Phak hueat and *phak hi*: Ethnobotanical notes on vernacular naming and species identity in a northern Thai village

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Ethnobotanical Notes

Abstract

Background: Vernacular plant names do not necessarily correspond one-to-one with botanical species, creating potential problems when local names are used as proxies for taxonomic identification. This note examines the northern Thai names **phak hueat** and **phak hi** in Ban Tha Khrai, Chiang Mai Province, and documents their local botanical correspondence.

Methods: Ethnobotanical data were collected from 21 informants selected through purposive sampling using semi-structured interviews and field observations. Informants were asked how they recognized and distinguished the two plants, including their morphological and sensory characteristics and food uses. Botanical identifications were supported by voucher specimens.

Results: All 21 informants regarded **phak hueat** and **phak hi** as distinct plants. They distinguished them primarily by young-shoot color, relative leaf size, and taste. In Ban Tha Khrai, **phak hueat** corresponded to *Ficus geniculata* Kurz, characterized locally by red-orange young shoots, larger leaves, and a sour taste, whereas **phak hi** corresponded to *F. virens* Aiton, with pale young shoots, smaller leaves, and an astringent to bland taste. Both are consumed locally as seasonal vegetables.

Conclusions: The correspondence between these vernacular names and botanical species is locally consistent but should not be generalized across northern Thailand. Vernacular names should therefore be linked to voucher specimens, morphological documentation, and locality information rather than treated as taxonomic identifications in isolation.

Keywords: Ficus geniculata; *Ficus virens*; vernacular names; folk taxonomy; ethnobotany

Background

Traditional food systems in northern Thailand draw on a remarkably diverse flora, with vegetables forming a major component of local food-plant use (Panyadee *et al.* 2023). Species of *Ficus* L. (Moraceae) are particularly notable as seasonal vegetables, especially through the consumption of tender young shoots and leaves. In Thailand, several species of *Ficus* subsect. *Urostigma* are used as food, particularly in the northern region, where young shoots and leaves are commonly cooked in curries or prepared in salads (Chantarasuwan & van Welzen 2012). Similar food uses have been documented for *F. virens* Aiton in southwestern China (Shi *et al.* 2014) and for both *F. geniculata* Kurz and *F. virens* in Myanmar (Mon *et al.*

2020). These studies also document different forms of management and utilization, including collection, cultivation, and occasional marketing as vegetables. In northern Thailand, *F. virens* has also been recorded as an important homegarden tree whose young leaves are consumed as a seasonal vegetable and sold for supplementary household income (Panyadee *et al.* 2016).

Vernacular plant names do not necessarily correspond one-to-one with botanical species; a single folk name may refer to several botanical taxa, while a single species may be known by multiple local names (Khasbagan & Soyolt 2008). This problem is particularly relevant to edible figs in northern Thailand. Chantarasuwan and van Welzen (2012) reported that the northern Thai name **phak hueat** *daeng* was applied to more than one taxon of *Ficus*, including *F. geniculata* Kurz and *F. virens* Aiton, while the *Flora of Thailand* records both **phak hi** and **phak hueat** among vernacular names associated with *F. virens* (Berg *et al.* 2011). An earlier ethnobotanical survey in Ban Tha Khrai village likewise recorded *F. virens* under the name "Phak Heud" (Panyadee *et al.* 2016). Comparable taxonomic ambiguity has been documented in other ethnobotanically important plants in northern Thailand. For example, *Litsea cubeba* (Lour.) Pers. and *L. mollis* Hemsl. share similar morphological features and vernacular names, potentially leading to their conflation in earlier ethnobotanical records (Chaisoung *et al.* 2023). Such cases demonstrate that vernacular names are locally situated cultural categories and should not be treated, in isolation, as definitive evidence of botanical identity.

