

YOUTH LEARNING THROUGH WILD EDIBLE PLANT HERITAGE IN XISHUANGBANNA, CHINA



At Xishuangbanna Tropical Botanical Garden (XTBG) in China, we developed and implemented a four-week programme for local college students called Wild Edible Plants Notes. Educational materials were created through interviews with local holders of indigenous knowledge, who also served as mentors. They guided students in field investigations and practical learning within the botanical garden, a Dai village, and a local market. Students explored edible plants knowledge and sustainable food perspectives, then produced short videos to share what they had learned. This programme highlights the role of botanical gardens in connecting youth, communities, and culinary heritage.

Background

In Xishuangbanna, Yunnan, dense tropical rainforest supports rich plant diversity, alongside the culinary culture traditions and ecological wisdom of Indigenous ethnic groups such as the Dai and Hani. Among these traditions, wild edible plants are widely utilised for their distinctive flavours, health benefits and cultural meanings, with over 200 species consumed daily (Xu et al., 2002). However, rapid modernisation is threatening the transmission of the indigenous knowledge and dietary practices associated with these plants (Ghorbani et al., 2012; Reyes-García et al., 2013).

Above: Students preparing traditional Dai dishes (Ying Liu)

Food is more than nutrition; it is a living carrier of culture. Every meal can be a starting point for youth to identify with their heritage.



Against this backdrop, Xishuangbanna Tropical Botanical Garden (XTBG) launched the “Wild Edible Plants Notes” programme to help safeguard and pass on Indigenous culinary heritage. Targeting the goal “Let’s become cool foodies and vloggers”, the four-week programme recruited 28 local college students and aimed to rebuild young people’s connection with local edible plants through informal education.

The education perspective

The programme’s curriculum integrates Place-Based Education (PBE) and Social Cognitive Theory (SCT) to construct a multidimensional learning framework. Firstly, PBE shaped the broader learning environment. We moved beyond the physical boundaries of the botanical garden and extended learning into a Dai village and traditional local markets. These local sites transformed abstract knowledge into lived experiences within specific geographical and cultural contexts. Students encountered wild edible plants not only as botanical specimens, but also as part of everyday food practices, memory and community life. Secondly, SCT informed the internal learning process. Students did not acquire knowledge in isolation, but through dynamic interactions between the individual, society, and the environment (Bandura, 1999; Schunk & DiBenedetto, 2020). Through observing local mentors, conducting in-depth village interviews, and collaborating with peers, students internalised Indigenous knowledge through authentic social interactions. Furthermore, the programme incorporated scaffolded tasks and hands-on culinary practices to provide direct mastery experiences, aiming to cultivate students’ practical skills and gradually build their self-efficacy. In this way, the programme positioned culinary heritage as a dynamic pathway for youth to learn about biocultural diversity and sustainable diets.



Students independently exploring the wild vegetable garden (Yuhao Zhao)



Educational tool: Example of Sustainable Diet Cards (Ying Liu)

Inviting community elders and residents to teach is not just an educational approach—it is a profound empowerment of marginalized botanical traditions.

Students conducting in-depth interviews with local villagers (Ying Liu)



Youth engagement strategies

1. Amplifying marginalised voices to build a local mentor network

Prior to the programme, our team engaged deeply with Indigenous knowledge holders in local Dai villages. We systematically collected knowledge and cultural narratives about edible plants to form the core curriculum, ensuring it was firmly rooted in local practices. During the programme, we invited elders and residents with rich knowledge of wild edible plants to serve as mentors, empowering them to reclaim cultural authority. Instead of learning from textbooks, students were immersed in the bustling atmosphere of authentic villages and vibrant wild vegetable gardens. There, mentors explained the cultural significance of these plants, taught traditional cooking techniques such as Bao Shao (leaf-wrapped roasting), and shared family stories of coexistence with nature. This authentic immersion and the vivid sharing of living memories captivated the youth, effectively dissolving their cultural unfamiliarity.

