of nitrogen, phosphorus addition and drought on element concentrations and their stoichiometry among different organs in alpine plants
Advisor: Shuli Niu & Dashuan Tian

2019/09-2022/06 M.S. in Grassland Science, Southwest Minzu University
Advisor: Qingping Zhou

2014/09-2018/06 B.S. in Grassland Science, Inner Mongolia Agricultural University
Dissertation: Effects of grazing on biomass of *Stipa breviflora* in desert steppe
Advisor: Guodong Han

Research interests

1. Global change effects on plant stoichiometric characteristics
2. Global change effects on biomass and diversity of community and ecosystem functioning

Publications

1. **Jianpu Li**, Dashuan Tian, Kailiang Yu, Hongbo Guo, Ruiyang Zhang, Jinsong Wang, Qingping Zhou, Shuli Niu, 2023. Seed nutrient is more stable than leaf in response to changing multiple resources in an alpine meadow. ***Ecological Processes***, 12. https://doi.org/10.1186/s13717-023-00454-9
2. Hongbo Guo, Quan Quan, Shuli Niu, Tingting Li, Yicheng He, Yiwen Fu, **Jiapu Li**, Jinsong Wang, Ruiyang Zhang, Zhaolei Li, Dashuan Tian, 2023. Shifting biomass allocation and light limitation co-regulate the temporal stability of an alpine meadow under eutrophication. ***Science of the total environment***, 860, 160411-160411. https://doi.org/10.1016/j.scitotenv.2022.160411
3. **Jiapu Li**, Xuebin Yan, Pinwei Zhang, Xianhui Zhou, Miaojun Ma, Yanwen Zhao, Hui Guo, 2025. Multiple global change factors alter the scaling of nitrogen to phosphorus in alpine plants. Functional ecology, 2025. https://doi.org/10.1111/1365-2435.70087

Academic activities

1. Attended the ***22th China Conference on Ecology*** in Beijing, China (2023/10)
2. Attended the ***10th Chinese Ecologist Club Academic Forum*** in Weifang, China (2020/12)

Honors & Awards

1. The Secord Prize Scholarship for Ph.D. Student (2023)
2. Extraordinary Postgraduate Student of Southwest Minzu University (2021)
3. Outstanding Graduates Awards of Inner Mongolia (2018)
4. National Encouragement scholarship (2017)
5. Merit Student (2017)
6. Excellent Student Cadre (2016)

Introduction to My Research

1. Effects of changing multiple resources on nutrients of leaf and seed in an alpine meadow (during the M.S.)

Leaf and seed nutrients are fundamental to plant growth and reproduction. For example, leaf nitrogen (N), phosphorus (P) concentrations and N:P ratios are important determinants for plant photosynthesis capacity, while seed quality is closely related to the evolutionary fitness of next generation. These suggest that leaf and seed nutrients may respond differently to multiple soil resources change. However, most research efforts have been put on the responses and mechanisms of leaf nutrients along natural environment gradients or in global change experiments. Little attention has been paid to seed nutrient responses. Moreover, it remains poorly understood how leaf versus seed nutrient and stoichiometry could differently respond to changing multiple resources.

We performed an experiment of N addition, P addition and drought in an alpine meadow (Figs. 1 and 2) to compare the difference between the responses of leaf and seed N, P concentration and N:P ratio in dominant species. We found that seed nutrient concentrations were more stable than leaf in response to experimental N and P addition, but drought did not affect both organ nutrients (Fig. 3). Furthermore, we found nutrient addition and drought had synergistic interactions on leaf nutrients, but not on seed nutrients (Fig. 4).

The novelty of this work arises from compare leaf and seed nutrient responses to changing multiple resources, as opposed to much traditional research efforts on vegetive organ nutrients. The more stable response of seed nutrients suggests that plants tend to adopt a conservative nutrient strategy in reproduction, ensuring the evolutionary fitness of next generations.

Figure 1 The layout of experimental plots

Figure 2 The appearance of rain-reducing shelter

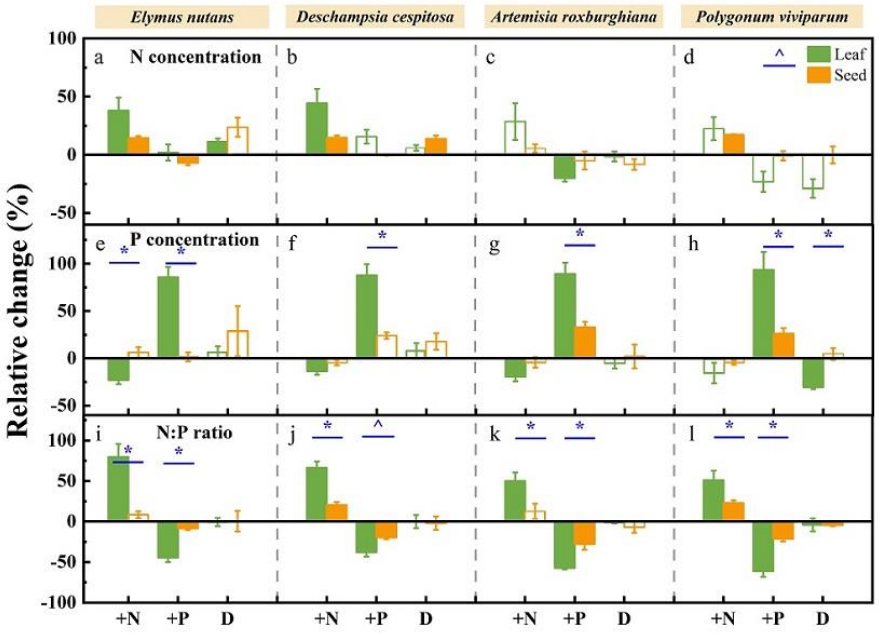

Figure 3 Relative changes of N, P concentrations and N:P ratio in leaf versus seed of four species (*Elymus nutans, Deschampsia caespitosa, Artemisia roxburghiana,* and *Polygonum viviparum*) caused by individual treatments. Solid columns indicate a significant response to treatment. Hollow columns indicate no significant response. * and ^, respectively, indicate a significant difference at $P < 0.05$ and P

