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Goat Meat Production in Asia

Proceedings of a workshop
held in Tando Jam, Pakistan,
13-18 March 1988

Proceedings



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Abstract/Résumé/Resumen

Abstract: This publication presents the results of a workshop held in Tando Jam, Pakistan, 13–18 March 1988, that focused specifically on all aspects of goat meat production in Asia. The workshop addressed the factors affecting meat production (breeding, nutrition, reproduction, sex, management, animal health, and diseases), the nutritional value of goat meat, methods of slaughter, processing techniques, consumer preferences, and the national and international marketing of goats. The detailed discussions on these aspects were further highlighted by country case studies, prevailing situations, issues and policies, and potential for improving the prevailing patterns of production. An important session covered broader issues concerned with research and development, strategies for increasing production, and export potential, especially in Near East markets. These discussions enabled a definition of research and development priorities and the scope for increasing goat meat production.

Résumé: Cette publication fait le compte rendu d'un atelier tenu à Tando Jam, au Pakistan, du 13 au 18 mars 1988 et qui a porté sur tous les aspects de la production de la viande de chèvre en Asie. Il y a été question notamment des facteurs influant sur la production de la viande (sélection des espèces, nutrition, reproduction, sexe, gestion, santé animale et maladies), de la valeur nutritive de la viande de chèvre, des méthodes d'abattage, des techniques de transformation, des préférences des consommateurs et du marketing national et international des chèvres. En plus de discuter de ces questions en profondeur, les participants ont aussi abordé les points suivants : études de cas de certains pays, situations actuelles, enjeux et politiques, et possibilités d'améliorer les tendances actuelles de la production. Lors d'une séance importante, les participants se sont penchés sur des questions plus vastes concernant la recherche et le développement, les stratégies qui permettraient d'augmenter la production et les possibilités d'exportation, particulièrement vers les marchés du Proche-Orient. Ces discussions ont permis de définir des priorités en matière de recherche et de développement et de déterminer le potentiel de croissance de la production de la viande de chèvre.

Resumen: Esta publicación contiene los resultados de un taller celebrado en Tando Jam, Paquistán, del 13 al 18 de marzo de 1988, dedicado específicamente a todos los aspectos de la producción de carne de cabra en Asia. El taller estudió los factores que afectan la producción de carne de cabra (cruce, nutrición, reproducción, sexo, manejo, salud y enfermedades), el valor nutricional de la carne caprina, los métodos de sacrificio, las técnicas de procesamiento, las preferencias del consumidor y el mercado caprino nacional e internacional. Las discusiones detalladas sobre estos aspectos se vieron además enriquecidas con el potencial para mejorar los patrones prevalentes de producción. Una de las sesiones importantes cubrió los aspectos más amplios de investigación y desarrollo, estrategias para el aumento de la producción, potencial de exportación, especialmente en los mercados del cercano oriente. Las discusiones permitieron determinar las prioridades de investigación y desarrollo así como las posibilidades para aumentar la producción de carne caprina.

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Goat meat production in China

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Abstract: China has one of the largest goat populations in the world. There are 11 meat breeds totaling 11×10^6 head. Goats are found throughout China, irrespective of climate, altitude, vegetation, or region. China annually produces approximately 476×10^6 kg goat meat. Although this production comes from all regions of the country, the largest amount comes from southern China. To accelerate goat meat development, the following measures are suggested: regional plans and commercial production bases should be established, flock structure should be regulated, intensive fattening operations should be initiated, breeding farms and mating services should be established, fodder resources should be rationally utilized and developed, the scientific knowledge on improved management methods must be disseminated, and marketing outlets should be developed.

