



BREED STATISTICS

PRODUCTIVE PERFORMANCE

The average productive performance of the ram and ewe lambs are summarised in *Table 1*.

Table 1. Average productive performance (\pm s.e.) since 1990 of the ram and ewe lambs in the Carnarvon AFRINO flock

Trait	Ram lambs	Ewe lambs
Birth weight (kg)	4.85 \pm 0.01	4.58 \pm 0.01
42-day body weight (kg)	16.0 \pm 0.2	14.9 \pm 0.2
100-day weaning weight (kg)	32.4 \pm 0.3	29.9 \pm 0.3
5-month body weight (kg)	33.6 \pm 0.4	30.6 \pm 0.4
6-month body weight (kg)	38.3 \pm 0.4	35.0 \pm 0.4
7-month body weight (kg)	41.0 \pm 0.4	37.5 \pm 0.4
8-month body weight (kg)	45.9 \pm 0.4	40.9 \pm 0.4
9-month body weight (kg)	49.6 \pm 0.4	43.8 \pm 0.4
10-month body weight (kg)	53.1 \pm 0.5	46.8 \pm 0.5
11-month body weight (kg)	56.5 \pm 0.5	49.2 \pm 0.5
12-month body weight (kg)	60.8 \pm 0.5	52.7 \pm 0.5
16-month body weight (kg)	64.8 \pm 0.5	52.9 \pm 0.5
16-month L.dorsi area (cm ²)	8.3 \pm 0.1	7.9 \pm 0.1
16-month fat depth (mm)	4.1 \pm 0.1	3.8 \pm 0.1
Greasy fleece weight (kg) ^a	3.35 \pm 0.05	3.10 \pm 0.05
Clean fleece weight (kg)	2.02 \pm 0.04	1.93 \pm 0.04
Fibre diameter (μ m)	19.5 \pm 0.1	19.8 \pm 0.1
Clean yield (%)	60.1 \pm 0.6	61.7 \pm 0.6
Staple length (mm)	82.4 \pm 1.1	85.2 \pm 1.1
Number of crimps/25 mm	18.7 \pm 1.4	17.9 \pm 1.4
Coefficient of variation (%)	16.7 \pm 0.2	16.7 \pm 0.2
Standard deviation (μ m)	3.2 \pm 0.0	3.2 \pm 0.0
Comfort factor (%)	99.5 \pm 0.1	99.3 \pm 0.1
Staple strength (N/Ktex)	33.7 \pm 1.4	34.1 \pm 1.4



The average scores for wool and conformation traits, assessed subjectively at 14 months of age, since 1990 and scores of the 2015-born ram and ewe lambs in the Carnarvon AFRINO flock are presented in *Table 2*.

Table 2. Average scores for subjectively assessed wool and conformation traits (\pm s.e.) at 14 months of age since 1990 and scores of the 2015-born ram and ewe lambs in the Carnarvon AFRINO flock.

Trait	Ram lambs	Ewe lambs
Conformation of the head	32.9 \pm 1.1	33.4 \pm 1.1
Softness of face cover	33.3 \pm 0.9	33.7 \pm 0.9
Pigmentation	25.8 \pm 1.5	26.8 \pm 1.5
Front quarters	33.8 \pm 0.8	33.1 \pm 0.8
Front pasterns	36.1 \pm 0.8	36.9 \pm 0.8
Hind pasterns	36.6 \pm 0.7	37.3 \pm 0.7
Hocks	34.8 \pm 1.0	34.6 \pm 1.0
Top line	34.9 \pm 0.7	36.0 \pm 0.7
Body length (cm)	77.7 \pm 0.8	74.4 \pm 0.8
Wither height (cm)	69.4 \pm 0.8	66.5 \pm 0.8
Heart girth (cm)	102.0 \pm 1.2	98.7 \pm 0.7
Front cannon bone length (cm)	19.4 \pm 0.4	18.6 \pm 0.4
Softness of fleece	32.6 \pm 1.1	32.0 \pm 1.1
Crimp definition	29.7 \pm 1.4	30.7 \pm 1.4
Uniformity of fleece	35.2 \pm 1.0	35.7 \pm 1.0
Density of fleece	34.9 \pm 0.9	35.5 \pm 0.9
Wool colour	32.9 \pm 0.9	33.6 \pm 0.9
Creeping belly	33.8 \pm 1.7	36.2 \pm 1.7
Scrotal circumference (cm)	33.9 \pm 0.5	n/a
Teat length left (mm)	n/a	23.9 \pm 0.9
Teat length right(mm)	n/a	23.3 \pm 0.9



Productive performance of the ewe flock over the past 35 years is presented in *Table 3*, while the reproductive performance of the 2016 lambing season is summarised in *Table 4*.

