

4、 外语能力证书

全国大学英语四级考试(CET4)成绩报告单

姓 名：李宏胥

证件号码：

学 校：长春理工大学



笔试成绩

准考证号：

总 分：**470**

听 力：**142**

阅 读：**190**

写作和翻译：**138**

考试时间：2019年12月

口试成绩

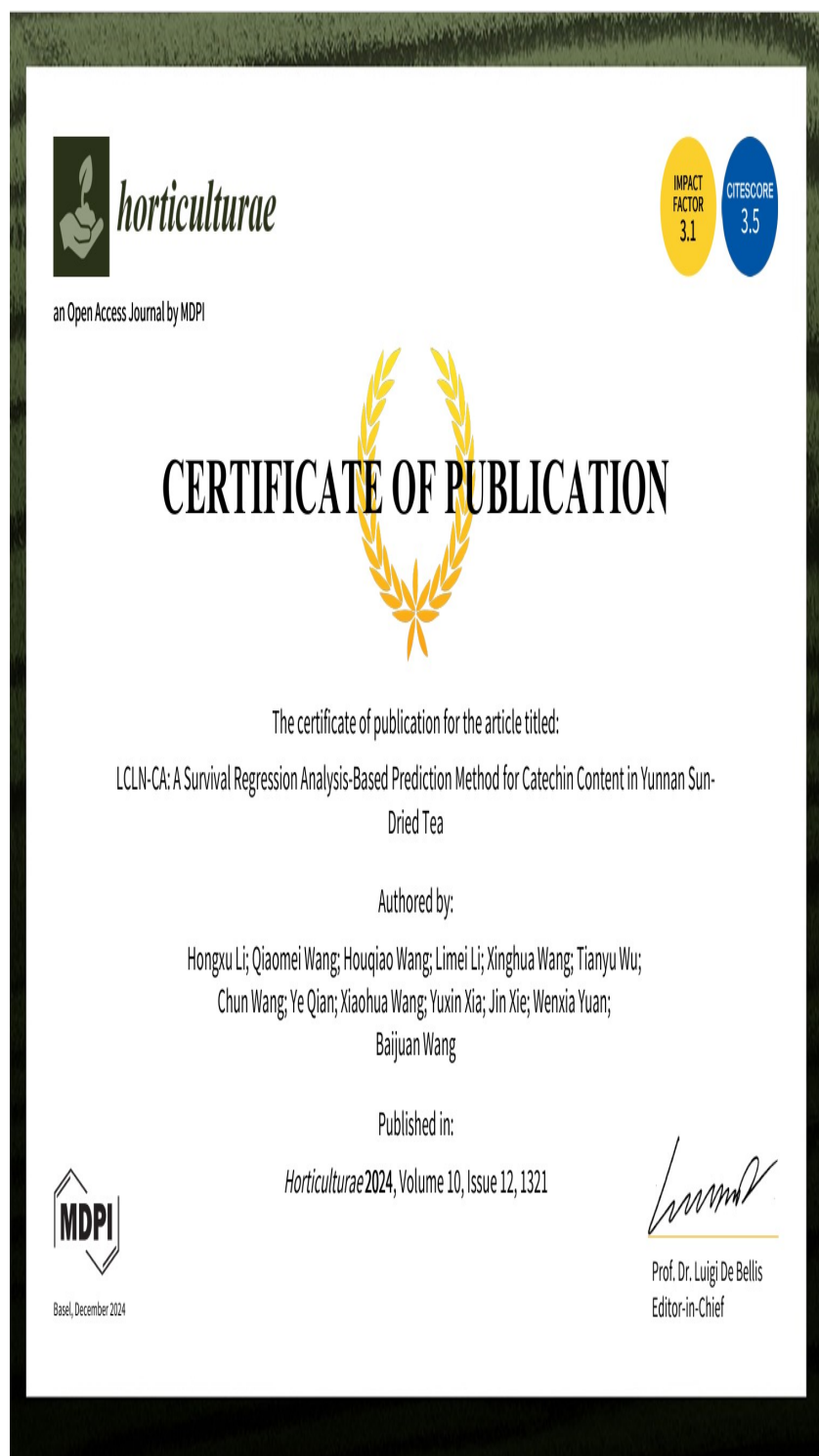
准考证号：--

等 级：--

考试时间：--

成绩报告单编号：

5、学术能力证明材料





Article

LCLN-CA: A Survival Regression Analysis-Based Prediction Method for Catechin Content in Yunnan Sun-Dried Tea

