



PROCEEDING INTERNATIONAL CONFERENCE 6th SAADC 2017

Conference on Sustainable Animal Agriculture for Developing Countries

**“WISDOM OF USING LOCAL RESOURCES FOR DEVELOPMENT OF
SUSTAINABLE ANIMAL PRODUCTION IN DEVELOPING COUNTRIES”**



The Singhasari Resort, Batu City, Indonesia, October 16-19, 2017

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PREFACE

It is my privilege to thanks to all of authors for your enthusiasm in participating and contributing papers at this 6th International Conference on Sustainable Animal Agriculture for Developing Countries (The 6th SAADC-2017) that had been successfully held on 16-19 October 2017 in The Singhasari Resort, Batu City, Indonesia with the theme of “*Wisdom of Using Local Resources for Development of Sustainable Animal Production in Developing Countries*”

The primary objective of the 6th SAADC-2017 was to provide a scientific forum for animal scientists and producers, and administrators of livestock related agencies, particularly from the developing countries, to share their experiences, discuss issues and suggest recommendations to develop further a more sustainable livestock production.

This proceeding contains selected papers that were presented in the conference based on the quality and relevancy to the confencence. The papers are reflecting responsiveness of animal scientist from various countries in promoting sustainability of animal agriculture for the prosperity of the never ending generations. These proceeding hopefully will certainly enrich the body of knowledge and understanding about various aspects related to sustainable animal agriculture.

Our special thanks are also for the SAADC President for his confidence to our Universitas Brawijaya to organize this prestigious conference. Also, congratulation that SAADC is now listed in the International Congress and Conference Association (ICCA) based on its quality and consistent activities.

We also wish to thank all partners and sponsors for their support to the success of the conference. To colleague members of the organizing committee, please accept my deep appreciation for your hard working in ensuring the success of the conference.

Yours Sincerely,

Prof. Ifar Subagiyo
Chief Editor

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Dendogram of Indonesian local Ettawah Goats in three villages of Sumenep Madura East Java

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Abstract

The highest small ruminant population in Indonesia was goats, many East Java breeders keep goats which breed of Indonesian Local Ettawah Goats (ILEG). The purpose of this research was to know the population diversity through phenotype similarity in Sumenep Madura East Java. The subject of this research was 54 heads of ILEG which fulfill the criteria of sampling in Kalianget, Saronggi and Poteran villages. The research method was a case study with primary data taking through direct observation of ILEG does in the field. Observed variables were included variations of qualitative traits included the shape of the head, face, forehead, horns, ears, back, udder, nipple, and the color of head, face, legs and tail. Data analysis was performed with the NTSYSpc version 2.0 software program before analyzing the data was converted into binary form (1, 0). The results showed that the phenotype similarity in the three villages was range between 0.58-1. The conclusion was that the diversity of phenotypes between populations in the villages of Kalianget, Saronggi, and Porteran was 42% with a dendogram of 58%.

Keywords: phenotype diversity, goat, qualitative traits

Introduction

ILEG is one of the most well-kept livestock in the Indonesian territory crossed between Ettawah goat from India and local goat Indonesia. The type of ILEG as a dual purpose type that produces meat and milk is very suitable with the characteristics of Indonesian farmers so that it can increase the income of farmers. The breeder's characteristic is to keep the goat as a saving and not the main income (Sugiarto and Ahmad, 2015) so that the livestock is sold only when there are a family needs but not by slaughtering age. Therefore, by raising dual purpose goat the farmers can get additional daily income from milk production and goat as a saving.

The island of Madura is the territory of Indonesia northeast of East Java with an area of 5,168 km² (smaller than the island of Bali) which is famous since ancient times has a tradition as a local cattle farmer (Madura cattle). But recent developments, people in the area have also bred ILEG goats and are reinforced by local government support through a goat contest. Sumenep regency is one of the areas of ILEG goat with good population growth.

ILEG goat breeding program in Madura was still unclear and unclear and the goats became a second priority after Madura cattle. So it was necessary to research about variation of qualitative character of ILEG goat in Madura island based on BSN (2015) standardization PE goat breeds with qualitative traits such as white, black, brown or combination of colour body; short tail; convex face; small horns; long, hanging and drooping down ears. Therefore, the purpose of this research was to know the population diversity through phenotype (qualitative trait) similarity in Sumenep Madura East Java.

