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Review

Breeding goats for meat production 2. Crossbreeding and formation of composite population ☆

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Abstract

This review, the second in the series on breeding goats for meat production, examines the role of crossbreeding and composite population in improving economically important traits necessary for commercial production of meat goats. In general, the crossbreeding of indigenous goats or established breeds with one or more breeds (Alpine, Beetal, Boer, Jamunapari, Nubian and Saanen) that have demonstrated genetic merit in the performance traits of economical importance rely on specific cross and back cross to achieve increased productivity. Concurrently, the combining of desirable morphological characteristics and production performance of two or more breeds in composite populations has had considerable success in other livestock and poultry species, invigorating interest in the breeding of meat goats for commercial production. There have been a number of studies, world-wide, on evaluation of indigenous goats or established breeds and their crosses, including crossbreds derived from exotic breeds that are summarized. Furthermore, the Boer breed developed in South Africa has considerable potential for rapid and permanent improvement of meat production from goats, and studies on the Boer-sired crossbred offspring are highlighted.

Keywords: Meat goat; Crossbreeding; Composite breeds; Review

1. Introduction

The colossal amount of variability amongst goat genetic resources in the world provides the best opportunity to accelerate genetic improvement of economically important traits of meat goats (Fahmy and Shrestha, 2000; Shrestha and Fahmy, 2005). The 570 goat breed populations currently listed in the inventory of domestic animal diversity of the Food and Agriculture Organization (FAO) of the United Nations (Scherf, 2000) includes many breeds, types, populations and landraces. Some of those have not only demonstrated considerable merit in meat production traits when used as pure breeds, but also shown promise in specific crossbred combinations involving two or more breeds (Garcõa and Gall, 1981; Gall, 1982, 1996; Devendra, 1982, 1988; Devendra and Burns, 1983). Despite the large number of goat breeds in the world, there are only a few objective evaluations that are independent of the range of environmental conditions in which goats are kept (Warmington and Kirton, 1990). Ruvuna et al. (1992) suggested that breed differences in carcass characteristics should be utilized by taking into account segmentation of varying production systems and established markets for meat and meat products. This

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