



CHAPTER I

INTRODUCTION

Xyridaceae or Yellow-eyed grass family occurs in tropics and subtropics of North America and in tropics and subtropics of South America, Africa, Australia, Europe and continental Asia (Lawrence, 1958). Xyridaceae composed of five genera (Kral, 1992), namely *Abolboda* (21 species), *Achlyphila* (one species), *Aratitiopea* (one species), *Orectanthe* (2 species) and *Xyris* (about 250 species) (Kral, 1992). Formerly, taxonomists considered the Xyridaceae to have two genera, *Abolboda* and *Xyris* (Lawrence, 1958). Because of extensive field exploration within the neotropic resulted in discovery and description of many morphologies, Xyridaceae so escaped these traditional generic concepts. Nevertheless, the undetermined Xyridaceae was defined treatment during the early 1980's and proposed for publication as a new taxa (Kral and Wanderly, 1988).

Hansen B. described the characters of Xyridaceae in the Flora of Thailand, volume 5 (1987) as following :-

Perennial, grasslike herbs with radical, sheathing linear or filiform leaves. Inflorescence a pedunculate dense spike. Flowers subtended by imbricating, persistent bracts. Corolla yellow, marcescent. Fruit capsular. Seeds numerous.

In Thailand, there is only one genus with 11 species and these are :-

1. *Xyris lobbii* Rendle
2. *X. complanata* R. Br. : Tan (ตาน) (Peninsular) ; ya krathiam (หญ้ากระเทียม), ya krathin (หญ้ากระถิน) (South-eastern)
3. *X. bancana* Miq.
4. *X. indica* Linn. : Krathin thung (กระถินทุ่ง), krathin na (กระถินนา), ya krathiam (หญ้ากระเทียม), ya bua (หญ้าบัว) (South-eastern) ; ya khi klak (หญ้าจ๊กลาก) (Central)
5. *X. grandis* Ridl.
6. *X. capensis* Thunb. : Ya hua khot (หญ้าหัวคอด) (North-eastern)
7. *X. wallichii* Kunth
8. *X. pauciflora* Willd. : Ya khon kai (หญ้าขนไก่) (North-eastern); kung (กุง) (Peninsular)
9. *X. intersita* Malme
10. *X. tuberosa* Ridl. : Ya dok lueang (หญ้าดอกเหลือง) (North-eastern)
11. *X. kradungensis* Hansen

The *Xyris indica* Linn. is a member of this genus which is native to India (Kirtikar and Basu, 1981). It also distributes in Burma, Indochina, China (Hainan), Malaysia and Australia. In Thailand, this plant is found in North-eastern : Udon Thani, Khon Kaen ; Eastern : Surin ; South-eastern : Chanthaburi, Prachin Buri ; Central: Nakhon Nayok, Suphan Buri ; Peninsular : Phangnga, Krabi, Songkhla, Yala, and Surat Thani (Hansen, 1987).

The ecology of this plant is on open, swampy places along ricefields in the lowland up to 100 m altitude. Flowering is on (August-) October-January (-February).

The characteristic features of *Xyris indica* Linn. is described in the Flora of Thailand (1987) as following :-

Leaves without a ligule, margins not thickened ; apex bluntly oblique to acute, (10-) 30-50 (-70) cm by (2.5-) 3-6 (-8) mm ; blade flat with conspicuous, short transverse ribs connecting the longitudinal nerves. Scape terete with 6-15 longitudinal ridges, (18-) 30-70 (-110) cm by (1.2-) 2-3 (-4.5) mm Inflorescence spherical to cylindrical, (0.7-) 1-1.5 (-3.5) by 0.8-1.4 cm Median bracts with margins entire, lighter or darker brown, numerous light spots scattered in triangularrhombic field below apex, field otherwise not different from surface of bract neither in colour nor structure. Lateral sepals light brownish to almost hyaline, with coarsely serrate crest.

There is no report about the medicinal uses of this plant in Thailand. The native of Bengal esteem that *Xyris indica* is a plant of great value for troublesome eruption called ringworm. The plant is also used in itch and leprosy (Kirtikar and Basu, 1981).

There has been only one phytochemical report on *Xyris indica* Linn. that chrysazin has been isolated from the flowering heads (Nijsiri Ruangrunsi, 1980). Another report on *Xyris semifuscata*

Baker, chrysazin and 3-methoxy chrysazin have been isolated (Fournier *et al*, 1975).

A preliminary chemical investigation of this plant reveals the presence of anthraquinone. The result is latter confirmed by thin-layer chromatography. Accordingly, this present investigation deals with the extraction, isolation and identification of compounds occuring in flowering heads of this species. The result is expected to contribute to our knowledge on chemotaxonomy and phytochemistry of the genus *Xyris*.



Figure 1 กระดินทุ่ง, *Xyris indica* Linn. (Drawing)

(Kirtikar and Basu, 1975)



Figure 2 กระถินทุ่ง *Xyris indica* Linn. (Photograph)