Résumé: La Chine possède l'un des cheptels caprins les plus importants au monde. On y compte 11 races de boucherie totalisant 11×10^6 têtes. Il y a des chèvres partout en Chine, quel que soit le climat, l'altitude, la végétation ou la région. Chaque année, la Chine produit environ 476×10^6 kg de viande caprine. Cette production provient de toutes les régions, mais surtout du Sud du pays. Afin d'accélérer la production de viande caprine, on suggère les mesures suivantes : établissement de plans régionaux et de l'infrastructure commerciale de base nécessaire à sa production, régulation de la structure des troupeaux, engraissement intensif, création de fermes d'élevage et de services d'accouplement, utilisation et exploitation rationnelles des ressources fourragères, diffusion des connaissances scientifiques relatives à l'amélioration des soins et création de points de commercialisation.

Resumen: China tiene una de las existencias más altas de cabras en el mundo. Hay once razas de carne que alcanzan un total de 11×10^6 cabezas. Independientemente de las condiciones climáticas, altitud, vegetación, o región, se encuentran cabras a todo lo largo de China. Este país produce actualmente cerca de 476×10^6 kg de carne de cáprinos. Aun cuando esta producción proviene de todas las regiones del país, la mayor cantidad viene del sur de China. Para acelerar el desarrollo de la carne de cabra se sugieren las siguientes medidas: deben establecerse planes regionales y bases de producción comerciales, debe regularse, la estructura del rebaño, deben iniciarse operaciones intensivas de engorde deben establecerse granjas de crianza y servicios de apareamiento, deben desarrollarse y utilizarse racionalmente las fuentes de forrajes, debe diseminarse el conocimiento científico sobre los métodos de administración mejorados y se deben desarrollar agencias para la comercialización.

There were 16×10^6 goats in China in 1949. Since then, the population has grown rapidly to 45×10^6 in 1958, 68×10^6 in 1977, and 78.5×10^6 in 1984. China now has the largest goat population in the world (Huang 1985).

Goats are found throughout China, irrespective of climate, altitude, vegetation, or region. In 1984 goats were distributed as follows: farm region, 63%; pastoral region, 22%; mixed farm region and pasture, 15%. In geographical terms, 41% of the population is in the south and 59% is in the north.

A variety of goat products, including down, fibre, meat, skins, and casings, are produced in China. In addition, goat dung is an important fertilizer. The annual outputs of goat down, fibre, and goat milk are about 3.8×10^6 , 14.1×10^6 and

257.8×10^6 kg, respectively. The down production is the largest in the world, annually accounting for 33–50% of the international market (Huang 1985).

With the progress in and popularization of science and technology, great attention has paid to developing herbage-fed livestock in the last 10 years. The goal of goat raising has gradually changed from self-sufficiency to commercial production. For example, dairy goats are now found in many towns and suburbs, supplying cities with abundant fresh milk. There has also been a rapid increase in goat meat production.

Goat meat production

China annually produces roughly 476×10^6 kg goat meat (Huang 1985), which does not meet the demand. Although the meat is produced throughout China, the largest amount is produced in southern China. In 1984, 7.58×10^6 kg goat meat was produced in Yunnan. It was about 1.6% of the province's total meat production. Most parts of southern China are subtropical or tropical with a warm, humid climate: the plant-growth period is long, forage and fodder are abundant, and goats grow well and have a high reproductive rate. Some well-known breeds of meat goats are produced in southern China: e.g., the Matou goat in Hunan and the Leizhou breed in Guangdong.

Marketing of goat meat

Goats are sold in three ways. First, goats are sold for local consumption (> 60% of total goat meat is for home consumption) or to other farmers in the region. Second, the meat may be sold by the farmers to nearby large and medium-sized cities through trade departments. Third, in a few districts, the goat meat is produced specifically for foreign trade. The price of goat meat is similar to that of beef but is lower than that of pork.

In China, there are two methods of preserving goat meat. In the northern pastoral regions, most of the meat is sold outside the region. To avoid losses or death during transportation of the animals, they are slaughtered and processed on the spot and frozen by the natural low temperatures in early winter. In the other regions of China, quick mechanical freezing and special cold storage are employed. This method is mainly practiced near the cities or in large meat-processing factories.

Meat goat breeds

There are 25 goat breeds in China (Jiang 1982); 11 are meat breeds (Table 1) totaling 11×10^6 head.