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Abstract: Catechins are pivotal determinants of tea quality, with soil environmental factors playing a crucial role in the synthesis and accumulation of these compounds. To investigate the impact of changes in tea garden soil environments on the catechin content in sun-dried tea, this study measured the catechin content in soil samples and corresponding tea leaves from Nanhua, Yunnan, China. By integrating the variations in catechin content with those of 17 soil factors and employing COX regression factor analysis, it was found that pH, organic matter (OM), fluoride, arsenic (As), and chromium (Cr) were significantly correlated with catechin content ($p < 0.05$). Further, using the LASSO regression for variable selection, a model named LCLN-CA was constructed with four variables including pH, OM, fluoride, and As. The LCLN-CA model demonstrated high fitting accuracy with AUC values of 0.674, 0.784, and 0.749 for catechin content intervals of CA $\leq 10\%$, $10\% < CA \leq 20\%$, and $20\% < CA \leq 30\%$ in the training set, respectively. The validation set showed AUC values of 0.630, 0.756, and 0.723, respectively, indicating a well-calibrated curve. Based on the LCLN-CA model and the DymNom framework, a visual prediction system for catechin content in Yunnan sun-dried tea was developed. External validation with a test dataset achieved an Accuracy of 0.870. This study explored the relationship between soil-related factors and variations in catechin content, paving a new way for the prediction of catechin content in tea and enhancing the practical application value of artificial intelligence technology in agricultural production.

**check for updates**

Citation: Li, H.; Wang, Q.; Wang, H.; Li, L.; Wang, X.; Wu, T.; Wang, C.; Qian, Y.; Wang, X.; Xia, Y.; et al. LCLN-CA: A Survival Regression Analysis-Based Prediction Method for Catechin Content in Yunnan Sun-Dried Tea. *Horticulturae* **2024**, *10*, 1321. <https://doi.org/10.3390/horticulturae10121321>

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Keywords: content prediction; survival analysis; catechins; forecasting system; machine learning in agriculture

1. Introduction

Tea, as one of the world's three major beverages, holds a significant economic position globally [1–3]. The Chinese tea industry occupies a significant position in the global tea market, with a value exceeding USD 138 billion in 2023, while the tea industry in Yunnan Province accounts for over one-tenth of China's total tea industry value [4–6]. Yunnan sun-dried tea, with its unique processing techniques and quality characteristics, occupies an important position in the tea markets of China and globally [7,8]. Catechins, as key chemical components in sun-dried tea, confer a multitude of health benefits to humans. These compounds exhibit robust antioxidant properties and distinctive physiological activities, with numerous experimental examples demonstrating their efficacy in antibacterial, antiviral, anti-inflammatory, anti-allergic, and anticancer activities. Moreover, catechins have been identified to possess additional physiological activities, including antioxidation,

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CERTIFICATE OF PUBLICATION

The certificate of publication for the article titled:

YOLOv8n-WSE-Pest: A Lightweight Deep Learning Model Based on YOLOv8n for Pest Identification in Tea Gardens

Authored by:

Hongxu Li; Wenxia Yuan; Yuxin Xia; Zejun Wang; Junjie He; Qiaomei Wang;
Shihao Zhang; Limei Li; Fang Yang; Baijuan Wang

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Article

YOLOv8n-WSE-Pest: A Lightweight Deep Learning Model Based on YOLOv8n for Pest Identification in Tea Gardens

