SILVOPASTORAL SYSTEMS´ PLANIFICATION THROUGH THE USE OF A GEOGRAPHICAL INFORMATION SYDTEM (GIS)

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The Global Information System (GIS) technology was applied to handle graphic and attribute tables relate with the principal natural and potential resources of the cattle region of Jimaguayú in the province of Camagüey, Cuba, in order to evaluate the soil possibilities of the region and to identified the variants and alternatives more convenient for forestal and cattle developing by means of silvopastoral systems. Mathematics and SQL operations were made with different graphic tables and a digital map was conceived that define the areas to be reforested, taking in to account the behavior of a group of excluyent variants. The variants and alternative analyzed allowed to made a document to help the taking decisions in the establishment of new silvopastoral systems in the region and the planning of new studies concerning with possible combinations of trees, shrubs and grass.

THE PARTIAL REGENERATION OF SECONDARY VEGETATION WILL RENEW THE CROPPING CYCLE BETTER THAN THE INCLUSION OF FORAGE LEGUMES ON GRAZED CATTLE PASTURE IN EASTERN AMAZONIA

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Cattle husbandry has increased markedly on smallholdings in northeastern Pará (Brazil) over the past thirty years. Pastures become unproductive after 7-10 years and they cannot be easily returned to cropping. The inclusion of legumes or secondary vegetation (Capoeira) would (i) maintain animal performance, and (ii) restore the soil fertility for a subsequent cropping phase. These hypotheses were tested in a researcher-managed on-farm experiment. A grass-legume pasture (GLP), with three planted multi-purpose legumes, was compared with a pasture, with some regrowth of Capoeira (GCP), and control plots, in the form a conventional *Brachiaria humidicola* pasture (GP) and undisturbed regrowth of Capoeira (UC). The pastures were grazed in a rotational system in two consecutive periods at 1.49 and 1.23 LU/ha. Both alternative pastures were less productive than GP (GLP=384 kg/ha, GCP=474, GP=659) over 21 months of grazing. The GCP kept the full regenerative potential of the Capoeira, showing no significant loss of phytodiversity (GCP 67.4 species/100m; UC 71.6; p=0.180) and no significant difference in species dissimilarity (Squared Euclidian Distance: GCP 10697; UC 10171; p=0.198). On GLP two legumes were almost grazed out but the unpalatable one also failed to increase N-fixation. Also other soil nutrient contents were statistically the same, except for higher P on GLP. At this early stage of the field trials it was concluded that GCP will support a subsequent cropping phase better than GLP. However, on both pasture alternatives stocking rates have to be adjusted, a management activity hardly possible to be performed by busy smallholders.

COMPARISON OF MILK PRODUCE AND COMPOSITION AMONG JERSEY, HOLANDO ARGENTINA BREEDS, AND THEIR FIRST CROSS BREEDING IN A COMMERCIAL HERD OF ARGENTINIAN PAMPAS AREA

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In Argentina milk produce mostly derives from Holando Argentino breed. In search of new alternatives cross breedings are tested. Differences in volume and composition - among Holando Argentino, Jersey and first cross breeding- were analysed. These three groups were kept under the same sanitary, feeding and raising conditions to observe significant differences -on a statistics basis. This study was carried out with animals born within February/May 2001, between second and fifth lactations. During a year milk volume, fat quantity, proteins, lactose, total solids and solids with no fat component were analysed. This information was obtained by the official Milking Control and analysis made every 45 days. Close lactations were considered on a 30.5 days basis for the sake of comparison. In order to compare figures, variation analysis and Fisher test were used, with a 5% significance level. Results for analysed variables (litres of milk, kilograms of milk fat, protein, lactose, total solids and solids with no fat component) showed there were no significant differences among these breeds in terms of milk production and composition. Consequently it would be the same to produce milk with any of them. However, it would be interesting to continue analysing the results of consumption per hectare.

EFFECTS OF TYPE AND AMOUNT OF FODDER ON INTAKE AND DIGESTIBILITY IN CAPTIVE DEER, CERVUS NIPPON

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We studied the effects of type and amount of fodder on intake and digestibility in captive deer, Cervus nippon. Timothy (Tim) and alfalfa (Alf) hays were used as experimental fodder, and they were given to the animals either in limited amounts determined by the body weight of each animal, or *ad libitum*. When Tim was given at 2% and Alf at 3% of body weight, the intake of crude protein (CP) per day was 57g and 173g, respectively. Under these conditions, intake of neutral detergent fiber (NDF) was 363g and 341g, respectively, and that of acid detergent fiber (ADF) was 198g and 280g, respectively. The intake of gross energy (GE) per day was 2.2Mcal for Tim and 3.7Mcal for Alf. *In vivo* digestibility of CP, NDF, and ADF was 60.3%, 60.6%, and 45.6%, respectively, for Tim, and 78.6%, 49.2%, and 54.5%, respectively, for Alf.When the experimental fodder was given *ad libitum*, intake of CP per day was three times higher for Alf (319g) than for Tim (103g). Intake of NDF was almost equal for both types of fodder (630-655g), but intake of ADF was 30% lower for Tim (358g) than for Alf (517g). The intake of GE per day was 4.0Mcal for Tim and 6.7Mcal for Alf. The *in vivo* digestibility of CP, NDF, and ADF was 56.3%, 54.3%, and 41.7%, respectively, for Tim, and 73.3%, 56.6%, and 63.7%, respectively, for Alf.