

Two New Species of *Kaempferia* (*Zingiberaceae*) from Thailand

Piyaporn SAENSOUK^a and Surapon SAENSOUK^{b,*}

^aPlant and Invertebrate Taxonomy and Its Applications Unit Group,
Department of Biology, Faculty of Science, Mahasarakham University,
Maha Sarakham, 44150 THAILAND;

^bPlant and Invertebrate Taxonomy and Its Applications Unit Group,
Walai Rukhvej Botanical Research Institute, Mahasarakham University,
Kantarawichai District, Maha Sarakham, 44150 THAILAND

*Corresponding author: surapon.s@msu.ac.th

(Accepted on March 17, 2021)

Two new species of *Kaempferia* (*Zingiberaceae*) from northeastern Thailand, *K. unifolia* Saensouk & P.Saensouk and *K. isanensis* Saensouk & P.Saensouk, are described, photographed and illustrated. They are rare species endemic to Thailand.

Key words: *Kaempferia isanensis*, *Kaempferia unifolia*, new species, northeastern Thailand, *Zingiberaceae*.

Kaempferia L. is a genus belonging to tribe *Zingibereae*, family *Zingiberaceae* (Larsen and Larsen 2006) in which sixty species have been reported from India to Southeast Asia. In Thailand, many researchers have studied this genus (Jenjittikul and Larsen 2000, Saensouk and Jenjittikul 2001, Larsen and Larsen 2006, Picheansoonthon and Koonterm 2008, 2009, Picheansoonthon 2010, 2011, Techaprasan et al. 2010, Phokham et al. 2013, Wongsuwan et al. 2015, Saensouk and Saensouk 2019a, b). In this article, two new species of *Kaempferia* (*Zingiberaceae*) from northeastern Thailand, *K. unifolia* Saensouk & P.Saensouk, sp. nov. and *K. isanensis* Saensouk & P.Saensouk, sp. nov., are published with descriptions, photographs, illustrations, ecological data, distribution data, etymology, vernacular name, conservation status and uses.

Taxonomic treatments

1. *Kaempferia unifolia* Saensouk & P.Saensouk,

sp. nov. [Figs. 1A–C, 2]

Type: THAILAND. Phibun Mangsahan District, Ubon Ratchathani Province, 15 July 2015, Saensouk 1200 (KKU!–holotype; BK!, BKF!, QBG!–isotypes).

Kaempferia unifolia is most similar to *K. isanensis*, *K. siamensis* Sirirugsa (Sirirugsa 1992) and *K. picheansoonthonii* Wongsuwan & Phokham (Phokham et al. 2013) but it differs in having a one-leaved pseudostem, but after anthesis looking as if 2-leaved with another leaf developed from a new pseudostem; leaf blade thick, hard, succulent, and spheroidal; and leaf margin decurved to the ground (Table 1; Figs. 1A–I, 2, 3).

Perennial herb. Pseudostem ca. 2.5 cm high, one-leaved, but after anthesis looking as if 2-leaved with another leaf developed from a new pseudostem. Rhizome short, bearing several roots and storage roots. Bladeless sheaths 2, up to 1.5 cm long, glabrous, greenish. Foliage leaf glabrous 1; sheaths up to 2 cm long,

the type locality, Thailand. So, the conservation status of the plant based on the evaluation criteria of the IUCN Red List (IUCN 2019) should be Endangered (EN) status. It is a rare and endemic species.

This research project is financially supported by Mahasarakham University (Fast Track 2020). We are deeply indebted to Mahasarakham University and Walai Rukhavej Botanical Research Institute for their facilities during this study. Warm thanks also to the curators and staff of the herbaria visited (AAU, BK, BKF, E, K, KKKU, P, QBG and SING). We would like to thank our students for their help during the field trip. We are grateful reviewers for their valuable suggestions and comments.

