

Sheep Breeding: Studies in the Agricultural and Food Sciences

Development of composite sheep breeds in the world: A review

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Rasali, D. P., Shrestha, J. N. B. and Crow, G. H. 2006. Development of composite sheep breeds in the world: A review. *Can. J. Anim. Sci.* **86**: 1–24. In the 1850s, breeders established breed societies which maintained flock registries and actively participated in show rings, exhibitions and auctions promoting pure breeds that conformed to the breeders' vision of uniform and distinct morphological characteristics. At that time, the performance of the pure breeds over grade sheep was overwhelming. As a result influential government officials, specialists and scientists had to acknowledge their superiority. The supply of purebred seedstock that was initially adequate became sparse in the years following the World War II because demand arising from the increasing human population exceeded the capacity for production. Thus, stimulated interest in higher productivity for commercial production resulted in the development of multi-breed synthetic populations for specific objectives e.g. reproduction, meat quality, meat and wool combinations, wool for textile, carpet wool, fur, and milk production. Today, as many as 418 sheep breeds that have been documented in nearly 75 countries are combinations of two or more distinct breeds, populations and landraces that have records on pedigree and morphological characteristics, and in some cases, production performance similar to those for long established breeds. The present day methods of forming composite breeds are based on a wealth of knowledge and creative skills passed on from breeder to breeder over the centuries, as well as the application of quantitative genetic principles that had demonstrated tremendous success in the development of hybrid corn. Research findings also suggested that in well-planned efforts to create composite breeds, the genetic background of the foundation breeds should be as broad as possible to achieve increased additive genetic variance and heterozygosity from a large proportion of segregating genes and lower probability for the expression of lethal recessive genes. There was always the possibility of lower performance in the composite breeds compared with specific crosses derived from two or more breeds, because of their inability to fully realise any benefit from individual and maternal heterosis (considered important in the mammalian species). Though unlikely, loss in performance of composite breeds could occur from recombination of non-allelic genes and the migration of undesirable genes. Nevertheless, there is opportunity for accelerating genetic response to selection as well as heterosis retention unless a rise in inbreeding occurs in the early generations causing loss in performance. The real operational advantage of a multi-breed composite population lies in raising a single breed with nearly the same productivity instead of two or more breeds for subsequent crossbreeding. Sheep in the domain of developing countries adapt well to severe climatic conditions and arduous terrains that are often not suitable for cultivation or for raising the larger livestock and are fully exploited for their ability to produce a variety of commodities without disrupting cultural harmony. Likewise, more breeds were developed in sheep than in other livestock species with the United Kingdom, Russian Federation, Australia, Poland, China, France, the United States of America and New Zealand each having established 15 or more composite breeds that offer real advantages. In North America and worldwide, there is further prospect for complementing established breeds with exotic breeds to achieve potential biological ceiling in reproduction, lean muscle growth, feed efficiency and milk yield of sheep. In the future, application of advances in molecular methodologies could possibly lead to the development of composite breeds for specific objectives from a combination of widely different breeds, populations and landraces, probably, even from unrelated species.

Key words: Sheep, composite breeds, exotic breeds, indigenous populations

Rasali, D. P., Shrestha, J. N. B. et Crow, G. H. 2006. Panorama des races composites de moutons dans le monde. *Can. J. Anim. Sci.* **86**: 1–24. Dans les années 1850, les éleveurs de moutons se réunissent en associations qui tiennent des registres et participent activement aux concours, aux expositions et aux enchères promouvant des sujets de race pure conformes à la vision d'éleveurs illustrant une morphologie distincte fondée sur des caractères uniformes. À cette époque, le rendement des sujets de race pure dépassait considérablement celui des hybrides commerciaux. Les représentants des gouvernements, les spécialistes et les scientifiques étaient contraints d'admettre cette supériorité. Dans les années qui suivent la Deuxième Guerre mondiale, le nombre de géniteurs de race pure, adéquat au départ, a commencé à s'amenuiser, la demande attribuable à la croissance démographique dépassant la capacité de production. L'intérêt pour un meilleur rendement dans les élevages commerciaux a donc donné lieu à la création de populations multiraciales artificielles issues à des fins particulières, notamment la reproduction, une viande de qualité, la production de viande et de laine, la laine destinée aux textiles, la laine à tapis, la fourrure et la production de lait. À présent, jusqu'à 418 races dans près de 75 pays combinent les caractères de deux ou de plusieurs races, populations ou variétés indigènes distinctes dont on a enregistré la généalogie et la morphologie et dont la performance au niveau de la production ressemble, dans certains cas, à celle des races établies de longue date. Les méthodes modernes employées pour créer des races composites reposent sur une masse de connaissances et de méthodes transmises d'éleveur en éleveur des siècles durant, mais aussi sur l'application des principes génétiques quantitatifs qui ont connu un succès retentissant dans l'amélioration du maïs. Les résultats des recherches indiquent que, pour être bien conçu, un programme d'hybridation doit supposer que la base génétique des races fondatrices est aussi vaste que possible de manière à garantir la meilleure variation génétique cumulative et l'hétérozygotie de nombreux gènes ségréguant ainsi que la plus faible probabilité quant à l'expression de gènes récessifs dangereux.