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Abstract: China's Yunnan Province, known for its tea plantations, faces significant challenges in smart pest management due to its ecologically intricate environment. To enable the intelligent monitoring of pests within tea plantations, this study introduces a novel image recognition algorithm, designated as YOLOv8n-WSE-pest. Taking into account the pest image data collected from organic tea gardens in Yunnan, this study utilizes the YOLOv8n network as a foundation and optimizes the original loss function using WIoU-v3 to achieve dynamic gradient allocation and improve the prediction accuracy. The addition of the Spatial and Channel Reconstruction Convolution structure in the Backbone layer reduces redundant spatial and channel features, thereby reducing the model's complexity. The integration of the Efficient Multi-Scale Attention Module with Cross-Spatial Learning enables the model to have more flexible global attention. The research results demonstrate that compared to the original YOLOv8n model, the improved YOLOv8n-WSE-pest model shows increases in the precision, recall, mAP50, and F1 score by 3.12%, 5.65%, 2.18%, and 4.43%, respectively. In external validation, the mAP of the model outperforms other deep learning networks such as Faster-RCNN, SSD, and the original YOLOv8n, with improvements of 14.34%, 8.85%, and 2.18%, respectively. In summary, the intelligent tea garden pest identification model proposed in this study excels at precise detection of key pests in tea plantations, enhancing the efficiency and accuracy of pest management through the application of advanced techniques in applied science.

Keywords: agricultural science; deep learning; tea garden pests; object detection; YOLOv8n



Citation: Li, H.; Yuan, W.; Xia, Y.; Wang, Z.; He, J.; Wang, Q.; Zhang, S.; Li, L.; Yang, F.; Wang, B. YOLOv8n-WSE-Pest: A Lightweight Deep Learning Model Based on YOLOv8n for Pest Identification in Tea Gardens. *Appl. Sci.* 2024, 14, 8748. <https://doi.org/10.3390/app14198748>

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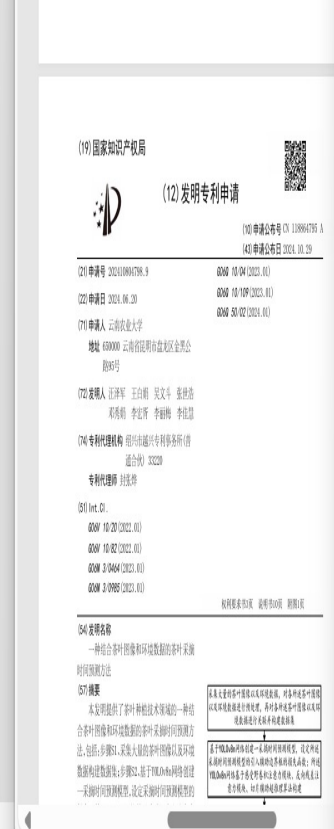
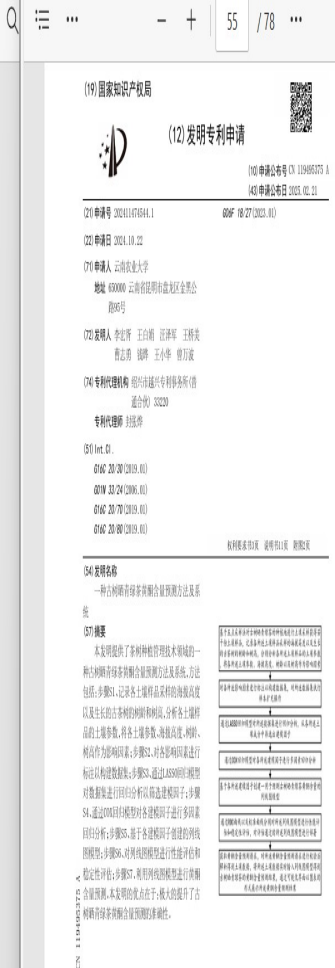
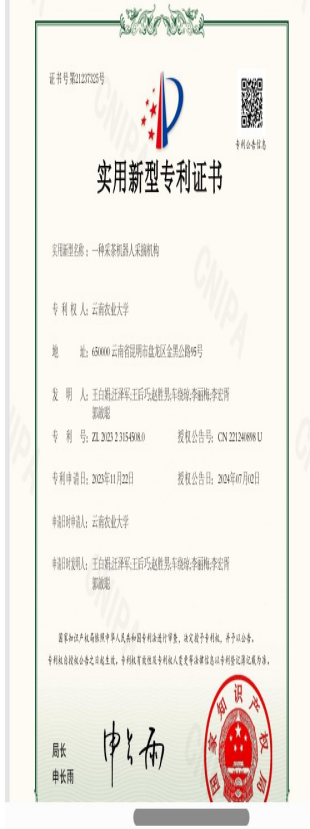
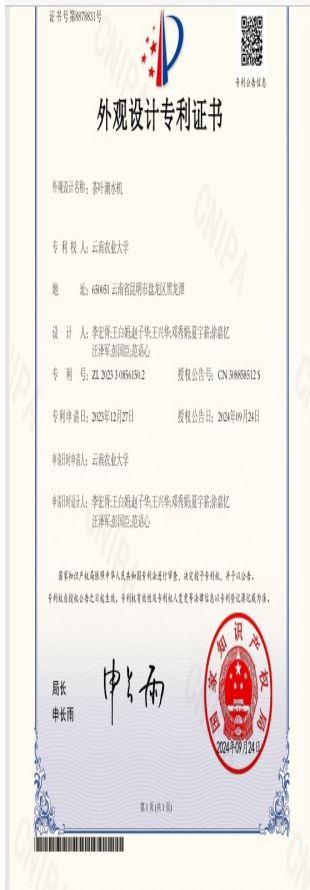
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1. Introduction

