

# IDENTIFICATION OF THE PREFERENCE PATTERNS OF DIFFERENT BREEDS OF SHEEP FOR CONSUMPTION IN SAUDI ARABIA

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## Summary

Mutton was the meat of choice among the Saudi Arabian citizens in Riyadh Metropolitan area, 1986-1987, followed by chicken, camel meat, fish and beef. The desirable taste of mutton that represented 68% of the total respondents was the main reason for its preference to other meats. The study also showed that Najdi sheep, which is the predominant local breed, enjoy a priority in its meat consumption among the other indigenous and exogenous breeds of sheep in the central region of the Kingdom. A loyalty to the Najdi sheep was witnessed even when the unit price was assumed to be doubled. Purchasing Najdi sheep for non-family consumption had dropped, although still ranked first among the breeds of sheep readily available in the local markets. The results also showed that, 41% of the sample individuals purchased at least one sheep per family per month, and more consumption of mutton took place during the winter months than during the summer.

(Key Words: Najdi Sheep, Meat of Choice, Mutton Consumption in Arabia)

## Introduction

The government of Saudi Arabia encourages the private sector to invest in agribusiness, and offers financial as well as technical support and incentives to investors in this field. This policy has been implemented for sometimes in conjunction with the Kingdom's policy to promote its own agricultural resources and eventually attain self sufficiency in food. As a result, animal production projects have been developed, particularly modern dairy farms which are almost exclusively based on imported cattle. Other animals namely camels and goats are raised traditionally, whereas sheep are the main indigenous, and indeed the most popular of livestock in the country. At present, mutton forms 37.3% of the total meat locally produced. This however, constitutes only 3.5% of the total annual meat consumption (Ministry of Agric. and Water, 1985), indicating the heavy reliance on meat importation. It is estimated that, around 5 million live sheep are imported annually from foreign sources, mainly Australia and Turkey.

Albeit importation, however, sheep farming is gradually shifting from a traditionally small enterprise on many scattered farms to a major enterprise on relatively few improved farms. With this transition, sheep production will hopefully become more intensive and consequently more efficient. Efforts to increase the productivity of local black Najdi and Naيمي sheep are anticipated to proceed side by side with the introduction of suitable exogenous breeds of sheep. The question arising then is which breed or breeds should be promoted?, bearing in mind consumer preference, social and traditional customs.

Previous studies (Ramadan et al., 1977; Abouheif and Alsobayel, 1982) have shown that the average mortality within indigenous lambs up to the weaning age varied between 30-40%, a much higher figure than that estimated for the British and Australian breeds of sheep (Tribe and Coles, 1966). Whilst the average weights of other improved breeds reached 45 kg at the age of weaning, which is considered best for marketing and slaughtering, is reached by indigenous lambs after 7-8 months (Mubarek et al., 1985). This indicates higher costs of production and increasing risks of mortality. In addition, the increase in demand on Najdi's meat, which is the most popular and predominant indigenous sheep, has accounted for considerable increases in its price which therefore,

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threaten its present status as the breed of choice.

This study was undertaken to identify and assess the factors which affect the pattern of mutton consumption, which might be useful in determining priorities for improvement of local production of sheep, whereas little is known about breed preferences among the Saudi citizens of Riyadh Metropolitan area.

### Materials and Methods

A questionnaire was prepared for self-completion and given personally to each of 731 individuals, from whom 322 qualified questionnaires were received. This questionnaire was based on a purposive random sample of Saudi Arabian citizens in Riyadh Metropolitan area, where settled households represent over 50% of total residents of the Riyadh emirate (Statistical Year Book, 1983). The questionnaire included 21 questions, 10 questions of multi-answers type and 11 questions of yes or no type. In some multi-answers type questions, the respondents were asked to rank their preferences. The questions were centered on the preference of the citizens for different kinds of meat and also for certain breeds of sheep available on the local markets. Information on preferences for indigenous and exogenous breeds of sheep, in addition to factors that might encourage or discourage change in the purchasing preferences and attitude towards some exogenous breeds were gathered. The breeds that included in this questionnaire were local black Najdi and Naeimi sheep, imported Naeimi from Jordan, imported black headed sheep "Somali" from Somalia, imported Karaman sheep "Turki" from Turkey, imported desert sheep "Sawakin" from Sudan and imported Australian Merino sheep and its crosses "Australi".

The frequency distribution, calculated percentages and chi-square test were used to present or to detect differences among various preferences within any question. All analyses were performed with the computer program entitled statistical analysis system (SAS, 1982).

### Results and Discussion

Mutton was the meat of choice ( $P < .01$ ) among the respondents. Sixty percent of the individuals thus reported that mutton represented

more than 50% of their meat they consumed, followed by chicken, 42%; camel meat, 32%; fish, 15% and beef, 11%. This clearly shows that mutton is a meat of preference among these individuals as was reported by Ministry of Agric. and Water (1985). It also seems that, availability and price factors have apparently led to a marked increase in the consumption of chicken as a cheaper meat, even though it still ranks second to mutton.

The taste of mutton is considered as the main reason ( $P < .01$ ) for its preference to other meats by 68% of the total respondents. Other reasons are social and religious occasions (18%) and family traditions (14%). The main purpose behind the purchase of mutton is for family consumption (80%), social occasions (12%), religious sacrifices (5%) and gifts (3%).