Huai

The Huai goat is mainly found in the plain farm region of southeast Henan (Table 1) which enjoys a warm-temperature monsoon climate suitable for crop growth. Pen feeding is prevalent. The Huai goat is a medium-size goat (Table 1). The young goat grows rapidly and, by 9 months, has reached 90% of adult weight.

Table 1. Selected characteristics of the 11 goat meat breeds of China.

Breed	Region	Live weight at maturity (kg)		Kidding %	Net meat rate (%) ^a	Average dressing %
		Buck	Doe			
Banjiao	East Sichuan	40	30	184	42	55.7
Chengdu Ma	West Sichuan	43	33	210	38	54.0
Du An	Northwest Guianxi	40	27	130	-	47.5
Fuqing	East coast, Fujian	30	26	180	-	56.0
Guizhou White	Northeast Guizhou	33	31	274	40	57.9
Haimen	Yangtse Delta	30	20	-	-	46.0
Huai	Southeast Henan	35	26	-	40.5	49.8
Leizhou	Leizhou Peninsula	49	43	203	-	46.0
Longlin	West Yunnan	50	43	122	-	52.5
Matou	Hunan and Hubei	44	34	200	-	60.0
Shanxi White	South Shanxi	33	27	259	40	>50.0

Source: Cheng (1985).

^aPercentage meat on carcass of adult whether.

Goats are slaughtered from 7 to 9 months of age. A 7- to 9-month-old wether has a mean live weight of 21.9 kg, a carcass weight of 10.9 kg, and a net meat weight of 8.9 kg. Every year, 3.5×10^6 goats are slaughtered for meat in Henan province.

White Goat

The White goat is found in the subtropical agricultural area of south Shanxi (Table 1). The goat grazes in the summer and autumn and is pen fed in the winter and spring. The White goat is a medium-sized goat (Table 1). The kid grows and develops rapidly. The meat is tender and delicate.

Matou

The Matou goat is found mainly in the subtropical western mountain regions of Hunan and Hubei (Table 1). There are wide areas of natural grassland for summer and autumn grazing (ABXYR 1975); however, in the winter and spring pen feeding is necessary. Adult Matou goats are large (Table 1). Some individuals may reach 100 kg. A 7-month-old kid has an average weight of 23.31 kg and a dressing percentage of 52.3%; the carcass weighs 10.5 kg and the fat, 1.7 kg.

Chengdu Ma

The Chengdu Ma goat is found in the subtropical western plain and hill regions of Sichuan Province (Table 1). Adult Chengdu Ma goats are large (Table 1) and the meat is of good quality with evenly dispensed fat content.

Banjiao

The Banjiao goat is found in the subtropical eastern mountain region of Sichuan Province. Located 450–1500 m above sea level, the mountain shrublands and grasslands allow year-round grazing. Some supplementary feeding is necessary in the winter and spring. Carcass weight is 20.2 ± 4.6 kg; of this, 1.5 ± 0.1 kg is mesenteric fat and 16.4 ± 4.6 kg is meat.

Guizhou White

The Guizhou White goat lives in the subtropical northeast mountain region of Guizhou, where the altitude is 500–1200 m. This region has a wide area of shrublands and grasslands to support goat grazing. At 1 year of age, males are, on average, 24.1 kg before being slaughtered. The carcass weighs 11.5 kg, of which 1.4 kg is mesenteric fat and 8.8 kg is meat. The dressing percentage of the 1-year carcass is 53.3% and the percentage of meat is 36.6%. The adult wether has a mean average weight of 47.5 kg and its carcass weighs 23.2 kg, including 4.3 kg mesenteric fat and 19.0 kg meat. The meat is of good quality with a weak odour.

Longlin

The Longlin goat lives in the subtropical western mountain area of Yunnan Province at an altitude around 1815 m. This area flourishes with shrubs and grasses and is suitable for grazing. The goat is large (Table 1): 1-year-old males average 37 kg; 1-year-old does, 33 kg. The meat is fine and tender.