Methodology

The method of this study was a case study with sampling in a purposive sampling. Research material was 54 does of ILEG which fulfill the criteria of sampling in Kalianget, Saronggi and Poteran villages. The does samples were does that have given the kid at least once and were used for breeding. The research location was in Sumenep area consisting of three villages namely Kalianget (KA), Porteran (PO), Saronggi (SE).

Variations of phenotypes observed were qualitative traits including hair color (body, tail, face, and legs), face form, forehead profile, horn shape, head profile, horn shape, fold ears, back form, udder form and number of nipples. Data were tabulated in the form of binary data (Yakubu et al., 2010 and Machado et al., 2000), the emerging phenotype was scored 1 and the non-appearing phenotype was scored 0. The tabulated data were analyzed by NTsys version 2.0 software to obtain a dendrogram of qualitative traits so as to obtain similarity phenotypes.

Results and Discussion

The results of field identification for qualitative traits of ILEG maintained in Sumenep were still in accordance with standard goats PE (BSN, 2015) seen from the main characteristics of long ears down, the color of the body, face, legs, and tail were a combination of white, black, chocolate. The black or brown color of the goats because it was related to eumelanin content in goat coat which coated by melanocortin 1 receptor and inherited in offspring (Le Pape et al., 2008 and Machado et al., 2000). From binary data analysis with NTsys version 2.0 between the group of does in Kalianget Village (KA), Porteran (PO), Saronggi (SA) of Sumenep Regency could be seen in Figure 1.

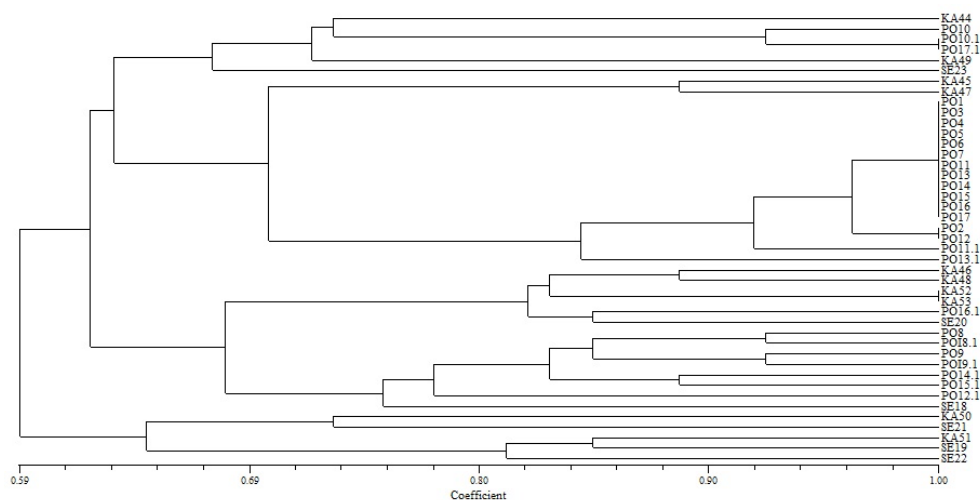


Figure 1. Dendrogram of Qualitative Traits in Three Villages Sumenep Madura Island

Figure 1, based on the similarity of more than two individuals, there are two clusters, the first cluster was the ILEG in the village of Porteran with the largest number of does, and the subcluster was ILEG from Saronggi and Kalinget villages. The second cluster was the ILEG in Kalianget and Saronggi villages only, in accordance with the opinion of Zaitoun et al. (2004) Jordan's local goat group is divided into two main clusters based on morphology characteristics.

In the village of Porteran, there was a similarity value of more than two individuals with the highest score (100%), this meant that the does in the village of Porteran tended to be the lowest of its phenotype diversity compared to the Kalianget and Saronggi groups. While the dendrogram based on similarity of qualitative traits in three villages of Sumenep district was

0.58, it meant that the phenotype diversity between Kalianget, Porteran and Saronggi villages was 42%. The phenotype diversity of this study was lower than that of Mudawamah et al. (2014) values of diversity based on the primary OPA RAPD between the natural goats of PE and 52% for artificial insemination.

Conclusion

The diversity of phenotypes based on qualitative traits between populations in the villages of Kalianget, Saronggi, and Porteran (Sumenep, Madura Island) was 42% with a dendrogram of 58%.

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