

# Katahdin Hair Sheep at El Zamorano.

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## INTRODUCTION

In 1982 the Escuela Agrícola Panamericana received 23 ewes and three rams of the Katahdin breed. This breed was developed by M. Piel in the state of Maine from a cross between Virgin Island hair sheep, and Suffolk and Wiltshire Horn wool sheep. It has been selected for rapid growth rate, good conformation and fertility, and absence of wool and horns (Mason, 1980).

The animals have adapted well to conditions at El Zamorano: 14° North, 800 m above sea level, 1200 mm of rain in six months (May through October), average minimum and maximum temperatures of 15°C and 32°C in January and April respectively. In the rainy season the sheep are grazed from 0630 until 1600 hours and penned at night due to the risk of predators (stray dogs, coyotes) and stealing. During the dry season they are pen-fed hay (*Cynodon nlemfuensis*), maize silage, molasses, and poultry manure. In order to increase the herd size rapidly, the ewes have been bred the year around.

## RESULTS

### FERTILITY

The average number of lambs born in 152 lambings at El Zamorano was 1.34. This average is rather low considering that prolificacy was one of the criteria for selection in the establishment of the breed. At least partially, this can be attributed to the high proportion of young ewes in the herd. Mature

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ewes show a higher rate of multiple births as can be seen in Table 1. In this table the lambings of those ewes which had lambed in the U.S.A. prior to their shipment are included. The overall sex ratio of the 207 lambs born was 45o/o males to 55o/o females. The sex ratio among the singles was 46.8o/o males, and among the multiple births it was 43.2o/o males.

Table 1. Lambs per lambing according to parturition.

Parturition	Number of lambings with			Average lambs per lambings
	Singles	Twins	Triplets	
First	56	16	—	1.22
Second	21	19	—	1.48
Third and more	21	18	1	1.50

## PARTURITION INTERVAL AND SEXUAL BEHAVIOR

The animals have not shown seasonality in their sexual behavior and lambings have occurred in all months. The parturition interval in those ewes lambing twice or more ( $n = 57$ ) is  $263 \pm 54$  days. This gives an average of 1.39 lambings per year.

## BIRTH WEIGHT AND GROWTH RATE

The average birth weight by sex and type of birth is given in Table 2. As expected, males are heavier than female lambs, and single-born are heavier than those born as twins or triplets. The average daily weight gain during the first 100 days was  $151 \pm 36$  grams; the results by sex and type of birth are given in Table 3.

Table 2. Birth weight by sex and type of birth (in kg).

	Singles			Multiples		
	n	$\bar{x}$	s	n	$\bar{x}$	s
Males (a)	30	3.7	0.5	24	3.3	0.6
Females (b)	42	3.5	0.4	30	3.1	0.4

a) differences between males and females significant to  $P = 0.05$

b) differences between males and females significant to  $P = 0.001$

Table 3. Daily weight gain (in grams) between birth and 100 days.

	Singles			Multiples		
	n	$\bar{x}$	s	n	$\bar{x}$	s
Males	18	168	37	9	130	29
Females	19	147	27	15	147	41

## DISCUSSION

The results obtained thus far indicate that sheep production is viable in the semi-humid environment of El Zamorano, and it is worth considering as an alternative to beef production in those areas in which cattle production is marginal. The productivity of the beef cattle industry in Honduras is low, as is indicated by the average carcass weight of 143 kg and the extraction rate of 160/o per year. Various reasons have been mentioned for this (Secretaría de Recursos Naturales, 1984) and they include the following: a deficient production technology (feeding, breeding, health-care, management) caused by poor natural conditions and/or limited investments, as is the case in the hilly areas of central and southern Honduras with 6 to 7 months of drought; or because the farmers are unaware of or do not have the resources to implement better technologies, as can be assumed for most small farmers which constitute the bulk of the cattle owners (Table 4).

Table 4. Pattern of cattle ownership in Honduras.

Heads/Holding	Percent of holdings	Percent of total cattle
less than 10	44.1	7.1
10-29	32.4	18.6
30-99	18.3	20.9
more than 99	5.2	53.4

In the dry areas cattle reach slaughter weight at the age of 3 to 4 years, since a good part of the weight gained during the rainy season is lost in the following dry season. Preliminary results from El Zamorano show that the use of silage, hay or green fodder grown on irrigated land, may not be economical. Under the same climatic conditions sheep could be bred at the end of the rainy season, or beginning of the dry one, in order to have lambs at the initiation of the following rains. Surplus lambs could then be slaughtered at the end of the same rainy period with a weight of 25 to 30 kg; this would reduce the number of animals which would have to be carried through the dry season to the breeding herd. Since the ewes would be pregnant, supplemental feeding during the dry season would be required, but this is also the case with a breeding herd of beef cattle if the present low fertility rate of less than fifty percent (Salazar, pers. comm.) is to be increased.

Furthermore, sheep show some capacity for browsing, though not as developed as that of goats (Table 5). Thorny legumes, of the genera *Mimosa* and *Acacia*, are common weeds in the pastures of the dry zone of Honduras, and they are not eaten by cattle. Leaves of *Mimosa tenuiflora* in the dry season have a crude protein content of 14 to 150.0 and an estimated digestibility of above 70 percent. As this shrub remains green and even grows to some extent during the dry season, animals browsing on it can obtain some protein which allows for a much better utilization of the dry-grass remanent from the rainy season. Properly managed, this fact should permit a significant reduction in the amount of supplemental feeding needed during the dry season.

Table 5. Comparative behaviour of sheep and goats grazing on a paddock with Jaraguá grass (*Hyparrhenia rufa*) and Carbón shrubs (*Mimosa tenuiflora*) at El Zamorano.

Species	Percentage of time spent <sup>1</sup>		
	Grazing	Browsing	Other
sheep	53.9	23.6	22.5
goats	23.6	56.5	19.9

1) Average of four goats and four sheep observed during five months, every 7th day, for eight hours at ten-minute intervals. Source: Santana. 1984.

#### LITERATURE CITED

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