Yunnan Province, located across the Tropic of Cancer, is the birthplace of Pu'er tea and boasts a vast area of favorable climate [1,2]. With abundant rainfall and excellent ecological conditions, it has become an ideal place for tea cultivation [3,4]. However, the favorable ecological environment has also fostered a diverse range of pests, leading to aggravated pest infestation in tea gardens [5,6]. The status of pests and diseases in organic tea gardens directly affects the yield and quality of tea leaves [7–9]. With the development of applied science in recent years, the adoption of advanced agricultural science and technology, including high-efficiency, targeted smart pest management techniques, has become an indispensable component in addressing insect pest challenges within Yunnan's tea plantations [10,11].

The challenges faced in the realm of intelligent and precise pest control encompass the accurate identification of pests and the difficulties in deployment due to the high complexity





云南农业大学茶学院 2025 届优秀毕业生 推荐名单公示

根据《关于开展 2025 届优秀毕业生推选工作的通知》（就创发〔2025〕3 号）要求，按照“公开、公正、平等、择优”的原则，民主推荐出 2025 届省级优秀毕业生 6 人和校级优秀毕业生 6 人。现将拟推荐名单（见附件）进行公示：

如对以上公示拟推荐名单有异议，请以书面材料形式向学院就业指导与服务办公室（联系电话：0871-65810810）反映。公示截止日期：2025 年 3 月 26 日（星期四）。

附件：云南农业大学 2025 届优秀毕业生推荐名单

中共云南农业大学茶学院委员会

2025 年 3 月 19 日

附件：

云南农业大学 2025 届优秀毕业生推荐名单

省级优秀毕业生：6 人

序号	姓名	所在班级	专业
1	苏心梦	2021 茶学 1 班	茶学
2	莫艳	2021 茶学 2 班	茶学
3	杨金辉	2021 茶学 2 班	茶学
4	吴亚敏	茶学硕士	茶学
5	陆建伟	农业硕士	农艺与种业
6	李宏胥	农业硕士	农艺与种业

