“Bright eyed and sleeping death”

A farmer had a predominantly Barbados Black Belly and West African Hair Sheep ewe flock of 150 females. At the last lambing the flock had a 15% ewe mortality. This alarmed the farmer who called in his good friend who was an animal productionist.

a. The animal productionist checked the farmer’s records and found the following:

   i. The farmer had switched from a grazing system to a complete zero-grazed system so that he can expand his herd size and have more control over predial larceny.
   ii. In order to cut feed cost he bought molasses and cut back on his use of corn in the ewe ration. He was now feeding 20% of the diet DM as molasses right through out the gestation period and only during the lactation cycle did he increase the use of corn.
   iii. All of the ewes that died were in their last tri-mester of pregnancy.
   iv. The flock level of prolificacy was 2.5 lambs/lambing with a mortality rate of 10% to weaning.

b. When the farmer was asked if he had called in a vet, he indicated that had done so. The following was related to the productionist with regard to the farmer’s observations and the vet’s visit:

   i. Some of the animals that were affected became lame and had overgrown hooves.
   ii. The animals went off feed.
   iii. Most of the animals that died were found in a sleeping position.
   iv. It was observed that animals had very dilated pupils and in some instances they were giving off a sweet smell in their breaths prior to their death.
   v. Upon postmortem the animals were found to have triplet and quadruplets lambs.

The objectives

1. To discuss the difference between grazing and zero grazing management system for hair sheep.
2. The feeding and nutritional management of sheep during the gestation cycle.
3. To understand the diseases in sheep that affect gestation and are nutritionally related and to know how they can be prevented.

“Feeling Hot, Hot, Hot!”

A farmer made arrangements to order a group of seven [7] pregnant Jersey Heifers into Trinidad from the USA in January. The animals arrived at Piarco International Airport Trinidad on February 14th, 1997. Upon arrival the animals were transported to the farm 20km away using a covered horse trailer. They reached the farm at 10.00 am. On arrival at the farm, animals were given a high dosage of Vitamin C intra-muscularly. All animals had access to cool fresh drinking water to which an electrolyte designed for stress was added. On the following day the animal’s hair coats were clipped. Over the next month the animals were kept in quarantine and closely monitored.

The following were also done:

1. All animals were housed in an open sided barn, and allowed 3.3 square meters per head and 1.5 meters through space per head, with *ad libitum* access to fresh cool water. In order to ensure that water was cool ice was added to the water from time to time.

2. During the first week heifers were fed a mixture of a complete feed, which came with the animals. In addition animals were slowly introduced to a 20% CP concentrate blended by the farmer along with *ad libitum* access to grass cut from a zero-grazed area.

3. During the period that animals were housed rectal temperature was taken twice daily over the six weeks period, at 0700 hours (am) and at 1400 hours (pm). The difference between the am and the pm rectal temperatures were found to be highly significant. See also Table 1.

Calving began in May 1997, and a total of six (6) calves were born. The mean (±SD) birth weight of calves born was 22.8 (±I3.2) kg. Animals were subsequently turned out at pasture with ample natural shade where the following were done:

1. The am and pm rectal temperature was monitored. See Figure (1)
2. Calves were given Imizol® (Cooper’s, active ingredients imidocarb dispropronate 12% W/V). Hematological monitoring was done on a weekly basis for cows at pasture (see Table 2 & figure 2).
3. Three animals got sick and were aggressively treated with imidocarb, antibiotic and vitamins / mineral support, one animal was given a blood transfusion. All the animals survived.

TABLE 1: MEAN (±SD) RECTAL TEMPERATURE AND HOUSE ENVIRONMENT FOR IMPORTED PREGNANT JERSEY HEIFERS DURING THE FIRST SIX (6) WEEKS OF ARRIVAL IN TRINIDAD.

			HOUSE ENVIRONMENT					
WEEKS	RECTAL TEMPERATURE ^{0}C		TEMPERATURE		% RH		THI	
	AM	PM	AM	PM	AM	PM	AM	PM
1	38.5 ± 0.2	38.6 ± 0.1	25.8 ±3.8	26.4 ±3.8	70.2 ±16.1	71.3 ±15.6	72.4 ±3.8	73.0 ±3.8
2	38.5 ± 0.2	38.7 ± 0.2	26.6 ±2.1	30.7 ±3.4	72.4 ±9.7	63.1 ±9.9	73.2 ±2.1	75.2 ±1.9
3	38.6 ± 0.2	38.8 ±0.2	26.0 ±1.8	29.6 ±1.6	74.0 ±8.8	57 ±10.7	72.6 ±1.8	76.1 ±1.7
4	38.5 ± 0.1	38.9 ±0.1	27.4 ±1.9	30.9 ±1.5	74.7 ±7.9	58.1 ±7.9	74.0 ± 1.9	77.4 ±1.4
5	38.5 ± 0.1	39.3 ± 0.9	26.4 ± 2.3	30.7 ±2.0	75.6 ±9.5	55.0 ±5.2	72.4 ±1.9	78.1 ±1.8
6	38.5 ±0.1	38.8 ±0.1	27.2 ±2.3	30.7 ±1.3	73.3 ±13.2	55.0 ± 4.4	73.77 ± 2.3	77.79 ± 1.9

