

"HEREDITARY QUALITY" OF OVINE'S MILK/MEAT. REFERENCE TO "SALOIA" BREED AND OTHERS GENETIC POTENTIALITY MODELS.

"MORPHOLOGY-- FERTILITY - SELECTION/CONSANGUINITY - INTERATIAL CROSSBREEDING"

A "QUALIDADE HEREDITÁRIA" DO OVINO DE LEITE/CARNE. REFERÊNCIA À RAÇA "SALOIA" E AFINS. MODELOS DE POTENCIALIDADE GENÉTICA.

"MORFOLOGIA - FERTILIDADE - SELECÇÃO/CONSANGUINIDADE - CRUZAMENTOS INTER - RACIAIS"

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Foreword: The referred paper establishes an important step to the improvement of dairy ovine.

We point out some important aspects of "hereditary" long ago reported, as well as some characteristics expressing a good genetic sequence firstly used by my father Dr. Joaquim Cannas da Silva - Veterinary-doctor. The work undertaken since 40 years ago (not to betray his memory) also presents some aspects we afterwards used, in order to improve environmental conditions, better suited to the animal's type and its main functions, being impossible within such a short paper to make reference to all factors which individualize it.

History: Dairy ovine from Lisbon boundaries its primitive area were studied and described since 1912 by the referred veterinary-doctor, 6 years after Bateson having introduced the word "genetics" to be applied in the study of hereditary problems, having in mind the "rules" firstly studied by Mendel. Until 1942 and for its improvement, my father attached all his interest and knowledge to a scientific based work (zootechnic) which he designated "Salonia Breded". The herd type consists of 130 individuals. The origin of the referred groups comes from the region existing ones, heterogeneous products, an indiscriminated mixture of "ovis aries Africana x ovis aries Iberica", having experimented an ulterior "ad Hoc" improvement through ovine "good quality merinos" existing in Oeiras near Lisbon. They were "a gift of Fernando VII of Spain to Portuguese Royal House" producing much milk and excellent meat, which made them wanted by that time breeders.

Since then (1942), and for their genotype stability (relative) we went on using any possible methods of reproduction, selection and exploitation. the classic phenotype was kept "introducing" a certain improvement on milk/meat capacity, trying to develop its dispersion with the same breed animals and through crossbreeding.

Being an animal of peculiar characteristics in its principal function, better conformation, good fecundity, fertility and good meat such as lamb, we agreed it was important to proceed with the defence of zootechnic parameters defining it, which was achieved in a certain way.

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STOCK AND RECEPTIVITY TO THAT BREED:

That breed stock consists of 34.000 individuals-pure, absorbed and crossed in their "ground". In the dispersive zone - South of Tejo - through cross breeding pattern, with some reproducers and pure females, of about 15.000 animals. Both through reproducers demand and herds development and after a stagnation phase, their interest is growing and breeder's preference is quite normal, because they are much sober, with a better adaptation - resistance in dex, quantitative reproduction and resistance to diseases.

Couchering what has already been said, their "aptitude" towards other imported dairy breeds has a weak dominance, which explains our interest in the maintenance or even improvement of their chromosomatic estimation.

SOME ETHNIC CHARACTERISTICS AND PHYSIOLOGICAL/MORPHOLOGICAL ELEMENTS:

Harmonical shapes; convex profile thin horns in ♂, ♀ without horns; long and large ears, large forehead in ♂, ♀ with narrower forehead; middle thick necked ♂, thin necked ♀; well muscled haunch; short and strong limbs. Merina wool fleece free of other colour, with regular skeins, thin and curled fibres, greasy, thin and elastic skin; canella coloured sheared surfaces, head and limbs; well developed mammary system, bulky mamma, developed shape, udder with a well long mamilla and existence of additional ones.

Besides anatomic shapes balance in an hereditary genetic nature rather advantageous towards the different environments, we now recognize the morphological uniformity of udders, showing this feature distinct hereditary transmission and their anatomo-cytological nature.

Both the uniform shape and that organ "beaxy" are fundamental to their function demand. The existence of polimastia-tetramastia as a characteristic of that breed, does not determine a much milk production factor, having been verified and proved that this breed individuals owing them had better developed and more productive mammary systems. In fact, that "genetic line" was fixed and dominant to the production, with no damage both for the manual and me canical milking.

Sometimes there were supernumerary sheep producing milk but not "much milk", which proves this aspect's interest as an indicator of better quality and glandula producing capacity, this characteristic being also a genetic indicator of better meat producers. Concerning stock A with polimastia and stock B without polimastia, we could observe a better aptitude and descendant genetic qualitative capacity, having been decided to choose stock A in the follow ed "selection and reproduction processes.

FECUNDITY, FERTILITY, PRECOCITY:

Fecundity is very good with high percentages.

Fertility has now high levels with frequent double deliveries although not regular, it often happens in lines of pure individual, showing clearly in those same lines or stocks descendant. For instance 134/100.

