

***Chrysopogon zizanioides* (L.) Roberty (Gramineae)
Part I. Pharmacognostic Identification of Roots**

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ABSTRACT

*The purpose of this study is to identify the roots of yah faek (vetiver grass) or *Chrysopogon zizanioides* (L.) Roberty (syn. *Vetiveria zizanioides* (L.) Nash. ex Small) by taxonomic and pharmacognostic identification. Seven local cultivars of vetiver roots, viz., Srilangkha, Maehea, Indian, Yeepoon, Monto, Maeteay and Prarachataan were collected from similar habitats. Microscopic study revealed differences in the characteristics of parenchyma cells, collenchyma cells, cork cells, sclereid cells, vascular bundles and trichomes as well as starch grains, calcium oxalate crystals, oil granules, etc. This technique can be used to identify, characterize and distinguish the roots of yah faek.*

Key words: Yah faek, Vetiver grass, *Chrysopogon zizanioides*, *Vetiveria zizanioides*, Pharmacognostic identification

INTRODUCTION

H.M. King Bhumibhol's visions on soil and water conservation strive enrich watersheds and prevent soil erosion. H.M. King Bhumibhol wants to use simple agricultural techniques and vetiver grass (*Chrysopogon spp.*) was brought in to conserve water and riverbank stability. Vetiver grass propagates easily, requires less aftercare, absorbs moisture in its roots, holds soil nitrogen and possesses ability to filter the toxins and chemicals which are otherwise discharged to rivers. Many countries in Asia use this grass to conserve bank soil erosion successfully. Though vetiver grass has many useful purposes, the negative effects of its distribution should be considered. The benefits of vetiver grass in other aspects, especially applied usages, should be studied to help balance nature.

The genus *Chrysopogon* (Gramineae) has a total of 26 species in the world, 2 of which are found in Thailand. The two vetiver grass in Thailand, "Yah faek don" - *Chrysopogon nemioralis* (Balan.) Holtt. Camus and "yah faek hawm" - *C. zizanioides* (L.) Roberty, are characterized by distinguished flower morphology and anatomy of their roots and leaves. The term *zizanioides* means riverside. *C. zizanioides* (L.) Roberty can grow in swamps and can endure 45 days in flood, but also grows on hills or mountains and resists drought for several months. Vetiver grass had rhizome buds which are used to propagate and easy to control. Germination by seeds is not common. This grass does not tend to become a noxious weed. Pruning techniques are applied to promote root and leaf growth and to retard and stunt the flowers that can cause outbreeding and mutations. Furthermore, this grass can grow vigorously on any kind of soil and local climate. Consequently, *C. zizanioides* (L.) Roberty is a species