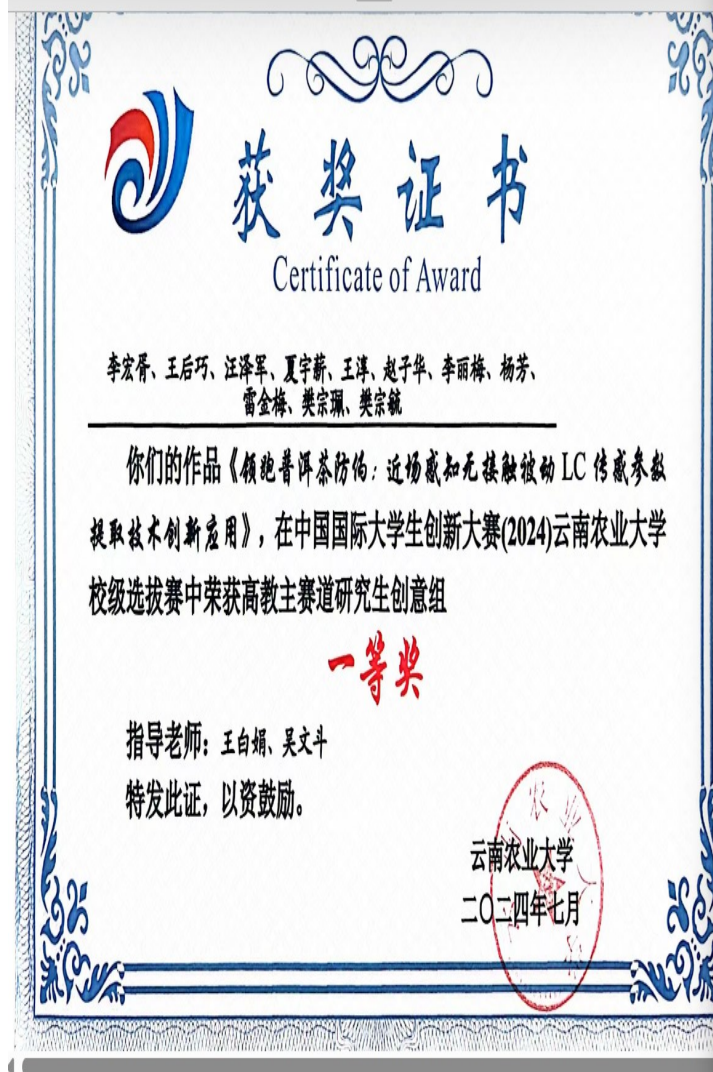
校级优秀毕业生：6 人

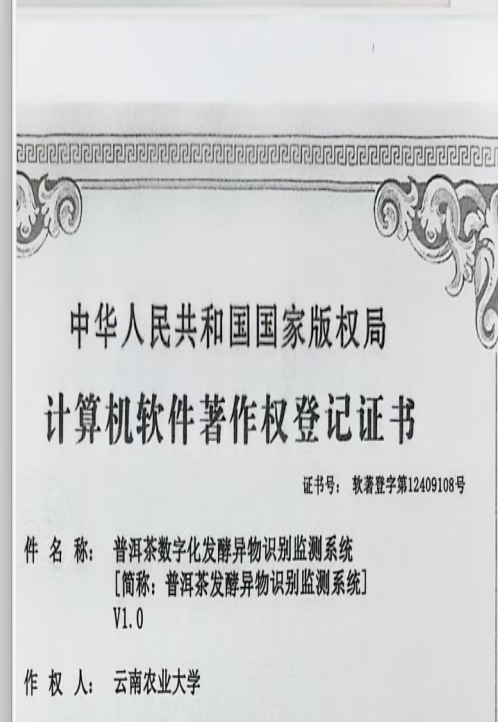
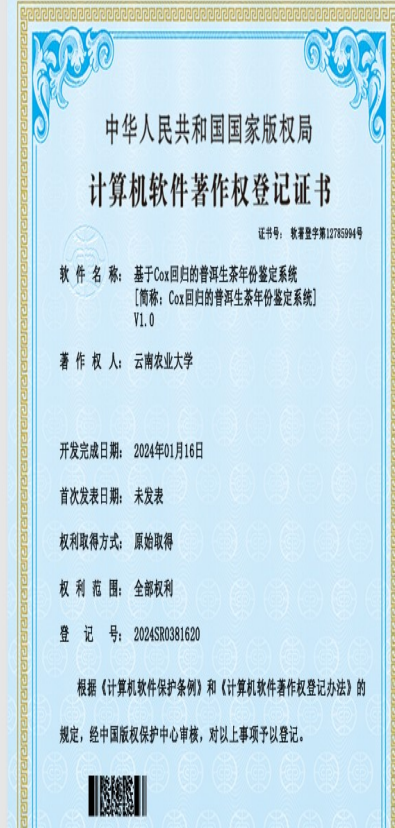
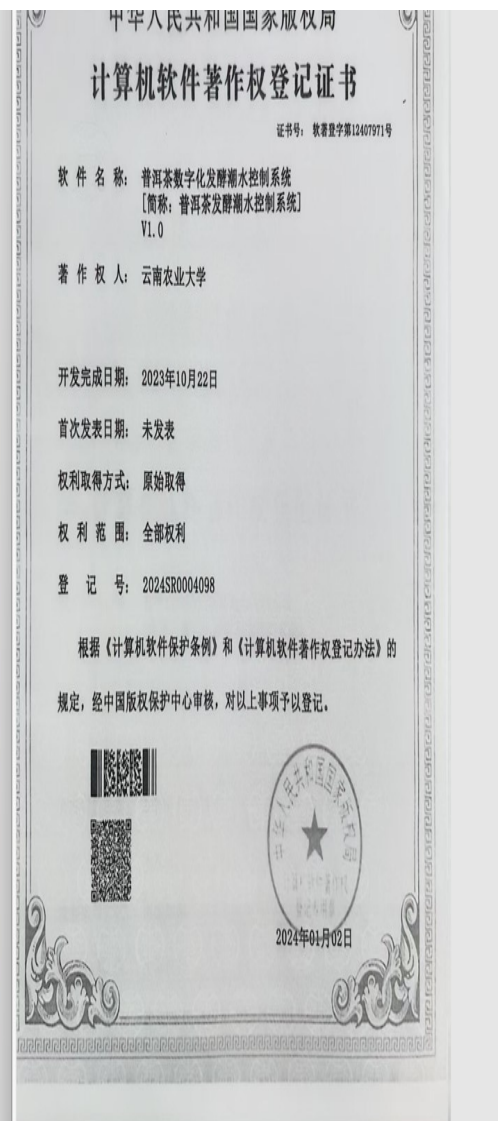
