

CHAPTER 1

INTRODUCTION

At present, the number of native pigs in Thailand has largely diminished due to the popularity of imported commercial breeds with higher productive performances. On finally many Thai native pigs have been crossbred with European commercial breeds as well as with some Chinese breeds to improve their genetic potential for economic important traits. Furthermore, most of the Thai native pigs are raised by some groups of highland people in Northern Thailand and by some villages that keep small pig populations (Theera and Choke, 1980). So those have been a permanent risk to loose genetic diversity caused by genetic drift, immigration and crossbreeding without breeding programs. A survey in 1994 found that Thai native pigs were endangered or nearly extinct (Rattanonchart, 1994).

Biodiversity is now an important concept that all countries emphasize on. Studies of their genetic information, the development of their economic traits and the preservation of the indigenous breeds all over the world are very important steps for the development of genetic resources. However, phylogenetic descriptions of Thai native pigs provide currently no comprehensive information. Recently, molecular techniques have been widely used to analyze phylogeny and to assess in pigs. The most popular techniques have been microsatellites (e.g., Chaiwatanasin *et al.*, 2002; Yang *et al.*, 2003), amplified fragment length polymorphism (AFLP) (e.g., Sookmanee *et al.*, 1999; Kim *et al.*, 2002) and mitochondrial DNA sequence polymorphisms analysis (e.g., Okumura *et al.*, 2001; Aves *et al.*, 2003).

The objective of this research was to analyze the phylogenetic relationship and the genetic variation within Thai native pigs in the Northern area, and some other Asian and European breeds for further studies on the genetic of different phenotypes. This investigation was performed by mitochondrial DNA D-loop region sequence analyses. The final goal with be to develop breeding programs to conserve the breeds and to generate resource populations of Thai native pigs in the future.