The inquiry for breed preferences showed that 73% of the respondents preferred ( $P < .01$ ) Najdi sheep. Next in priority was Naeimi, 35%; followed by Karaman, Sawakin and Somali sheep (figure 1). The absence of the Australian sheep as selected breeds could be interpreted on the basis that the Saudi consumer is not familiar with it, although its price is significantly ( $P < .01$ ) low compared to that of other breeds. No preference difference ( $P < .01$ ) was noted between indigenous Naeimi sheep and imported Naeimi, since the unit price and the general body characteristics are almost similar.

The data indicated that Najdi sheep are given first priority for family consumption and same priority for gifts, social occasions and religious sacrifices (table 1). The Naeimi sheep closely

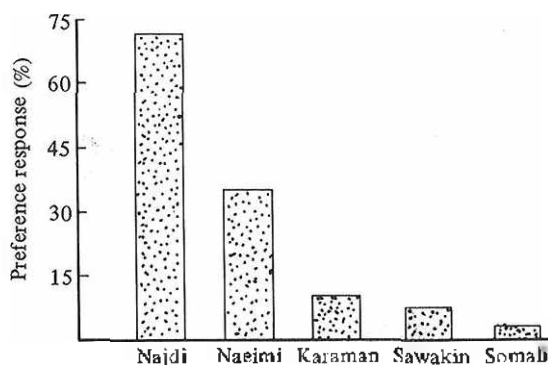


Figure 1. Preference patterns of different breeds of sheep among the Saudi citizens in Riyadh Metropolitan area, 1986-1987.

PREFERENCE PATTERNS OF SHEEP FOR CONSUMPTION IN ARABIA

TABLE 1. PREFERENCE PATTERN OF DIFFERENT BREEDS OF SHEEP AMONG THE SAUDI CITIZENS IN RIYADH METROPOLITAN AREA BY PURPOSE OF PURCHASE, 1986-1987

Breed <sup>a</sup>	Selection response (%)			
	Family consumption	Gifts	Social occasions	Religious sacrifices
Najdi	60	56	22	20
Naeimi	50	55	20	16
Karaman	43	50	2	10
Somali	38	35	11	15
Sawakin	1	15	5	9
Merino	17	1	8	1

<sup>a</sup>Each respondent was asked to select and rank more than one breed according to purpose of purchase.

ranked second to Najdi with indifferent pattern of preferences for the purpose of buying, followed by Karaman, Somali and Sawakin sheep with less degree of selection response for purpose of buying. The Australian Merinos have shown a sizable presence of preference when being purchased for family consumption and social occasions. These results, however, seems contradicted with the general preference attitude to Merino sheep, reflecting the important rule of animal price in changing the real selection responses.

The results showed that 52% of the total respondents had changed ( $P < .01$ ) their favorable breed in the past two years. The reason being increases in animal price which scored 63% among the total respondents. The unavailability of the favorable breed of sheep as a reason for changing the breed to other breed scored only 16% among the respondents. Hence, animal price reflected the most important factor determining the breed of choice. Inquiry about the breed which consumers were accustomed during the past two years, 1984-1985, indicated again that, the Najdi sheep were the breed of choice ( $P < .01$ ) accounting for 61% of the positive responses among consumers who have changed their consumption pattern, followed by Naeimi sheep with an average of 36%. Meanwhile, in a trial to identify selection priority among the available breeds in the event of having an equal animal price, the sample survey data showed that the Najdi sheep scored 92% of the total responses ( $P < .01$ ), followed by Naeimi and Sawakin sheep

with 30% and 20% scores, respectively, among those who had previous priority for each of them. Hence, consumer loyalty to the Najdi sheep ranked highest in comparison to other breeds in the former context. In the meantime, when the assumption of doubling the price of the favorable sheep unit was addressed, 32% of the respondents pointed to a continuity of their preference to these previous favorite breed.

The data showed that, 41% of the sample individuals purchased at least one sheep monthly ( $P < .01$ ), and more consumption of mutton took place during the winter months ( $P < .01$ ) than during the summer. Furthermore, these data indicated that in 74% of the cases, the consumer bought live sheep from the markets and slaughtered it by himself. That way guaranteed the selection of a blocky animal with wide back and loin, and the assurance of practicing the Islamic slaughtering rituals. The habit of buying slaughtered sheep at the butchers stores represented 24% of the total sample responses, followed by buying an imported refrigerated whole carcasses from nearby countries or imported frozen carcasses and cuts with 1% for each.

In general, the study showed that the Najdi sheep is still the most preferred among all breeds of sheep in Saudi Arabia for its desired taste. It is particularly preferred for family consumption purposes, and it seems that the consumer's acquaintance with this breed makes him more loyal to it even when the price per animal is twice as high as with other breeds. It seems that, economics play an important rule in determining breed purchase preference. But the relationship is not a directly price related one, since Najdi sheep tends to be highly priced in comparison with other breeds. The study recommends furthering the efforts to improve Najdi sheep productivity, maintain its favorable merits and meet the requirements of the consumptive pattern of Saudi citizens.

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