



ABSTRACT

ABDURAHMAN HODA. The Study of characteristic, productivity and population dynamics of *capra hircus* for glorifying program of goat livestock in North Mollucas Province. Under the supervision of MULADNO, SUBANDRIYO, and D.T.H.SIHOMBING

The purpose of this research is to know the genetic characteristics, productivity and population dynamics of the *Capra hircus* livestock as an effort to design breeding programs in North Mollucas Province. This research was conducted in two steps: First, is a research to take blood sample measure and body productivity sizes, from January to August 2007. Second is molecular analysis which has been done in Genetic Laboratory Zoology, LIPI, in Cibinong from September to December 2007. This analysis uses mitochondrial D-loop site after being amplified through Polymerase Chain Reaction (PCR) using primers of forward 15388F 5' gcc cca cta tca aca ccc aaa gc 3' and reverse primer CD-774R 5' aat ggg cga ttt tag atg aga tgg c 3'. The results show that of 780 base nucleotides that had been sequenced, it was found that there were 53 polymorphic sites and 41 haplotypes found in six islands, the haplotype diversity mean index was 0.132, genetic space between 0.010 and 0.022 with the whole mean 0.018.

A total of 713 goats were characterized for 10 body size characters and analyzed by using General Linear Model (GLM) procedure, proc CANDISC and proc Discrim (SAS 1985) and fenogram tree construction using MEGA4 (Kumar *et al.* 2005). Result of the research shows the goats located in Bacan Island, Sanana, Ternate and Sofifi belong to one group; those in Morotai and Jailolo form another group. Furthermore, the body length size, chest width, chest girth, chest depth were significantly different ($P < 0,01$). The Rump length was also significantly different ($P < 0,05$) due to both island types and gender types. On the other hand, the shoulder height size and skull length did not show significantly different ($P > 0,05$). Using the body length variable and skull length as the variables of goat productivity in North Mollucas. It is revealed that level of productivity of kacang goats in North Mollucas based on sex ratio was 1 : 4.84, calving interval was 330.1 day, litter size was 1.8 so that the acceleration of the main reproduction became 1.99 individual/female/year.

Perception on dynamics population of kacang goats in North Mollucas was shown by the following productivity conditions: Mortality rate of young was 15% and the adult mortality rate was 9.99%. Hence prediction of population of kacang goat in the year 2010 is 340,263; with adult male population is 30,624, while adult female population is 149,716. The female young is predicted to be 81,772, and male young is 78,261. Finally, by considering internal factors for example human resources, livestock resources, glorifying targets, parameters genetics, selection and breeding, and external factor for example infrastructure, government policy, cultural social factors and market through focused discussion of this research it is recommended the glorifying pattern using two strata with the 'open nucleus' system as its glorifying pattern can be used for the development of livestock of kacang goat in North Mollucas.

Keywords : characteristic genetic, productivity, population dynamics, *capra hircus*