TABLE 2: HEMATOLOGICAL MONITORING FOR JERSEY COWS TURNED OUT TO PASTURE (FIRST TWO WEEKS) MEAN ±SD.

BLOOD PARAMETERS	WEEK 1	WEEK 2
[a]RBC COUNT ($10^{12}/l$)	4.58 ± 0.25	5.40 ± 0.18
Hg b (g/*l*)	88.4 ± 4.9	96.4 ± 3.4
[b]WBC COUNT ($10^9/l$)	7.57 ±0.6	8.3 ±0.7
NEUTROPHILS ($10^9/l$)	1.8 ± 0.8	1.3 ± 0.5
EOSINOPHILS ($10^9/l$)	1.0 ± 0.4	1.5 ± 0.8
LYMPHOCYTES ($10^9/l$)	5.1 ± 0.6	5.4 ± 0.6
MONOCYTES ($10^9/l$)	0.3 ± 0.1	0.3 ± 0.2
BASOPHILS ($10^9/l$)	0.11 ± 0.04	0.24 ± 0.16
PLASMA PROTEIN (g/*l*)	73.0 ± 6.0	73.0 ± 5.0

[a] Red blood cells [b] White blood cell

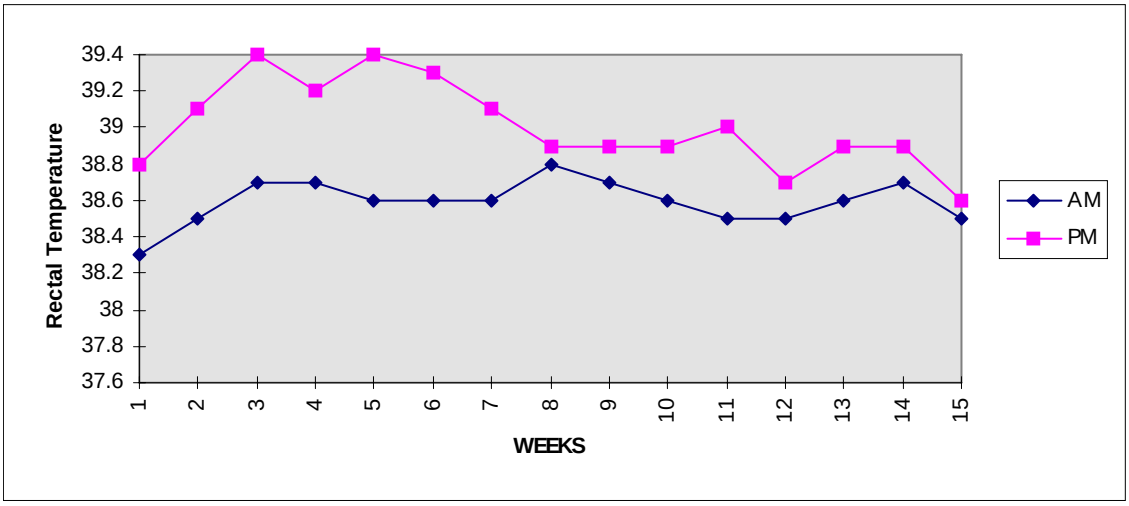
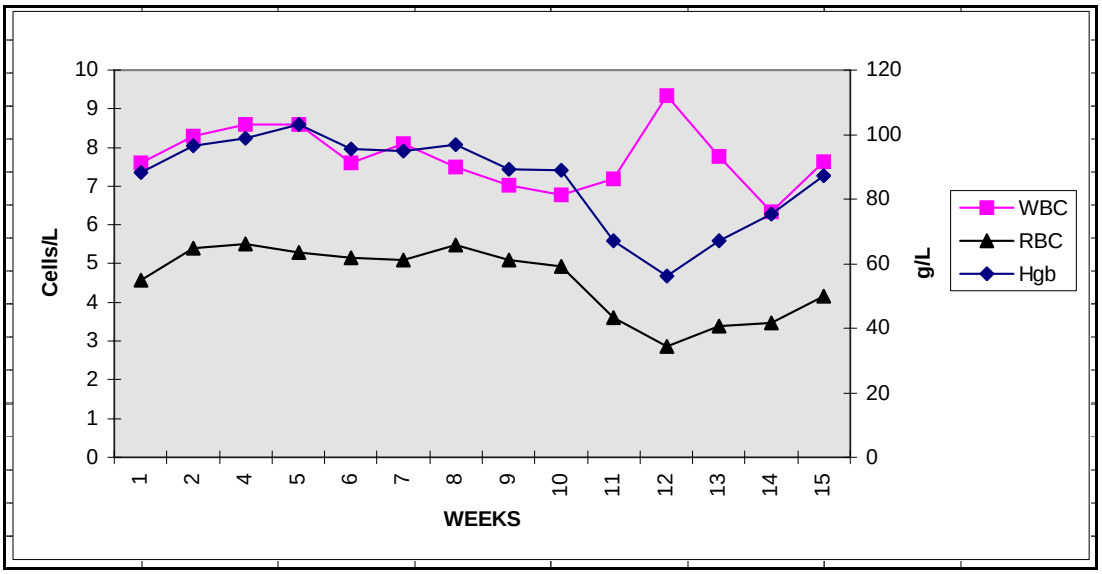


