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Research Paper

Ethnobotanical study of medicinal plants used by Tai Yai in Northern Thailand

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ABSTRACT

Ethnopharmacological relevance: We studied traditional knowledge of medicinal plants used by Tai Yai people in Northern Thailand. We documented traditional medical practices and determined importance among the Tai Yai. This paper reports on knowledge in usage of medicinal plants of the Tai Yai people in Northern Thailand.

Materials and methods: Interviews were conducted in 4 Tai Yai villages in Mae Hong Son and Chiang Mai provinces whose inhabitants immigrated from Myanmar at different times. Discussions and interviews were held with 126 key-informants (56 males and 70 females) ranging in age from 16 to 80 years in three age groups (age 16–40, 41–60, and 61–80). We calculated the informant consensus factor (ICF) for use category, use value index (UV) for use report of plant. We tested differences between the knowledge of different age groups and locations using principal component analysis (PCA).

Results: These Tai Yai people used of 141 medicinal plants belonging to 59 families. Of the medicinal plant species, the highest percentage was in the family Euphorbiaceae: *Croton acutifolius* and *Croton roxburghii*. The highest number of Informant consensus factor was for metabolic system disorders. Overall, Tai Yai people use medicinal plants to cure many sicknesses such as hypertension, lumbago, wounds, puerperium, kidney disorders, kidney stones, coughs, fevers, hemorrhoids, flatulence and malaria. There were no significant differences in knowledge of plants usage among villages of different ages. In addition, the knowledge of the plants was not significantly different between men and women. However, we found that the younger had less experience with and knowledge of medicinal plants than older people.

Conclusions: The result indicates loss of accumulated knowledge of medicinal plants and traditional use. Although, the medicinal plant knowledge was passed from one generation to the next by word of mouth, the detailed documentation of medicinal plants and their use may effectively prevent the knowledge-loss through time.

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1. Introduction

Northern Thailand has many ethnic groups such as Karen, Lahu, Hmong, Lisu, Akha, Mien, Lawa and Tai Yai (Srisawat, 2004). They possess knowledge about plant utilization for food, medicine, housing materials, fuel, dyes and fiber (Suksri, 2003; Trisonthi and Trisonthi, 2009). There have been many ethnobotanical studies of various ethnic groups such as Mien or Yao (Tovaranonte, 1998; Srithi et al., 2009); Akha (Inta et al., 2008),

Tai Lue (Tovaranonte, 1998; Tovaranonte and Chukeatirote, 2005), Karen (Winijchayanan, 1995), Lahu, Hmong (Tovaranonte, 1998), Lisu and Lawa (Tangtragoon, 1998; Yaso, 2000; Santasombat, 2001), and H'tin (Yaso, 2000).

Ethnobotany is the local traditional knowledge of utilizing indigenous plants, such as for food, medicine and tools, that local people have been practicing for a long time. The utilization of plant species found in nature varies in each region. Local folk wisdom on botanical uses has been applied in nature to the advantage of ethnic groups for a long time (Santasombat, 2001).

Ethnobotanical studies have shown great variation in traditional uses of herbal medicines among different cultural and social groups (Lee et al., 2008). The study of medicinal plant is one of the methods of examining the interaction and relationships between

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biological and cultural components of the environment (Bye, 1986). Since ancient times, people have resorted primarily to nature for food and medicine. The ethnic groups of Northern Thailand rely mostly on plants for subsistence and medical cures (Tene et al., 2007). Ethnobotany also attracts interest from different industries, thus it is predominantly linked to economic botany (Upho, 2004).

The Tai Yai (Shan, Tai, Ngio and Tai Luang) is an ethnic group with a population of about 6 million in western Assam, northern of Yunnan, Laos, Vietnam and Thailand (Vejjajiva, 1996; Wittinayasuk, 2001; Conway, 2006; Taoprasert and Taoprasert, 2006). They speak a language of the Tai Kadai language family (Aummatayakul, 1994; Conway, 2006). It is estimated that there are 3–4 millions Tai Yai in the Shan State of Myanmar, and about 100,000 scattered all around northern Thailand, particularly in the provinces of Mae Hong Son, Chiang Mai and Chiang Rai (Ramitanon et al., 1998; Mesatan, 2001; Wittinayasuk, 2001; Srisawat, 2004; Conway, 2006).

They inhabit upland valleys and practice wetland rice cultivation (Conway, 2006), with a few livestock (Mesatan, 2001). Their villages are surrounded by mountains and are near rivers. They have used a variety of plants from nature to their advantage for a long time (Santasombat, 2001). Some plants were used to make money for people in the community. Their knowledge of traditional medicines is based on oral tradition or medico-spiritual manuscripts (Pankhurst, 1990; Teklehaymanot et al., 2007). It has been generally accepted that medicinal plants are important for drug development (Singh and Singh, 2009). Since they have no written record about their traditional ethnobotanical knowledge, previous studies suggested the existence of a gradual process of loss of transmission of traditional knowledge and a risk of erosion of accumulated knowledge. It is, therefore, necessary to document the use of medicinal plants by the Tai Yai people before this knowledge becomes extinct. This study focused on possible changes of traditional ethnobotanical knowledge of Tai Yai immigrants who came to Thailand during different time periods. This

traditional knowledge can be useful for establishing priorities, planning effective use of resources and conservation of biodiversity and cultural knowledge (Ibrar et al., 2007).