Accurate botanical identification is therefore fundamental to the reliability of ethnobotanical data. A vernacular name is itself a valid cultural identifier, but problems arise when it is assumed to correspond automatically to a particular scientific species. Once an incorrect botanical identity is assigned, information on food, medicinal, or other uses may subsequently be attributed to the wrong species and carried forward into databases, reviews, and comparative analyses. This can obscure real patterns of plant use and, in studies extending into phytochemistry or pharmacology, may also associate biological properties with the wrong taxon. Reliable scientific names linked to voucher specimens are essential for connecting plant-based research accurately with the existing literature (Bennett & Balick 2014). Likewise, plant-use records should be unambiguously linked to voucher specimens to ensure the traceability and verification of botanical identifications (Weckerle *et al.* 2018). Thus, documenting the relationship between vernacular names and botanically verified specimens is not merely a matter of nomenclature, but a prerequisite for the traceability and comparability of ethnobotanical knowledge.

This note documents how the names **phak hueat** and **phak hi** are understood and applied in a single northern Thai community and identifies the botanical taxa corresponding to these names in this local context. The study focuses on Ban Tha Khrai, Mae Sa Subdistrict, Mae Rim District, Chiang Mai Province, where both names are actively used and where informants consistently distinguish the two plants as separate folk taxa. Rather than attempting to establish standardized vernacular names for northern Thailand as a whole, this study treats **phak hueat** and **phak hi** as locally situated ethnobotanical categories. Its aim is therefore to clarify the relationship between local naming and botanical identity within the study community and to highlight the importance of interpreting vernacular names within their specific cultural and geographical contexts.

Materials and Methods

Study area

The study was conducted in Ban Tha Khrai, Mae Sa Subdistrict, Mae Rim District, Chiang Mai Province, northern Thailand (approximately 18°54.13′ N, 98°56.57′ E). The village lies at about 320-330 m above sea level, with a mean annual temperature of approximately 27°C and mean annual precipitation of about 1,144 mm. It was established around 80 years ago and has a long tradition of homegardening. Agriculture was formerly the main livelihood, although economic expansion and urbanization have shifted many residents toward non-agricultural employment; nevertheless, gardening and agricultural skills remain common within the community. Homegardens remain important sites for maintaining woody food plants, and many have persisted for more than 50 years. Both **phak hueat** and **phak hi** are maintained in household gardens and used as local vegetables. Fieldwork for the present study was conducted between April-June 2026.

Ethnobotanical data collection

Twenty-one informants were selected through purposive sampling based on their experience in growing, collecting, or using **phak hueat** and/or **phak hi**. The participants comprised 15 women and six men, aged 46-80 years (mean age 67.5 years), all of whom lived in Ban Tha Khrai and had direct experience with at least one of the two plants.

Ethnobotanical information was collected through semi-structured interviews. Informants were first asked whether they were familiar with the vernacular names **phak hueat** and **phak hi**. They were then asked whether they regarded the two

names as referring to the same or different plants and which characteristics they used to distinguish them. Particular attention was given to locally recognized features of the young shoots and leaves, including shoot color, leaf size, and taste. Traditional uses were also documented, including the plant parts consumed, methods of preparation and cooking, and commonly prepared dishes. These use-related observations were retained in the present study because they provided additional context for understanding how the two locally named plants were recognized and differentiated in everyday practice.

Interviews were complemented by field observations of plants growing in household gardens. These observations were used to compare informants' descriptions with characteristics visible on living plants and to support the association between vernacular names and the plants to which they referred.

Plant identification

Plants identified by informants as **phak hueat** and **phak hi** were examined in the field, and reference specimens were collected to link the vernacular names with botanical taxa. Botanical identification was conducted by the first author, Prateep Panyadee, using the identification keys and species descriptions in the Moraceae treatment of *Flora of Thailand* (Berg et al. 2011) and the taxonomic revision of *Ficus* subsection *Urostigma* (Chantarasuwan et al. 2013). Identification was based on the combination of morphological characters used in these treatments, with particular attention to petiole length, articulation between the lamina and petiole, tertiary venation, lamina-base shape, and fig characters when available. Young-shoot color and other field characters reported by local informants were recorded independently for subsequent comparison with the botanical identifications. Voucher specimens were deposited at the Herbarium of Queen Sirikit Botanic Garden (QBG) under the collections P. Panyadee 506-509.

