

BREEDING SCHEME FOR ANGORA GOAT PRODUCTION IN NORTH PATAGONIA

M. Abad, J. Arrigo, A. Gibbons, M. Lanari, G. Morris and H. Taddeo

INTA-EEA Bariloche, CC 277 (8400) - S. C. de Bariloche, Argentina.

INTRODUCTION

The implementation of an improvement program in a system of Angora goat production is described. The mohair production is located on the northern area of Patagonia, in the provinces of Neuquén, Rio Negro and Chubut. The stock is of approximately 700.000 goats distributed in 4500 farms (figure 1). Smallholder farms are placed in desert and isolated areas.

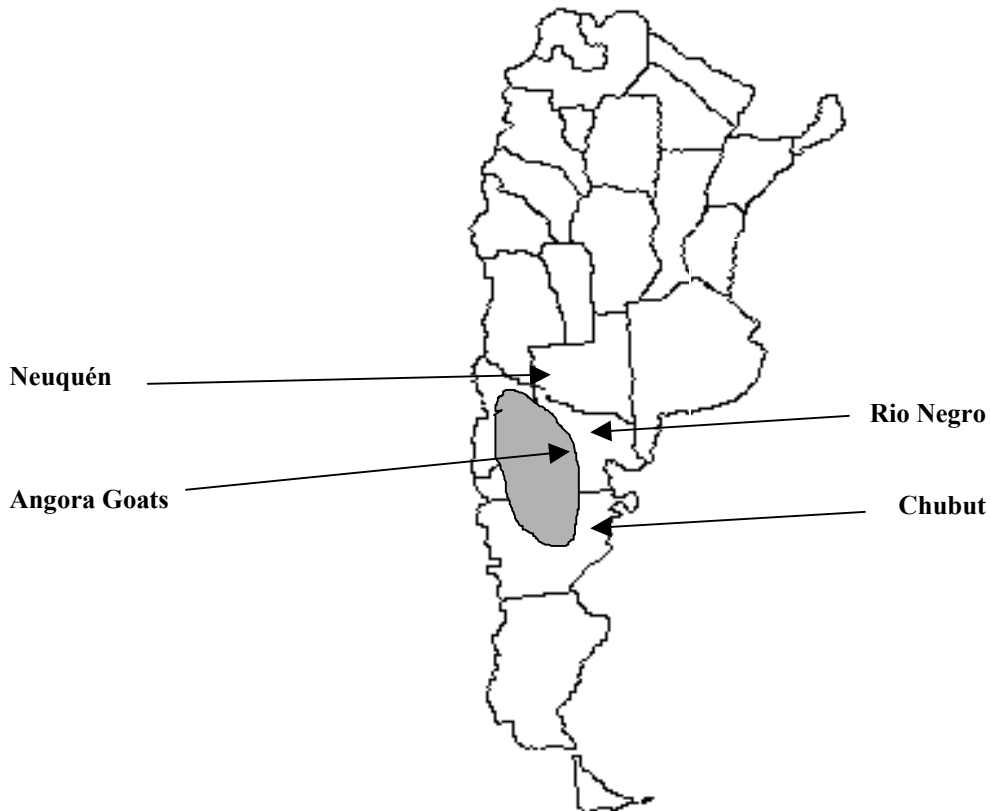


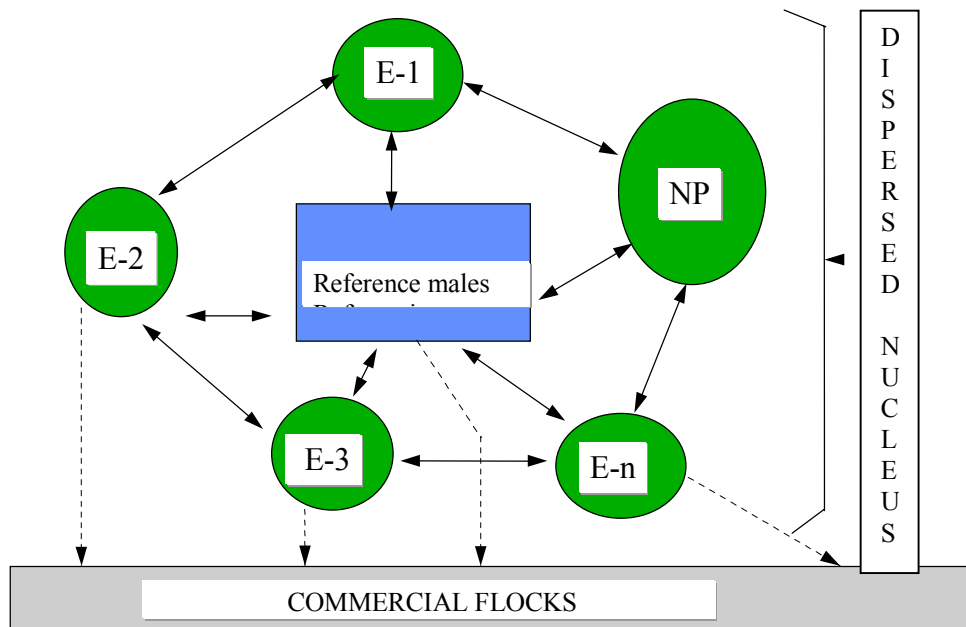
Figure 1. Distribution of Mohair Producers in Argentina