2. Materials and methods

2.1. Study area

Between May 2011 and July 2012, four Tai Yai villages, Prato Muang, and Ban Luang in Khun Yuam district (18° 50' 22" N, 97° 57' 5" E), Mae Hong Son province, and Pang Kwai and Ban Jong in Wiang Hang district (19° 33' 34" N, 98° 38' 8" E), Chiang Mai province (Fig. 1) were studied. All the villages are located near the border with Myanmar. They are believed to have migrated into northern Thailand at different times (Thaitambon, 2000).

2.2. Data collection

One hundred and twenty-six key informants (57 males and 69 females, aged 16–39, 40–60, and 60–80 years (Teklehaymanot, 2009)) (Table 1) were randomly selected for semi-structured interviews (Martin, 1995; Gomez-Beloz, 2002; Huai and Pei, 2004). They were shown plant specimens and photographs, and were asked for their vernacular names, used parts, modes of preparation, dosages, notable characteristics (e.g. pigmentation and scent), and ecological data (abundance, elevation, and habitats). The plant specimens were deposited (with voucher numbers) at the Department of Biology, Faculty of Science, Chiang Mai University and Queen Sirikit Botanic Garden Herbarium (QBG), Chiang Mai, Thailand. Plant identification was done by a taxonomist, J.F. Maxwell (CMU Herbarium), based on taxonomic literature such as Flora of Thailand (Santisuk and Larsen 1999, 2000), Flora of Northern Thailand (Gardner et al., 2006), and on comparison with existing specimens in the herbarium. The information gathered from the key informants established the domain of a

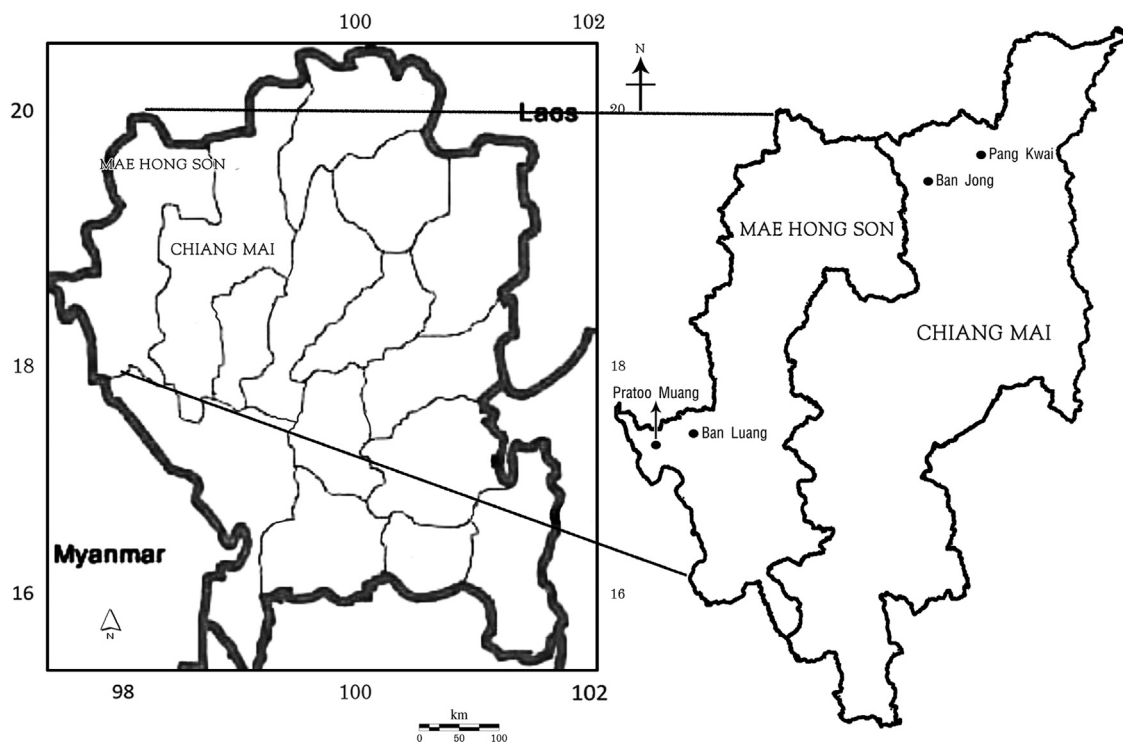


Fig. 1. Four studied Tai Yai villages (Trek Thailand Team, 2012).

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