Ethical considerations

The purpose of the study was explained to all participants before interviews, and participation was voluntary. Informed consent was obtained from each participant before data collection.

Results

Local recognition of *phak hueat* and *phak hi*

All 21 informants regarded **phak hueat** and **phak hi** as distinct plants and reported that they could distinguish between them in everyday use. The names **phak hueat** and **phak hi** were the principal vernacular names used in the community, although one informant also referred to **phak hueat** as **phak hueak**, and another used the alternative name **phak lueat**.

Informants distinguished the two plants primarily by three characteristics: the color of the young shoots, leaf size, and taste. **Phak hueat** was typically characterized by red to orange young shoots, relatively larger leaves, and a sour taste, whereas **phak hi** was characterized by pale whitish to light-yellow young shoots, relatively smaller leaves, and an astringent or relatively bland taste (Table 1). Young-shoot color and leaf size were each mentioned by 14 informants, while sour taste was mentioned for **phak hueat** by 13 informants and an astringent or bland taste for **phak hi** by 11 informants. Several informants explicitly described using a combination of these characters rather than relying on a single feature.

Table 1. Principal characteristics used by informants in Ban Tha Khrai to distinguish **phak hueat** and **phak hi**.

Local name	Young shoots	Leaves	Taste	Voucher
phak hueat	Red-orange	Relatively larger	Sour	P. Panyadee 506, 507
phak hi	Pale whitish-light yellow	Relatively smaller	Astringent to bland	P. Panyadee 508, 509

Although the distinction between the two folk taxa was unanimous, the individual characters used to recognize them were not completely uniform. One informant described **phak hi** as having red young shoots and a sour taste, differing from the characterization reported by most participants.

Botanical correspondence of the two names

Field examination and botanical identification showed that the two folk taxa recognized in Ban Tha Khrai corresponded to two distinct species of *Ficus*. In this local context, **phak hueat** corresponded to *Ficus geniculata* Kurz, whereas **phak hi** corresponded to *Ficus virens* Aiton. This correspondence was consistent with the distinction made by informants and with the morphological characters observed in the field.

Plants recognized locally as **phak hueat** were botanically identified as *Ficus geniculata* and typically showed red to orange young shoots, relatively larger leaves, and a distinctly sour taste. Plants recognized as **phak hi** were identified as *F. virens*

and typically showed pale whitish to light-yellow young shoots, relatively smaller leaves, and a mildly astringent or bland taste. These observed differences were consistent with the characteristics most frequently reported by informants in Ban Tha Khrai.

Voucher specimens of *Ficus geniculata* (P. Panyadee 506 and 507) and *F. virens* (P. Panyadee 508 and 509) were deposited in the Queen Sirikit Botanic Garden Herbarium (QBG). These specimens provide the basis for the species assignments reported here.



Figure 1. Comparative morphology of the two *Ficus* taxa recognized in Ban Tha Khrai. Left: *Ficus geniculata* Kurz (**phak hueat**), showing reddish young shoots and relatively larger leaves. Right: *Ficus virens* Aiton (**phak hi**), showing pale green young shoots and relatively smaller leaves. A ruler is included for scale.



Figure 2. Local food uses of **phak hueat** and **phak hi** in Ban Tha Khrai. **A**, steamed young shoots prepared for use in salad dishes; **B**, *yam* made from steamed young shoots; **C**, curry prepared with the young shoots.

Food use and local relevance

Both **phak hueat** and **phak hi** are used locally as seasonal vegetables, with tender young shoots as the principal edible part. Informants reported several preparation methods, including steaming, blanching, and eating the shoots fresh, and the plants were commonly served with chili dips or used in local salads and curries (Figure 2 and Table 2). Their regular use as food provides an everyday context in which the ability to recognize and distinguish the two locally named plants remains practically relevant within the community.

Table 2. Local food uses of **phak hueat** and **phak hi** reported in Ban Tha Khrai.