Figure 1: Average Weekly Ante-meridian (a.m.). and post-meridian (p.m.) rectal temperature (ºC) for Jersey cows observed at pasture.



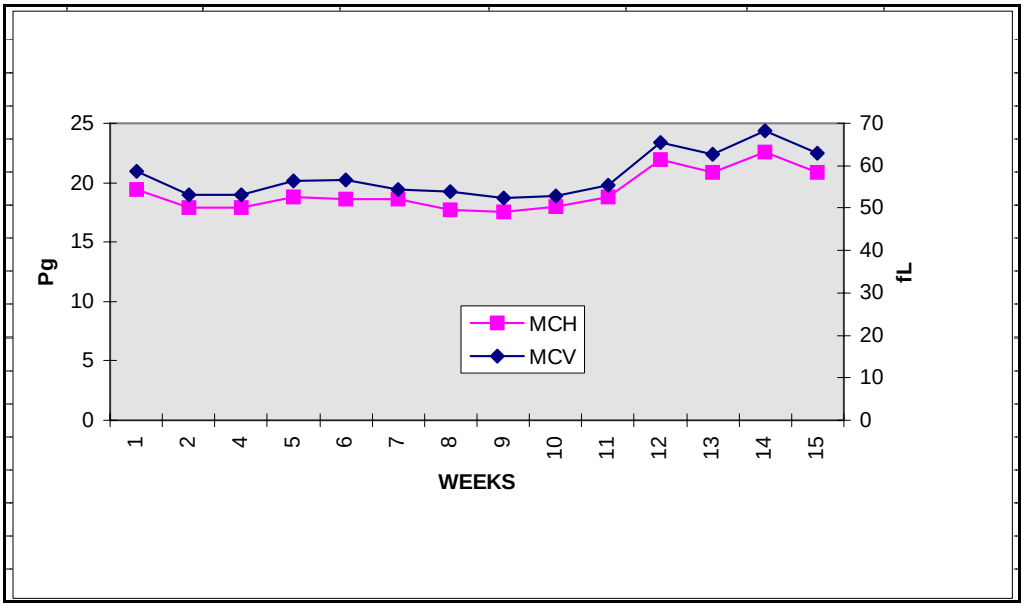


Figure 2: Red blood cells (RBC x 10^{12}), White blood cells (WBC x 10^{9}), circulating hemoglobin (Hgb) mean corpuscular volume (MCV) and mean corpuscular hemoglobin (MCH) monitored over fifteen (15) weeks for Jersey cows at pasture.

Objectives

1. To understand the requirement for importation of animals
2. To understand Thermoregulation and the impact of climatic environment on the ruminant animals at different physiological stages.
3. To understand the role of Housing in the alleviation of heat stress.
4. To understand the process of acclimatization of new genotypes into the tropical environment.
5. To understand the role of vitamin C in heat stress animals

---

“High Kid Mortality”

In the tropics farmers and research projects generally experience high kid mortality over 50% in many instances. The highest level of mortality is generally experienced in the pre-weaning stage, 0 – 12 wks of age. One researcher found that a high percentage of kids that died were < 1.6 kg in weight, others found nutrition and type of birth along with management as some factors which affected mortality. You are setting up a multiplication project for goat production. List, describe and give the rationales for the factors that you will you take into consideration in designing your Kid rearing program to minimize kid mortality?

Objectives:

1. To understand the factors affecting mortality in the pre-wean stage of rearing goat kids.
2. To outline and develop a protocol for a kid rearing system in the tropics.