< 0.1 between leaf and seed

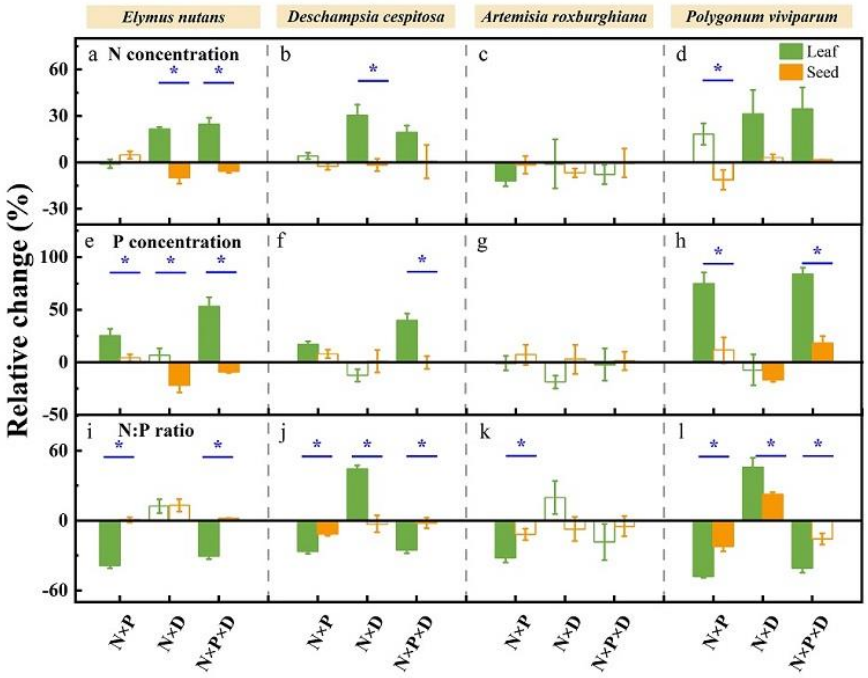

Figure 4 Relative changes of N, P concentrations and N:P ratio in leaf versus seed of four species (*Elymus nutans, Deschampsia caespitosa, Artemisia roxburghiana*, and *Polygonum viviparum*) by treatment interactions. Solid columns indicate a significant response to treatment interactions. Hollow columns indicate no significant response. * and ^, respectively, indicate a significant difference at P < 0.05 and P < 0.1 between leaf and seed

2. Effects of global change factors on scaling relationship of N to P for leaf and seed in an alpine meadow (during the PhD)

Global change factors may shift plant nutrient status and functioning by driving changes in N and P nutrient absorption and utilization. However, it is unclear how these global change factors may interactively influence the stoichiometric characteristics and the scaling relationship of N to P in alpine plants. Here, we aim to explore that how plant scaling relationship of N to P respond to global change factors. Therefore, we conducted a fully factorial field experiment including nitrogen addition and warming in a Tibetan alpine meadow (Fig. 5), and measured plant nutrient concentration changes in each plot. In addition, we

examined biomass and diversity of community to observe ecosystem functioning (Fig. 6).

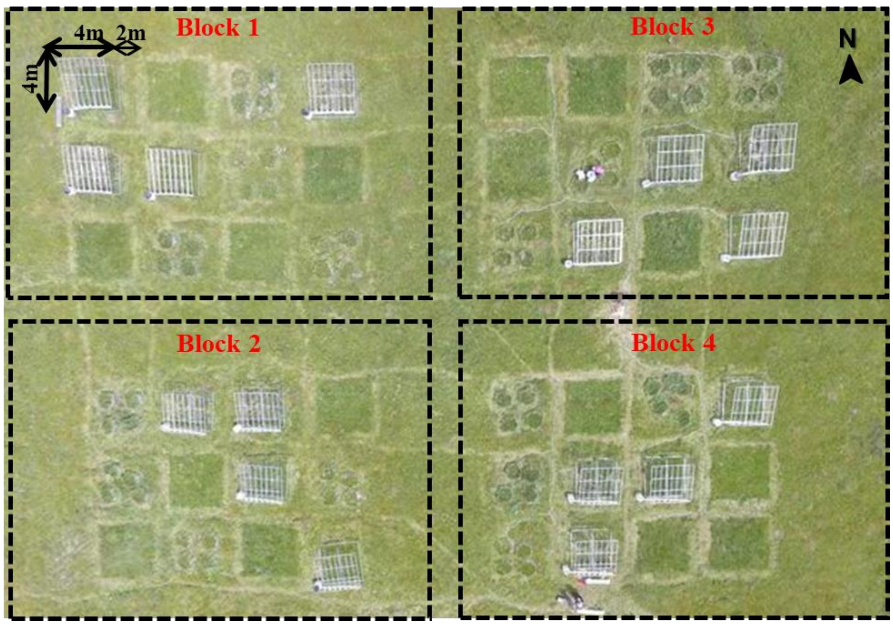

Figure 5 An aerial view of the experimental site

Figure 6 Field work of community diversity survey on the Tibetan Plateau