



## CHAPTER I

### INTRODUCTION

White Kwao Krua (*Pueraria mirifica* Airy Shaw & Suvatabandhu) was the Thai herbal riched in phytoestrogens, the active ingredients with estrogen-like biological activity and with agonistic and/or antagonistic effect to estrogen .

It had been long recorded to be consumed as folklore medicine among Thai people in many parts of the country for centuries due mainly to the promotion of human physical appearance as enhancing breasts, inducing menstruation in woman of 60-80 years of age, regrowing hair on the bald and turn the hair from white to black as well as improving complexion. It could help also to feel vigorous. The side effects were also mentioned when taking overdose as exhibiting some headache, malaise and vomiting (Kerr, 1932). In the northern part of Thailand, the powder derived from its tuberous root was consumed in women for rejuvenile and aphrodisiac purpose (Wanandorn, 1933). Once mixed with honey, it could be used as a general tonic or nourishment for people (Nilanidhi et al., 1957). It could be rejuvenating and prolong life after orally taking drug composed of honey and three myrobalans. The breasts could be enlarged and soreness (Suntara, 1931). This symptom remained for two weeks after stop consuming the herb (Wanandorn, 1933).

The consumption of *P. mirifica* was later subsided because of the rumor that it could cause death, which could be regarded by two reasons, overdoses (Wanandorn, 1933) or wrong plant taken (Kashemsanta and Suvatabandhu, 1952).

Pharmacognosy of *P. mirifica* was confirmed from the bioassay that of it contained high estrogenic activity. It could exhibit effect on both physical and mental change (human) or mating behavior (animal). The herbal estrogenic activity was not depend on the size of the tuberous root but the tuberous root which were collected in rainy season showed stronger estrogenic effect than that collected from the summer season (Smitasiri, Kiat-adisorn and Anuntalabhochai, 1986). These results were varied which were depended on the timing and amount of consumption and also the material which was taken up in different period to be used in the experiment (Sukhavachana, 1949). Thus, the material was the important information which have to be clarify.

At present, it was the first stage in the development and manufacturing of *P. mirifica* into food supplement and cosmetic products for both domestic consumption and exportation. The booming of the business trend had accelerated the villager to dig the huge amount of tubers from natural sources and thus resulted in rapid decreasing of the herbal population. Furthermore deforestation in Thailand also caused decreasing in the population of *P. mirifica*. The propagation and cultivation of the herb were then urgently needed.

Since *P. mirifica* was self-pollinated and a widespread in various regions of Thailand, this resulted in many cultivars. However the data have not yet been collected and clarified such as the number of tuberous root per plant, the size of the tuberous root and how differ of the chemical contents. There was also not enough reports on the basic and farming production. Due to the establishment for a commercial scale production to serve the world demand is needed, therefore, the mother plant should be sorted out from the jungle and adapted to the huge plantation .

**Aims of the study are as follows:**

1. To study the distribution and ecology of *P. mirifica* from various part of Thailand, apart from the study of Surisa Reechareon (Reechareon, 1996)
2. To do the field trial of the collected samples from Amphur Doi Tao in Chiangmai province and Amphur Sai Yok in Kanchanaburi province.
3. To do analysis of the collected samples and also the field grown *P. mirifica* using Thin Layer Chromatography (TLC) method analysis