2. Introducing youth role models to transform identities from “learners” to “creators”

To connect traditional culinary culture with contemporary youth life, we invited Yu Shisan, a Dai content creator who actively promotes local food culture on short-video platforms. As a youth role model, she shared how to use digital media to record and reinterpret traditional wisdom. Her participation lowered the barrier to youth engagement and encouraged students to see cultural heritage as something they could actively express, reinterpret, and share. Building on this inspiration, we established the culminating task of collaboratively creating short videos. By empowering students with the identity of “cultural disseminators”, we enabled them to deepen and articulate their knowledge through video planning, filming, and editing, successfully awakening their sense of responsibility to protect culinary cultural heritage.

3. Developing cognitive tools to provide learning scaffolds

We developed visualised and gamified tools, such as a “Wild Edible Plants Monthly Calendar” and “Sustainable Diet Cards”. These tools linked edible plants with seasonality, healthy living, helping students understand the practical value of cultural heritage and making the learning process more accessible and engaging.

Programme evaluation

Follow-up interviews three months later revealed that the “Wild Edible Plants Notes” programme not only improved students’ botanical knowledge and understanding of sustainable diets but also strengthened their sense of identity with Xishuangbanna’s culinary culture. Notably, this sense of identity generated a cultural spillover effect; approximately over 20% of the participants (n=6) transferred this investigative interest to their own hometowns, documenting and sharing local edible plant knowledge as active protectors of their culinary heritage. This suggests that youth learning through edible plant heritage can foster both personal cultural identity and broader community-based heritage protection.

Local community mentors: A Dai elder teaching students traditional culinary techniques (Ying Liu)



Students working in groups to prepare dishes using local Xishuangbanna ingredients (Ran Chen)



Student output: Screenshot from an educational short video about *Ciwujia* (*Eleutherococcus senticosus*) collaboratively created by students (‘Chihuo’ Group)

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Implications for future practice

This programme offers several ideas that other botanic gardens could adapt.

1. Break physical boundaries to experience living heritage. Rooted in the principles of Place-Based Education (PBE), educational settings should extend from botanical gardens to surrounding farmlands and villages. Guiding audiences into everyday spaces allows them to intuitively grasp the deep-rooted connections between people and plants, truly experiencing the vitality of living cultural heritage.
2. Engage local community mentors. Botanic garden education should not be limited to in-house experts. Reaching out to surrounding communities and inviting Indigenous people or community elders to directly participate in teaching is a profound sign of respect for marginalised botanical cultural traditions.
3. Empower youth with digital media. To engage modern audiences, youth should be encouraged to use familiar tools (e.g., short-video platforms, social media) to record traditions. This not only sparks enthusiasm but also carves out a new space for cultural heritage to survive in the digital age.
4. Design cognitive scaffolds for accessible learning. Transforming abstract cultural concepts into tangible formats is crucial. Developing visual and gamified tools helps bridge the gap between traditional wisdom and youth's everyday lives, making the learning process highly engaging and practical.

Conclusion

We believe that food is not merely a source of nutrition, but a carrier of Indigenous knowledge and culture. Botanic gardens are not only centres for plant research and conservation, but also crucial hubs for recording Indigenous knowledge and protecting biocultural diversity (Dunn, 2017; Hsu et al., 2024). The "Wild Edible Plants Notes" programme demonstrates that when botanic gardens integrate cultural heritage perspectives into education and adopt engagement strategies tailored to youth, they can inject new vitality into the protection of cultural diversity. For these young participants, every meal could become a starting point for understanding nature, identifying with culture, and practising more sustainable ways of living.

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Educational tool: Xishuangbanna Wild Edible Plants Monthly Calendar (Ying Liu)

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By breaking the physical boundaries of the garden, we allow students to experience the true vitality of living cultural heritage in everyday spaces.

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