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# REPRODUCTIVE EFFICIENCY OF ICELAND SHEEP II. PROLIFICACY AND REPRODUCTIVE PERFORMANCE OF ADULT EWES

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*Leicester* cross and native breed crosses widened as the animals became older. A study is under-way at one Ministry of Agriculture, Fisheries and Food, Experimental Husbandry Farm to determine whether improved nutritional levels, from 6 months of age, will maintain the advantage in prolificacy throughout life and arrest the widening of the differences in ewe body weights as the animals get older.

CROISSANCE ET VALEUR BOUCHÈRE DES PRODUITS ISSUS DE CROISEMENT  
ENTRE BÉLIERS DE RACES PROLIQUES ET BREBIS LOCALES ESPAGNOLES

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La vitesse de croissance des agneaux *Finois* × *Aragonais* élevés en Aragon (région N.-E.) et *Romanov* × *Mérinos* élevés en Extremadure (région S.-O.) effectuée dans des fermes privées a été comparée à celle des races pures respectives. De même on a fait des comparaisons dans une ferme expérimentale de croisements *Romanov* × *Mérinos*, *Romanov* × *Manchega*, *Romanov* × *Aragonais* avec des races pures en étudiant la croissance et les qualités bouchères des carcasses.

Dans tous les cas traités, les agneaux issus de croisement de races prolifiques et de races locales espagnoles ont montré une vitesse de croissance plus élevée que celle qui correspond aux races locales pures, ce qui doit être attribué à la très petite taille des brebis de races locales. La croissance de ces animaux croisés a été presque égale à celle des agneaux issus du croisement avec *Ile de France*.

La conformation des agneaux croisés *Romanov* a été la même ou légèrement supérieure à celle des animaux de race locale. L'état d'engraissement a été aussi supérieur avec les agneaux croisés.

REPRODUCTIVE EFFICIENCY OF ICELAND SHEEP

II. PROLIFICACY AND REPRODUCTIVE PERFORMANCE OF ADULT EWES

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A brief description is given on the fertility of the *Iceland* sheep. The aim of the breeding the last 20 years has been to increase the fertility. The average number of lambs weaned pr. ewe for the whole population has increased from 1,07 in 1950-54 to 1,42 in 1975. There are given examples of differences between districts.

From the *Sheep Recording Associations* there is taken an example of change in fertility through 20 years, from 1,04 lambs born in 1950-54 to 1,76 lambs born in 1975. Results from 10 *Sheep Recording Associations* for the years 1974 and 1975 are given, showing the average of 0,9 up to 2,3 per cent of all ewes being barren and 1,1 og 3,9 per cent of all ewes having triplets.

Results of investigations on losses of lambs are referred, showing average losses of lambs from birth (including still-born) to weaning of 5,7 per cent.

Investigations on fertility of white and non-white ewes are showing higher fertility of the non-whites.

There are given some estimates of the heritability of fertility in *Icelandic* sheep, showing  $h^2 = 0,13 - 0,21$ .

REPEATABILITY OF OVULATION RATE AND ITS RELATIONSHIP WITH LITTER SIZE  
IN FOUR SHEEP BREEDS

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Data on the ovulation rate of mature ewes of the following breeds were analysed: *Finnish Landrace* (F), *Galway* (G), *Fingalway* (FG) (*Galway* ewes × *Finn* rams) and *High Fertility* (HF). Average ovulation rates were 3,8, 1,6, 2,3 and 2,6, respectively. The repeatability of ovulation rate was 0,66, 0,15, 0,15 and 0,78 for the F, G, FG and HF ewes. The corresponding values for the repeatability of litter size were 0,07, 0,20, 0,06 and 0,13. The correlation between ovulation rate and average litter size at the three previous lambings was 0,00, 0,08, 0,11 and 0,35 for F, G, FG and HF ewes, respectively. Evidence was obtained for a quadratic relationship between ovulation rate and litter size and the data suggested the existence of an optimum ovulation rate. The heritability of ovulation rate was 0,35 for *Finn* ewes and hence selection should be affective.