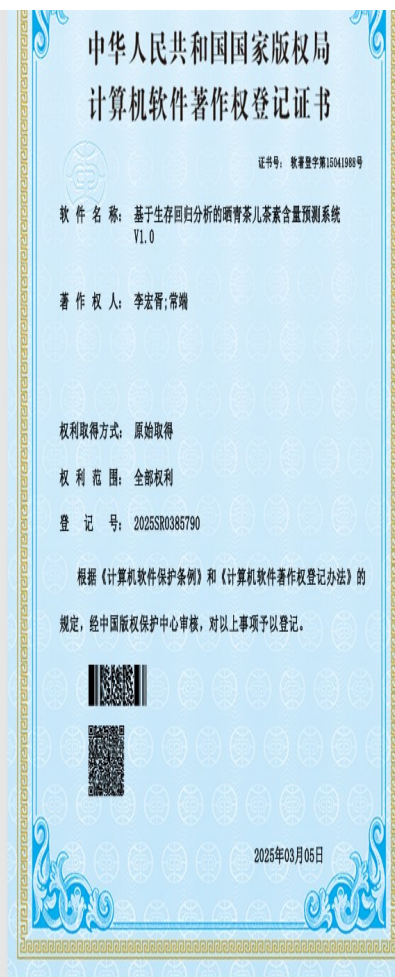
序号	姓名	所在班级	专业
1	张立能	2021 茶学 1 班	茶学
2	魏婷婷	2021 茶学 2 班	茶学
3	余正钦	2021 茶学 2 班	茶学
4	牛森	茶学硕士	茶学
5	王后巧	茶学硕士	茶学
6	赵子华	农业硕士	农艺与种业

