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143. THE RESPONSE OF CREOLE, FRIESIAN AND FRIESIAN-CROSS COWS TO CONCENTRATE SUPPLEMENTATION ON SMALL VILLAGE FARMS IN MAURITIUS

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An on-farm trial was carried out in two villages to compare the effect of two supplements on milk yield during a 301-day lactation. The cows were individually fed and had *ad libitum* access to sugar cane tops, or a mixture of local grasses. Eighty-eight cows (44 from each village) were randomly divided into two groups of 44 (22 from each village) and given either 0·5 kg of a dairy supplement (146 g crude protein (CP) per kg dry matter (DM) or 0·25 kg of cottonseed cake (371 g CP per kg DM) per kg of milk produced. The respective mean milk yields for each supplement were 3023 (s.e. 146) and 2871 (s.e. 104) kg for one village and 2538 (s.e. 139) and 2649 (s.e. 129) for the other village. There was no significant difference in milk yield between the two supplements. The cows were classified on the basis of their phenotype appearance into (1) the local breed, Creole (23 cows), (2) Creole × Friesian (40 cows) (3) Friesian (25 cows). The respective mean 301-day milk yields for each genotype were 2788 (s.e. 232), 2958 (s.e. 115) and 2899 (s.e. 176) kg for one village and 2889 (s.e. 216), 2536 (s.e. 124) and 2459 (s.e. 156) kg for the second village. These yields compare with normal yields of up to 1500 kg for cows receiving little or no supplement and imply a response to supplementation. However, since there were no significant differences in total milk production between breeds, it is concluded that the local Creole breed has sufficient potential for milk production given the climate and the resources available on village smallholdings in Mauritius. There would therefore appear to be no advantage to be gained from the importation of exotic breeds for milk production.

144. PROTEIN SOURCES FOR MONOGASTRIC AND RUMINANT LIVESTOCK IN THE CAUCA VALLEY OF COLOMBIA

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A study of available protein sources has been conducted in the Cauca Valley (4°N, 76°W) to evaluate biomass yield, protein production and utilization. *Canavalia ensiformis*, a legume yielded 3·5 t beans per ha per year and had a crude protein (CP) concentration of 263 g/kg dry matter (DM) in beans. Feeding trials were carried out in 2-week-old broiler chicks during a 42- to 56-day fattening period. Experimental design consisted of three treatments with three replicates of 100 birds per group. Basic diet consisted of sugar cane juice, protein supplement and *Canavalia* meal at 0, 0·22 and 0·49 of diet DM, weight increases were 40, 36 and 33 g/day respectively ($P < 0·05$). *Glyricidia sepium*, *Erythrina glauca* and *E. poeppigiana*, legume tree foliages, had DM concentrations of 253, 248 and 302 g/kg, and CP of 262, 230 and 212 g/kg DM respectively. *Glyricidia* had yields of up to 22·96 t DM per ha per year, varying with planting system and propagation method. Digestibility in rumen nylon bags (at 48 h) was 0·70, 0·58, 0·52 respectively. Feeding trials with 60 zebu steers based on *Pennisetum purpureum* supplemented with different levels (0, 150, 300 g/kg fresh matter) of *Glyricidia* showed significant increases in weight (80, 300, 420 g). *Glyricidia* fed to six calves (45 kg) on a restricted suckling system as compared to six receiving a concentrated diet, resulted in lower weight gains (0·54 *v.* 0·84 respectively) over 114 days but was more economic.

145. EVALUATION OF A MARKING WEB DEVICE AS AN AID TO DETECTION OF OESTRUS IN CATTLE

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A simple, reliable aid to oestrous detection in cattle would help to improve reproductive efficiency particularly where artificial insemination is used. A marking web device (MWD) designed for this purpose has been evaluated in two groups of Hereford × British Friesian maiden heifers. The heifers were 15 to 18 months old, average live weight 421 kg and condition score 2·4 units. The oestrous cycles of the heifers were synchronized using a PRID (progesterone releasing intravaginal device, CEVA) inserted in the vagina for 7 days and an injection of prostaglandin (Estrumate®, Coopers, UK) given 1 day before PRID withdrawal. Group 1 animals (no. = 134) were housed in straw-bedded pens at 4·5 m^2 per head. Group 2 (no. = 22) animals were set stocked at six heifers per ha pasture. A MWD was affixed to the sacral region of each heifer at PRID removal. Animals were observed four times per day at 06.00, 10.00, 16.00 and 21.00 h for 1 h over 5 days. The proportion of heifers observed in oestrus was 0·91 for group 1 and 1·00 for group 2. Concurrence of visual observation of oestrus with status of the MWD was group 1, 0·59, group 2, 0·86. The incidence of apparent false positive indications by the MWD was group 1, 0·41, group 2, 0·14. There were no false negatives. The difference between group 1 and group 2 in the degree of concurrence between observation and MWD status was significant ($P < 0·05$). The MWD appeared to have been abraded too easily to be an effective aid to oestrous detection where heifers were synchronized in a group and housed. However, it was a good aid to oestrous detection with synchronized heifers kept in extensive conditions and would be beneficial in both situations where individual animals are being observed for oestrus.

146. PREDICTING THE TIME OF OVULATION IN DAIRY COWS USING MILK PROGESTERONE KITS

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The feasibility of using on-farm progesterone kits as a practical method of predicting ovulation, and thus of determining the optimum time for insemination, and the associated effects on herd reproductive performance, were assessed. A total of 94