This aspect whose hereditary components are still little studied has the greatest interest. Depending on breed, environment, animal type, robustness weight and age, this stock has obviously promising endogenous and exogenous characteristics which can be beneficial to that function.

When crossbreeding takes place, triplets can arrive, admitting the existence of hereditary factors evident in some already mentioned conditions concentrated in reproduction chromosomal nature.

One to some potential genetic factors, there are indeed some breeds where twins and triplets production is highly achieved, attaining high fertility rate through other breeds.

SELECTION. CONSANGUINE REPRODUCTION:

The used method for the establishment of this animal group pattern was mainly a consanguine reproduction in previously fixed lines, in order to eliminate as much as possible an excessive consanguinity. This was to avoid any possible aspects of adverse variation, or the appearing of any severe and irreversible factors. In the selection process, it was decided to choose the "good" or "benefic" genes dominating the referred breed and getting stronger in the descendant, in detriment of "bads" or adverse ones.

The key of the all "selective" process carefully applied and analysis not only of phenotype but also in genotypic appreciation of descendant and a consistent knowledge of ascendants avoiding as much as possible any deviation from hereditary nature.

We surely appreciate in these animals, a certain genotypic stability expressed by the homogeneity morpho-functional they present.

CROSSBREEDINGS:

Several crossbreedings have already been accomplished within this breed, both from different ethnic origins and others not specialized in milk production.

Through crossbreeding, there are even some "modified" groups, with local "cross merinos" whose introduction was most advantageous for milk production. In this breed zone, when introducing another domestic dairy one, crossbreeding is usual, developing descendant producing capacity and improving rusticity-adaptation rate.

In more "sensible" and "weak" dairy imported breeds concerning "resistance" to edapho-climatic or biotic environment, infecto-contagious and parasitary diseases, breeders prefer this one. In groups with that Saloia breed genetic "remarks" there is a remarkable scheme of rusticity-adaptation-size-vigour-fertility-diseases resistance.

Sometimes, females from imported breeds are afterwards crossed with Saloia breed reproducers, showing a more efficient continuity of their function and remaining evolutive processes. It used to be a practice autochthon crossbreeding with imported reproducers with little results. In our opinion, this far away process restrained or delayed this breed improvement, which actually can be verified in a better level and interest for the valuation or pattern demand we point out in the so referred ways.

EVIDENCE OF GENETIC CAPACITY:

The uniformity of mean milk production and estimated fatness of "better selected group" is 180 liters and 7,8 gr. fatness respectively.

In the improved groups, mean production is about 90 liters with variations according to exploitation type and reproduction/selection used method.

Concerning some highly selected stocks, there were and there is certain individuals whose productions amount to 300.

Ecological conditions defining herds exploitation zone are obviously important and considered factors. Environment - hereditary function as independent variables also characterize the individual one. Highly obtained fecundity and fertility levels after years of selection; evidence of characteristics in pure animals and crossbreeding forms; atendency for as much as possible stability of genotype (expressed by a strong pheno-genotypic homogeneity of morphological and functional pattern group) are important groups to be considered in future actions. Their continuity and success in next actions on the concerned stock and crossbreedings (through conventional warps) must consider the evidenced genetic parameters. Whatever reproduction method used, suitable hereditary tendencies must be properly submitted to qualified selecting processes.

SUMÁRIO

A capacidade qualitativa genética, de vários factores de uma raça ovina leiteira é evidenciada em vários estudos efectuados desde há muitas décadas. As características e constituição em condições de meio adequadas é perfeita e ajustada ao "quorum" produtivo desejado. A selecção no processo de reprodução consanguíneo racional, e a reprodução por cruzamento em raças diferenciadas é evidenciado nas linhas descendentes com elevado grau de melhoria nas funções desejadas: leite/carne. A fertilidade obtida é também notável, na obtenção de partos múltiplos também em forma de cruzamento - mesmo trigémios - o que atesta a sua potencialidade hereditária. A uniformidade morfo-funcional da descendência é um factor que evidencia o valor do genotipo, usado com o melhor cuidado nas formas racionais do processo de reprodução, aliado a uma homogeneidade do grupo estudado.

Apresenta: 1 filme com duração de 15 minutos aprox. e slides, durante a apresentação do trabalho.

SUMMARY

The qualitative genetic capacity of different factors of a dairy ovine stock is shown through some studies undertaken since long ago. Within a suitable environment, characteristics and nature are perfect and adjustable to the desired productive "quorum". Selection in rational consanguine reproduction process and reproduction throug different stocks crossbreeding becomes evident in descendant lines with a high improvement degree on the desired functions: milk/meat. Also under cross breeding aspects, the achieved fertility is also remarkable in obtaining multiple deliveries - even tripling - which proves its hereditary potentiality. Descendant morpho-functional uniformity is a factor that shows genotype value carefully used in reproduction process through the most rational ways, together with an homogeneity of the studied stock.

Introduces: 1 film aprox. 15m and slides during paper's introduction.

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