Problems of organisation and communication and poor technology input are usual. Flocks have an average of 150 heads with low individual mohair production (1.2 kg/animal). Poor fleece quality and therefore depreciated commercial value because of high proportion of medullated fiber contamination (10 % of medullated fibers in average), characterize this production.

The genetic improvement of Angora goats in Argentina was not organized according to a classic pyramidal diagram. It had the particularity that there was only one nucleus to produce males, the experimental nucleus of INTA (Pilcaniyeu Farm, Rio Negro). Thus the provision of males was not ensured because of the reduced nucleus size. Further the size of the nucleus is an important parameter that determines the success of a breeding program (Rawlings, 1976 ; Hill, 1976 ; Boujenane and Chami, 1997 ; Adalsteinsson *et al.*, 1994 ; Bulmer, 1971).

GENETIC IMPROVEMENT

Considering this situation proposal was made to increase the base of selection through reference males, connecting commercial flocks with the INTA experimental flock (figure 2). A dispersed open nucleus scheme to evaluate and to produce males was adopted. Further a strategy of dissemination by controlled mating and artificial insemination was utilized (figure 2). The selection goal was to increase the mohair production (fleece weight) and quality, mainly relative to fibre diameter (fineness) and medullated fibers proportion.



NP: Experimental nucleus of Pilcaniyeu; E- : Individuals flocks

Figure 2. Scheme of Dispersed nucleus

This scheme has been running for two years. The females to conform the initial nucleus were selected visually, considering fiber diameter and proportion of medullated fiber as criterions. The males were selected applying mixed model technology, considering animals with phenotypic and genealogical information. For the second year, 13 Australian males were imported.

The dispersed nucleus was formed initially by 9 farmers, with 476 and 522 reproductive females for the first and the second year respectively. Laparoscopic Artificial Insemination (AI) with frozen semen (Ritar *et al.*, 1990 ; Gibbons *et al.*, 1992) was utilized, the efficiency was 50 % and 63 % of pregnancy, for the first and the second year respectively.

The diffusion scheme was carried out with 37 and 71 farmers, with 964 and 1790 goats for both years, where the mating system was AI with fresh semen and controlled mating.

At the first shearing (11 - 12 months of age) fleece weight, fiber diameter, kemp score (evaluated on the shoulder, back and britch), staple length and body weight were recorded. This information was used in a restricted selection index on fiber diameter (Lin, 1990) This restriction was considered because of the positive genetic correlation observed between fiber diameter and fleece weight, which might imply an increase on flocks' fiber diameter average, being a negative consequence of the program.

The breeding values predictions were calculated by an animal model, BLUP-MA (Henderson, 1984), based on the information obtained on the first shear (11 months of average age).

Commercialization. As a consequence of the low technological level of the production, and the difficulties of the sector, the mohair commercial system in Argentina has strong deficiencies. The farmers have no negotiation power because there is no reference market value and the sales are accomplished individually without quality certificates of the mohair (180 kg in average). As an example, the price obtained by farmers the last three years was between 9 % and 26 % of the international price for similar products.

At present, as a consequence of this program, approximately 400 farmers are improving their profitability by cooperative marketing, new shearing systems, classification and conditioning of mohair. Last shear 40.000 kg of mohair have been marketed through this system, and the price obtained by farmers was over 80% or 100% the value of individual sells.

A test was carried out, where the farmers transformed the mohair and marketed the product directly to the industry, with excellent results. At the present season the production will be commercialized under this form.

FINAL REMARKS

At the present state of the program, a positive summary can be given. The program has successfully promoted the association of farmers and the interaction of these with governmental organizations, it has helped to improve the production and marketing of mohair. Also, the creation of market classification system contributes to final profitability for farmers. The advances concerning the conformation of a genetic structure have been slower because of operational difficulties. It is expected that this program will guarantee a genetic structure that will insure the provision of males to the commercial flocks.

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