

The observations recorded were :

1. Live body weight at 4, 10 and 11 weeks of age ;
2. Hot carcass weight at 11 weeks of age ;
3. Shrinkage of carcass during 24 h storage at + 4°C ;
4. pH of biceps femoris muscle 30 mn and 24 hours after slaughter.

The estimates of heritability and genetic correlation were obtained using sire variance and covariance components.

The following conclusions were drawn :

- The heritability estimates of muscle pH were quite high at both times (table 2).
- Moderately high negative genetic correlations were observed on the one hand between muscle pH at 24 hours and average daily gain (4-10 weeks), and on the other between live weight at 10, 11 weeks and hot carcass weight (table 3).

A STUDY OF MUSCULAR GROWTH IN RABBITS OF THREE GENOTYPES : ROLE OF NUCLEAR MULTIPLICATION AND CELL-SIZE INCREASE

J. OUHAYOUN et R. ROUVIER

avec la collaboration technique de Danièle DELMAS, P. MAUREL et C. JACQUIN

*Laboratoire de Méthodologie génétique,
Centre de Recherches de Toulouse, I. N. R. A.,
31320 Castanet-Tolosan*

The relative effects of nuclear multiplication (hyperplasia) and cell-size increase (hypertrophy) on overall muscular growth of hind legs of rabbits from three lines (pure and cross-bred) were estimated. These lines : *New-Zealand*, *Petit Russe* and *New-Zealand* × *Petit Russe*, differed in their adult weight (4.1-2.5 and 3.3 kg, respectively). Six rabbits per genotype were studied at five stages of growth : 30, 42, 70, 84 and 182 days.

Until 182 days, hyperplasia played a predominant role in influencing muscular growth, except for the *Petit Russe* line between 30 and 42 days. During the whole period of growth studied, the average weights of muscle cells, as estimated by the ratio :

$$\frac{\text{total muscle weight}}{\text{total weight of DNA}}$$

did not differ between genotypes. In fact the three lines differed mainly by their intrinsic ability to synthesise DNA, the latter being higher in individuals of larger adult size.