Aspect	Reported use
Principal edible part	Tender young shoots
Additional edible part	Young leaves
Preparation	Steamed, blanched, or eaten fresh
Common dishes/serving	Served with chili dips; used in local salads and curries

Discussion

In Ban Tha Khrai, **phak hueat** and **phak hi** function as two distinct folk taxa rather than as interchangeable names for the same plant. All 21 informants recognized them as different plants, using a broadly consistent combination of young-shoot color, relative leaf size, and taste. These criteria overlap only partly with formal taxonomy. Leaf size can support the distinction, although the size ranges of *Ficus geniculata* and *F. virens* overlap, while taxonomic treatments rely more strongly on combinations of leaf, petiole, stipule, venation, and fig characters (Berg *et al.* 2011).

By contrast, young-shoot color and taste are practical field and sensory characters emphasized by local informants but are not major diagnostic features in formal taxonomic descriptions. Moreover, variation in young-shoot color has been reported within these taxa, indicating that shoot color is better interpreted as a locally useful recognition cue than as a universal species-level diagnostic character (Chantarasuwan & van Welzen 2012; Shi *et al.* 2014). The local classification therefore represents a coherent, experience-based system of plant recognition rather than a direct replication of botanical taxonomy, consistent with ethnobotanical approaches that treat folk classifications as culturally meaningful systems shaped by local observation, use, and experience (Berlin 1992; Ellen 1993).

The correspondence documented in Ban Tha Khrai should not be interpreted as a standardized naming system for northern Thailand. Published records already indicate that the relationship between vernacular names and botanical species is variable. For example, **phak hueat** *daeng* has been applied to several taxa of *Ficus*, while **phak hi** and **phak hueat** have both been recorded in association with *F. virens* (Berg *et al.* 2011; Chantarasuwan & van Welzen 2012). The first author's field experience across northern Thailand likewise suggests that **phak hueat** and **phak hi** may be used differently among communities: in some places the two names are used interchangeably, whereas in others only one of the two taxa is locally recognized and only a single vernacular name is used. This variability also helps explain an earlier record from Ban Tha Khrai in which *F. virens* was reported as "Phak Heud" (Panyadee *et al.* 2016); at that time, the distinction between the two locally recognized taxa had not yet been recognized by the first author. Together, these observations show that vernacular-name-species correspondence is locally contingent and may vary even within the same broader linguistic and cultural region.

These findings have direct implications for ethnobotanical research and data synthesis. A vernacular name should not be treated as equivalent to a taxonomic identification, particularly when the same name may refer to different taxa among localities or when different names may be applied to the same species. Consequently, records of **phak hueat** should not automatically be assigned to *Ficus geniculata*, nor records of **phak hi** to *F. virens*, without supporting botanical evidence. This is especially important when ethnobotanical records are incorporated into databases, reviews, or comparative analyses, where an initial misidentification can be propagated and subsequently attributed to the wrong species. Linking vernacular names to voucher specimens, together with sufficient morphological documentation, provides a reliable basis for maintaining the traceability and comparability of ethnobotanical records (Bennett & Balick 2014; Weckerle *et al.* 2018).

As this study was conducted in a single community using purposive sampling, the documented correspondence between vernacular names and botanical species should not be generalized beyond the study locality without additional field verification.

Conclusion

In Ban Tha Khrai, **phak hueat** and **phak hi** represent two clearly differentiated folk taxa corresponding respectively to *Ficus geniculata* and *F. virens*. These associations, however, should be understood as locally situated rather than as standardized vernacular-species correspondences for northern Thailand. This case highlights the importance of documenting vernacular names together with voucher specimens, diagnostic morphological characters, and precise locality information. Ethnobotanical records based on vernacular names alone may conflate distinct botanical taxa or extend species identifications beyond the geographical and cultural context in which the names were recorded. Careful linkage between local nomenclature and verified botanical specimens is therefore essential for improving the traceability, comparability, and reliability of ethnobotanical datasets.

Declarations

List of abbreviations: QBG - Queen Sirikit Botanic Garden Herbarium

Ethics approval and consent to participate: The purpose of the study was explained to all participants before interviews, and participation was voluntary. Informed consent was obtained from each participant before data collection.