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77 / 78







云南农业大学茶学院 2024 年度云南省教育厅科研基金项目申报
及院级立项推荐公示

经过前期的申报与核定，2024 年度云南省教育厅科研基金项目申报推荐工作已完成，按照推荐名额分配，我院教师类项目有 5 项推荐，研究生项目有 2 项获得推荐，考虑到研究生项目申报的积极性，研究决定，其余项目推荐为院级立项。现将 2024 年度云南省教育厅科研基金项目申报及院级立项推荐公示如下：

教师类项目：

- 1、江冰冰，茶樟间作模式下香樟抗茶轮斑病菌的化感物质筛选，专项项目
- 2、王桥美，茶菌复合种植模式对低效茶园土壤的改良作用研究，一般项目（资助）
- 3、车绕琼，单作与间作模式下茶树根际微生物多样性及功能研究，一般项目（资助）
- 4、刘春艳，思政教育背景下的茶文化传承与创新，一般项目（全自筹）
- 5、刘 莹，十里香品种保护及新品选育，一般项目（全自筹）

研究生类项目（教育厅）：

- 1、严慧婷，不同光质调控对云南白茶品质影响研究
- 2、范苏行，普洱熟茶渥堆发酵过程中果胶类多糖变化对醇厚滋味的影响研究

研究生类项目（院级）：

- 1、周森，三七普洱茶发酵过程中的特色风味形成研究
- 2、汪泽军，高原山地茶叶采摘机器人研发
- 3、官己青，普洱熟茶贮藏中物质变化及影响因素研究
- 4、李宏霄，非生物胁迫下茶园干旱变化预测研究
- 5、张田芳，普洱熟茶渥堆发酵过程中“陈香”物质的变化

2024Y0889	食品科学技术学院	大围山微型鸡肉成熟中蛋白质的变化研究	梁双敏	2022 级	博士研究生	自然科学类	王道君	经费自筹
2024Y0890	食品科学技术学院	普洱熟茶内源性降糖肽鉴定及其降糖机制研究	王 康	2022 级	博士研究生	自然科学类	赵 明	经费自筹
2024Y0891	食品科学技术学院	澳洲坚果粕调节肠道微生物改善白羽肉鸡肉品质的研究	董金娜	2023 级	博士研究生	自然科学类	方崇业	经费自筹
2024Y0892	食品科学技术学院	水稻/玉米与香鲍菇轮作对香鲍菇香气的影响	宋 玲	2023 级	博士研究生	自然科学类	桂明英	经费自筹
2024Y0893	食品科学技术学院	半矿“景天全基因组组装及 MTP 基因家族鉴定与分析	代子建	2023 级	硕士研究生	自然科学类	董 扬	经费自筹
2024Y0894	茶学院	茶园虫害干预的多模态信息融合决策方法	李宏霄	2023 级	硕士研究生	自然科学类	王白娟	经费自筹
2024Y0895	茶学院	风味茶膏调配工艺优化及增强免疫力研究	龚四丽	2023 级	硕士研究生	自然科学类	赵 明	经费自筹
2024Y0896	茶学院	高茶黄素滇红工夫红茶的工艺优化和品质分析	沙千纹	2023 级	硕士研究生	自然科学类	王兴华	经费自筹
2024Y0897	茶学院	贮藏不同年份沱茶香气品质研究	马晨阳	2022 级	硕士研究生	自然科学类	高 峻	经费自筹
2024Y0898	茶学院	速溶茶粉工艺优化级茶酸度的研究与开发	杨国琴	2023 级	硕士研究生	自然科学类	赵 明	经费自筹
2024Y0899	茶学院	冷泡茶产品开发	马佳慧	2021 级	本科生	自然科学类	赵 明	经费自筹