Leizhou

The Leizhou goat is found in the tropical, evergreen Leizhou Peninsula and grazes in the hill region (Table 1). Kids grow and develop rapidly. The goat has a high reproduction rate, averaging 2 births/year.

Fuqing

The Fuqing goat lives in the subtropical, eastern coast belt of Fujian Province (Table 1). The mountain land and seaside are appropriate grazing areas. The Fuqing goat is a relatively small breed (Table 1); however, fattened wethers may reach 23 kg at 8 months and 40 kg by 18 months.

Du An

The Du An goat lives in the evergreen northwest mountain area of Guangxi Province (Table 1). Shrubland and grassland are sufficient for grazing.

Haimen

The Haimen goat grows in the subtropical Yangtze delta (Table 1). Because of the well-developed agricultural base in this region, there is a wide variety of material available to feed goats. This breed of goat is small (Table 1) and the delicious meat is fatty and tender with the fat evenly distributed.

Goat meat development

Regional plans and commercial production bases

Goat husbandry in China is rapidly developing, but needs to be better organized. Unfortunately, current productivity is low because of the nonspecialized production of most goat breeds. To improve this situation, regional planning for goat development is essential. Such planning is now under way. For example, it has been decided that the dairy goat will be developed for the suburbs of large and medium cities, the counties along railway lines, and the concentrated regions

of factories and mines. The goats in the northern pastoral areas will be developed largely for meat and down production. The wide southern area will be the main production base for goat meat (Huang 1985). In line with these developments, commercial production bases for meat in some provinces will also be established. Both specialized management and commercial production are essential for improved goat production.

Flock structure and intensive fattening methods

Although large numbers of goats are raised in some places, production is low. This low economic efficiency is a result of inappropriate flock structures (too many old goats and does). In northern China, goats lose a significant amount of fat in the winter and spring because of a lack of forages. For example, a 10-month-old goat in Pingquan County, Henan Province, that weighs 25.5 kg will lose 11.1 kg (44% body weight) over the 7 months of winter and spring. If the management of fattening and slaughtering could be improved, losses could be reduced considerably and meat production could be increased substantially. Supplementation with 70–100 g/day of corn and 1.2–2.5 kg/day of green hay to 19.2-kg grazing goats over a 6-month period would result in goats with a mean live weight of 31.8 kg. In southern China, this type of management is usually extended because a 6-month goat may reach 70–80% of adult weight. If additional forages are used, more rapid growth will occur.

Establishment of breeding farms

To improve meat productivity and fertility of native goat breeds through hybridization, breeding farms must be developed to provide the services of bucks and to provide artificial insemination services to accelerate goat meat production.

Utilization and development of fodder resources

Investigations on suitable forages and fodder resources to match the needs of goats is a matter of continuous effort. To efficiently use the natural pasture and facilitate the regrowth of grasses, rotational grazing is effective. Also, more grass seed should be produced. The practice of cutting and drying grasses for green hay in the summer and autumn or making green fodder for the winter also needs further investigation.

Dissemination of scientific knowledge

Goat production is currently limited by inadequate knowledge and the poor dissemination of extension efforts. There is an urgent need to popularize goat raising on a scientific basis. Aspects such as the reproductive system, grazing management, housing, ventilation and lighting, and health and disease prevention should be covered. These efforts should be coupled to more vigorous research and development.

Comprehensive utilization and marketing of goat

It will be difficult to increase economic efficiency without comprehensive utilization of goats and good marketing outlets. Therefore, further processing of the mutton, milk, skin, casing, and other products and their comprehensive utilization are necessary. Cooperative enterprises involving animal husbandry, industry, and commerce are equally important to broaden marketing opportunities. In

Shimen County, Hunan Province, the Dark-head goat, which has a large body and delicious meat, used to sell poorly. Since 1980, when a processing factory for slaughter was established and agreements with foreign trade departments were made, the sales of the meat and other products have significantly increased with high profitability.

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