References

- IUCN 2019. The IUCN Red List of Threatened Species. Version 2019-2. <http://www.iucnredlist.org>. Accessed 23 February 2019.
- Jenjittikul T. and Larsen K. 2000. *Kaempferia candida* Wall. (*Zingiberaceae*), a new record for Thailand. Thai Forest Bull., Bot. **28**: 45–49.
- Larsen K. and Larsen S. 2006. Gingers of Thailand. Queen Sirikit Botanic Garden, Chiang Mai.
- Phokham B., Wongsuwan P. and Picheansoonthon C. 2013. Three new species of *Kaempferia* (*Zingiberaceae*) from Thailand and Laos. J. Jpn. Bot. **88**(5): 297–308.
- Picheansoonthon C. 2010. *Kaempferia lopburiensis* (*Zingiberaceae*), a new species from Central Thailand. J. Jpn. Bot. **85**(3): 148–152.
- Picheansoonthon C. 2011. Two new *Kaempferia* (*Zingiberaceae*) from Thailand. J. Jpn. Bot. **86**(1): 1–8.
- Picheansoonthon C. and Koonterm S. 2008. Notes on the genus *Kaempferia* L. (*Zingiberaceae*) in Thailand. J. Thai Tradit. & Altern. Med. **6**(1): 73–93.
- Picheansoonthon C. and Koonterm S. 2009. A new species of *Kaempferia* L. (*Zingiberaceae*) from Northeastern Thailand. Taiwania **54**(1): 52–56.
- Saensouk S. and Jenjittikul T. 2001. *Kaempferia grandifolia* sp. nov. (*Zingiberaceae*), a new species from Thailand. Nordic J. Bot. **21**(2): 139–142.
- Saensouk S. and Saensouk P. 2019a. *Kaempferia mahasarakhamensis* sp. nov. (*Zingiberaceae*), a new species from Northeastern Thailand. Taiwania **64**(1): 39–42.
- Saensouk S. and Saensouk P. 2019b. *Kaempferia phuphanensis* (*Zingiberaceae*), a new species from Thailand. J. Jpn. Bot. **94**(3): 150–153.
- Sirirugsa P. 1992. Taxonomy of the genus *Kaempferia* (*Zingiberaceae*) in Thailand. Thai Forest Bull., Bot. **19**: 1–15.
- Techaprasan J., Klinbunga S., Ngamriabsakul C. and Jenjittikul T. 2010. Genetic variation of *Kaempferia* (*Zingiberaceae*) in Thailand based on chloroplast DNA (*psbA-trnH* and *petA-psbJ*) sequences. Genet. Molec. Res. **9**(4): 1957–1973.
- Wongsuwan P., Prasarn S. and Picheansoonthon C. 2015. *Kaempferia koontermii* (*Zingiberaceae*) — A new species from Thailand. J. Jpn. Bot. **90**(1): 29–33.

P.Saensouk^a, S.Saensouk^b: タイ産 *Kaempferia* 属 (ショウガ科) の 2 新種

タイ東北部からショウガ科 *Kaempferia* 属の2新種を記載した。 *Kaempferia unifolia* Saensouk & P.Saensouk は Phibun Mangsahan Districtから記載された種で、既知の種のうちでは、*K. siamensis* Sirirugsa と *K. picheansoonthonii* Wongsuwan & Phokham に最も近いが、本種は偽茎に葉が1枚つき、花後に新たな偽茎に1葉がつくためにあたかも2枚の葉が付いているように見えること、そして葉身は厚くかつ硬く、多肉で球状になり、葉縁が下向きに湾曲するか地上に横たわることで区別される。 *K. isanensis* Saensouk & P.Saensouk は Nong Phok District

から記載されたもので、近縁な *K. unifolia*, *K. siamensis*, *K. picheansoonthonii* から偽茎に葉が1枚付き、葉身は薄くて軟らかく、葉縁が下向きに湾曲することなく、また地上に横たわることもない点で区別される。2新種と近縁種の区別点は Table 1 に挙げた。

^aタイ・Mahasarakham University,
Faculty of Science,

^bタイ・Mahasarakham University,
Walai Rukhavej Botanical Research Institute)