Table 3. Production and reproduction of AFRINO ewes (\pm s.e.) over the past 35 years in the Carnarvon flock

Trait	Average
Body weight(kg)	65.9 \pm 0.9
Wool production	
Greasy fleece weight (kg)	2.72 \pm 0.09
Clean fleece weight (kg)	1.74 \pm 0.04
Fibre diameter (μ m)	21.0 \pm 0.1
Clean yield (%)	63.7 \pm 0.6
Staple length (mm)	74.9 \pm 1.0
Number of crimps/25 mm	14.3 \pm 0.3
Coefficient of variation (%) (since 2000)	17.9 \pm 0.02
Standard deviation (μ m) (since 2000)	3.51 \pm 0.04
Comfort factor (%) (since 2000)	99.1 \pm 0.1
Staple strength (N/Ktex) (since 2008)	31.5 \pm 0.7
Creeping belly score (since 2004)	34.0 \pm 1.1
Reproduction	
Total weight of lamb weaned/year (kg)	36.42 \pm 0.06
Number of lambs born/year	1.34 \pm 0.10
Number of lambs weaned/year	1.18 \pm 0.05
Number of lambing opportunities	3.33
Total weight of lamb weaned/lifetime (kg)	130.6 \pm 2.5
Number of lambs born/lifetime	4.68 \pm 0.06
Number of lambs weaned/lifetime	4.20 \pm 0.05
Milk production (litre/day) (2005 - 2014)	1.93 \pm 1.73 (1.62 - 2.17 among years)



Table 4. Reproduction of AFRINO ewes for the 2016-lambing season.

Trait	Average
Number of ewes mated	202
Ewes lambed/100 ewes mated	92.1
Ewes aborted/100 ewes mated	0.5
Lambs born/100 ewes lambed	147.8
Lambs born/100 ewes mated	136.1
Stillborn lambs (%)	2.9
Lamb survival rate (%)	97.4
Lambs weaned/100 ewes mated	128.7
Total weight of lamb weaned (kg)	35.6

SELECTION STRATEGY AND GENETIC TRENDS

Selection in the flock is aimed at increasing reproductive performance and body weight, maintaining wool weight and fibre diameter and improving wool quality traits. Genetic trends for body weights, wool traits and reproduction are depicted in *Figures 1 to 4* and summarised in *Table 5*. From the figures it is evident that the selection objectives with regard to reproductive performance, body weight and most of the wool traits have been achieved.

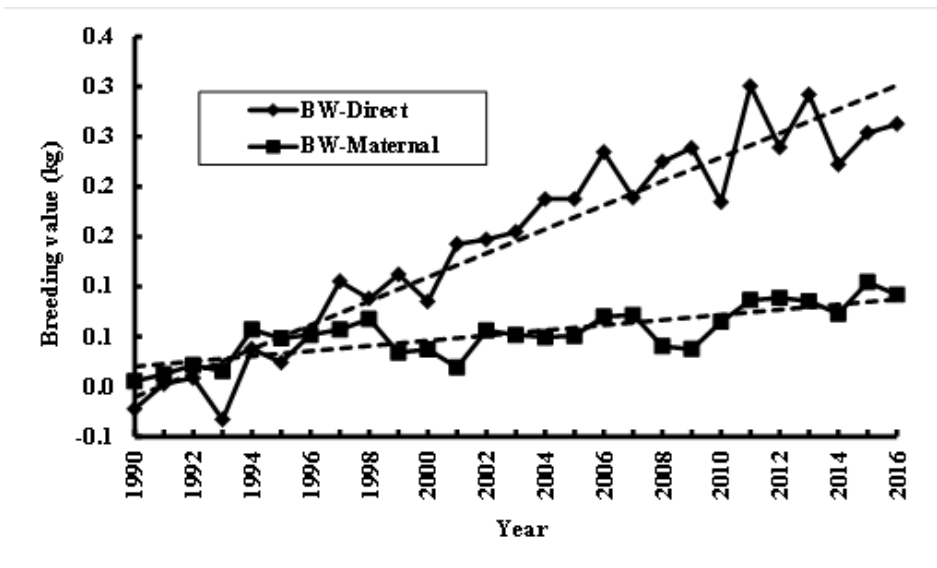


Figure 1 Direct and maternal genetic trends in birth weight (BW)

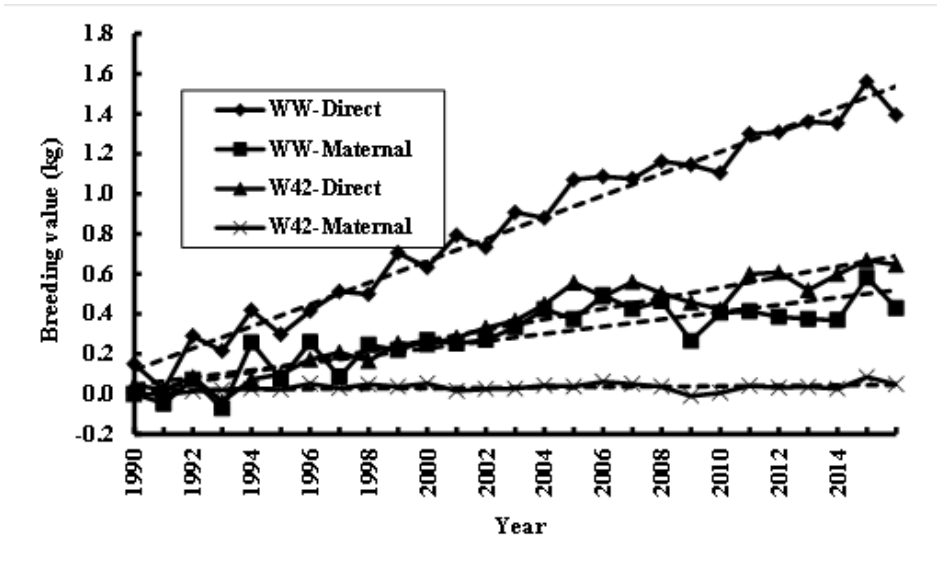


Figure 2. Direct and maternal genetic trends in 42-day (W42) and weaning weights (WW)

