A

RESEARCH WORK

ON

EFFECTS OF GENOTYPE, GESTATION LENGTH AND LITTER SIZE ON THE BIRTH WEIGHT, LITTER WEIGHT, THIRD AND FIFTH WEEK BODY WEIGHT OF CROSSBRED KITS

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INTRODUCTION

- Rabbit production

OBJECTIVE OF THIS STUDY

The aim of this study was to find out the effects of genotype, gestation length and litter size on the individual kit birth weight, litter birth weight and the weight gain at 3^{rd} and 5^{th} week post parturition.

MATERIALS AND METHODS

- Experimental Site
- Experimental Materials
- Model:

$$Y_{ijkl} = \mu + B_i + C_j + D_k + \varepsilon_{ijkl}$$

Results and Discussion

Table 1: Effect of genotype on the least squares means of individual and litter birth weights and body weights at 21 and 35 days

Genotype	No	INDBW	LITBW	BW21	BW35
NZWxREX	20	84.75 ± 2.09^{b}	375.95 ± 22.13^{ab}	233.25 ± 4.81^{b}	$357.80+10.07^{ab}$
DUCxCAL	20	74.25 ± 1.78^{d}	391.70 ± 26.29^{ab}	218.10 ± 5.14^{c}	332.60 ± 12.54^{b}
LOCxNZW	20	84.60 ± 4.24^{b}	357.15 ± 26.20^{b}	232.05 ± 8.16^{b}	$349.50+13.90^{ab}$
CALXDUC	20	91.90 ± 9.84^{a}	420.10 ± 28.93^{a}	246.35 ± 12.53^{a}	368.25 ± 17.36^{a}
REXXLOC	20	78.95 ± 3.34^{c}	396.45 ± 13.07^{ab}	$225.80\pm6.56b^{c}$	$345.75+11.33^{ab}$

abcd: means with different superscripts within the same column are significantly different ($p<0.05$). INDBW: individual birth weight, LITBW: litter birth weight, BW21: body weight at 21st day, BW35: body weight at 35th day

Table 2: Effect of gestation length on the least square means of individual and litter birth weights, body weights of kits at 21st and 35th days

Gestlength	No	INDBW	LITBW	BW21	BW35
29	20	66.75 ± 0.51^{d}	379.60± 21.85	207.20 ± 5.00^{c}	319.40 ± 12.43^{b}
30	25	72.16 ±1.09^{c}	396.84 ± 19.57	213.76 ± 3.97^{c}	329.04 ± 10.40^{b}
31	33	89.42 ± 2.39^{b}	381.82 ± 21.45	245.45 ± 4.51^{b}	366.24 ± 7.91^{b}
32	20	88.25 ± 1.91^{b}	392.30 ± 24.61	236.60 ± 4.57^{b}	362.50 ± 8.35^{b}
34	2	217.00 ±3.00^{a}	434.00 ± 0.00	395.50 ± 1.50^{a}	564.00 ± 1.00^{a}

abcd: means with different superscripts within the same column are significantly different ($p<0.05$). Gestlngth: gestation length, INDBW: individual birth weight, LITBW: litter birth weight, BW21: body weight at 21st day, BW35: body weight at 35th day.

Table 3: Litter size effect on the least squares means of individual and litter birth weights, body weights at 21st and 35th day

Litter size	No	INDBW	LITBW	BW21	BW35
2	4	148.75 ± 39.42^{a}	297.50 ± 78.81^{b}	318.00 ± 44.75^{a}	454.50 ± 63.23^{a}
3	3	119.33 ± 2.03^{b}	358.00 ± 0.00^{ab}	275.67 ± 2.85^{b}	420.00 ± 6.51^{ab}
4	12	92.60 ± 1.63^{c}	334.20 ± 25.80^{b}	253.00 ± 3.82^{c}	375.60 ± 11.54^{bc}
5	25	90.76 ± 1.85^{c}	366.00 ± 22.68^{ab}	245.56 ± 5.18^{c}	375.76 ± 8.64^{bc}
6	30	72.77 ± 1.06^{d}	390.80 ± 15.58^{ab}	215.83 ± 3.53^{d}	330.50 ± 8.33^{cd}
7	28	69.93 ± 0.93^{d}	440.96 ± 20.80^{a}	209.57 ± 3.70^{d}	319.11 ± 9.22^{d}

abcd: means with different superscripts within the same column are significantly different ($p<0.05$). INDBW: individual birth weight, LITBW: litter birth weight, BW21: body weight at 21st day, BW35: body weight at 35th day.

Conclusions

- Crossing Californian white with Dutch belt gave rise to kits that possess superior performance in terms of heavy weaning body weight and size compared to other crosses which could form a basis for selection process in rabbit production.

- Litters should be even – up among does to ensure better growth performance of kits.

- More attention should be provided for does with long gestation period.

Thanks

For

Listening