Consent for publication: Not applicable

Availability of data and materials: The summarized ethnobotanical data supporting the findings of this study are provided within the article and its tables. Voucher specimens are deposited at the Herbarium of Queen Sirikit Botanic Garden (QBG) under P. Panyadee 506-509. Raw interview records are not publicly available because they may contain information that could permit participant identification or include locally contextualized knowledge; access to de-identified material may be considered upon reasonable request to the corresponding author, subject to the original consent conditions and applicable ethical restrictions.

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Author contributions: H.P., P.I. & P.P. collected the data and developed the conceptual framework of the study. P.P. wrote the manuscript.

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Literature cited

Bennett BC, Balick MJ. 2014. Does the name really matter? The importance of botanical nomenclature and plant taxonomy in biomedical research. Journal of Ethnopharmacology 152(3):387-392. doi:10.1016/j.jep.2013.11.042.

Berg CC, Pattharahirantricin N, Chantarasuwan B. 2011. Moraceae. In: Santisuk T, Larsen K (eds). Flora of Thailand, Vol. 10(4). The Forest Herbarium, Department of National Parks, Wildlife and Plant Conservation, Bangkok, Thailand, Pp. 475-675.

Berlin B. 1992. Ethnobiological Classification: Principles of Categorization of Plants and Animals in Traditional Societies. Princeton University Press, Princeton, New Jersey, USA. doi:10.1515/9781400862597.

Chaisoung N, Panyadee P, Long C, Ngernsaengsaruay C, Chaowasku T, Inta A. 2023. Ethnobotanical study in the underexplored species of Genus *Litsea* (Lauraceae) in Northern Thailand. Biodiversitas 24(7):3977-4000. doi:10.13057/biodiv/d240736.

Chantarasuwan B, Berg CC, van Welzen PC. 2013. A revision of *Ficus* subsection *Urostigma* (Moraceae). Systematic Botany 38(3):653-686. doi:10.1600/036364413X670241.

Chantarasuwan B, van Welzen PC. 2012. Which species of *Ficus* subsection *Urostigma* in Thailand are used as food, ornamental plants or sacred trees? The Thailand Natural History Museum Journal 6(2):145-151.

Ellen R. 1993. The Cultural Relations of Classification: An Analysis of Nuaulu Animal Categories from Central Seram. Cambridge University Press, Cambridge, UK. doi:10.1017/CBO9780511470530.

Khasbagan, Soyolt. 2008. Indigenous knowledge for plant species diversity: a case study of wild plants' folk names used by the Mongolians in Ejina desert area, Inner Mongolia, P. R. China. Journal of Ethnobiology and Ethnomedicine 4:2. doi:10.1186/1746-4269-4-2.

Mon AM, Shi Y, Yang X, Hein PP, Oo TN, Whitney CW, Yang Y. 2020. The uses of fig (*Ficus*) by five ethnic minority communities in Southern Shan State, Myanmar. Journal of Ethnobiology and Ethnomedicine 16:55. doi:10.1186/s13002-020-00406-z.

Panyadee P, Balslev H, Wangpakapattanawong P, Inta A. 2016. Woody plant diversity in urban homegardens in Northern Thailand. Economic Botany 70(3):285-302. doi:10.1007/s12231-016-9348-9.

Panyadee P, Wangpakapattanawong P, Inta A, Balslev H. 2023. Very high food plant diversity among ethnic groups in Northern Thailand. Diversity 15:120. doi:10.3390/d15010120.

Shi Y, Hu H, Xu Y, Liu A. 2014. An ethnobotanical study of the less known wild edible figs (genus *Ficus*) native to Xishuangbanna, Southwest China. Journal of Ethnobiology and Ethnomedicine 10:68. doi:10.1186/1746-4269-10-68.

Weckerle CS, de Boer HJ, Puri RK, van Andel T, Bussmann RW, Leonti M. 2018. Recommended standards for conducting and reporting ethnopharmacological field studies. Journal of Ethnopharmacology 210:125-132. doi:10.1016/j.jep.2017.08.018.