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Sheep Breeding, Second Edition covers sheep breeding in its widest context through a collection of papers about sheep breeding from experts. Planning Your Sheep Handling Facility (Ministry of Agriculture Food & Rural Affairs) Sheep Production and Management: Sheep Health (New Mexico State .Brand new Paperback. All orders get full access to our online order status tracking service, allowing you to view realtime order progress. Please note that first. Agriculture and Food Sciences Research, , 3(1): 20 Local sheep and goat breeds in Nigeria have the potential to supply a significant portion of the . Manuscripts on any aspect of research of direct relevance to Irish agriculture and food production, including plant and animal sciences, food science, food science. Faculty of Agricultural and Food Sciences and Environmental Management One of the research of our department is to develop breeding programmes. In respect to sheep breeding for the last few years our co-workers are studying Most of the products produced by livestock are utilized as food, and. Turkish Journal of Agriculture - Food Science and Technology (TURJAF) aims to will be given to studies involving farm animals (cattle, buffaloes, sheep, goats, systems, agricultural economics, genetics and plant breeding, forest science. Plant sciences, sustainable farming systems and food quality. Shopping Cart: Australian Journal of Agricultural Research 17, CrossRef Dickerson GE, Glimp HA () Breed and effects of lamb production of ewes. Journal of. UCD Lyons Research Farm is the teaching and research facility operated by University for the School's of Agriculture and Food Science and Veterinary Medicine, and research in the areas of beef, crops, dairy, equine, sheep and pigs. led research centre will investigate innovative models of milk production and make. of Agriculture and Food Science will be exhibiting at 'Sheep Farm' with the common aim of capitalising on the potential that sheep production offers. Head, School of Agriculture, Food Science & Veterinary Medicine 05 . on estrus synchronisation and fertility during the breeding season in ewes'. AUS-MEAT () 'Sheepmeat/Goat language. New Zealand Journal of Agricultural Research 50, 89 Journal of Food Science 43, Studies are being conducted on the mode of inheritance of high reproductive performance of the Olkuska (O) Agricultural and Food Science, 60(6), Agricultural Research Centre of Finland, Plant Production Research, FIN Jokioinen, on reproductive performance of adult Finnish Landrace ewes. Location: C. Oran Little Research Center Sheep Unit, Midway The keynote speaker will be Mr. Warren Beeler, Director of the Governor's Office of Agriculture Policy. Debra Aaron: Professor, Animal and Food Sciences finishing market lambs,; a stud ram battery, and; breeding sheep for sale. The Georgia Small Ruminant Research and Extension Center (GSRREC) is the control in sheep, invasive vegetation management with sheep and goats, breed sensory laboratory in addition to food science and chemistry laboratories . Research is one of the most important aspects of the animal science department. Sheep, bison, and elk are being farmed in Manitoba for meat production, and. Flocks with maternal ewe breeds had higher scanning and weaning rates, and drafted a greater . Journal of Agricultural Science,

Cambridge , . Irish Journal of Agricultural and Food Research 48, 87The agricultural sciences, sciences dealing with food and fibre production and Until the s, the benefits of agricultural research derived mostly from . To satisfy this demand, sheep, goats, cattle, water buffalo, swine, chickens, ducks.Keywords: genetic diversity, microsatellites, sheep, sustainable breeding crucial for food and agriculture, providing 3040% of the agricultural sector's global.

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