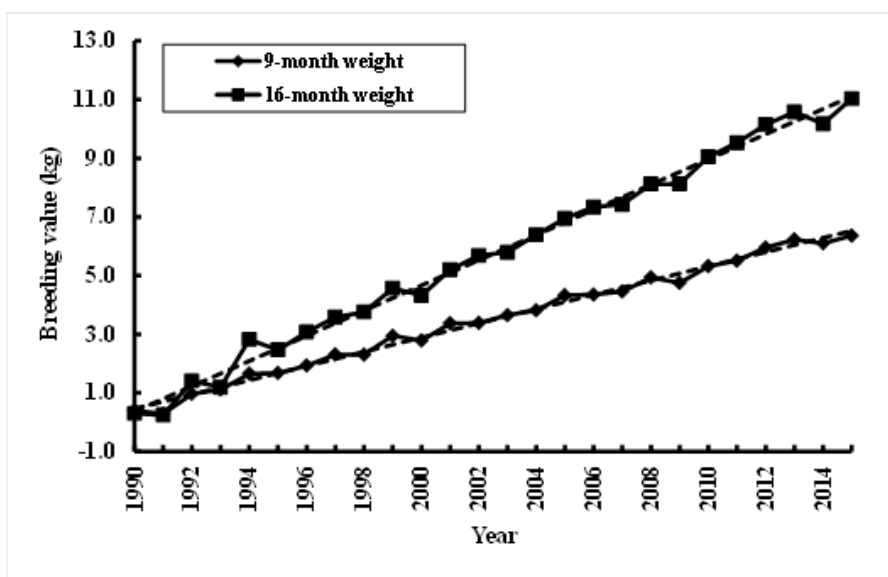


Figure 3 Genetic trends in 9- and 16-month body weights

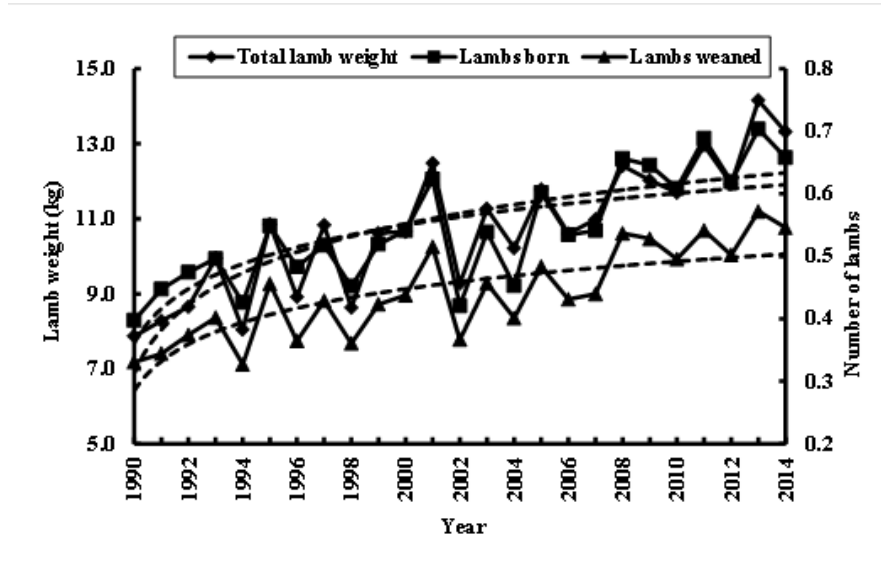


Figure 4 Genetic trends in reproductive performance

Table 5. Genetic trends since 1990 in the Carnarvon AFRINO flock

Trait	Genetic trend	R ²
Birth weight (kg)	$y = 0.0120x - 0.0226$	0.9075
Birth weight maternal (kg)	$y = 0.0026x + 0.0174$	0.6232
42-day body weight (kg)	$y = 0.0263x - 0.0216$	0.9205
42-day body weight maternal (kg)	$y = 0.0010x + 0.0171$	0.1608
120-day weaning weight (kg)	$y = 0.0545x + 0.0658$	0.9697
120-day weaning weight maternal (kg)	$y = 0.0182x - 0.0278$	0.7266
9-month body weight (kg)	$y = 0.2425x + 0.2226$	0.9914
16-month body weight (kg)	$y = 0.4297x - 0.0584$	0.9919
Total weight of lamb weaned (kg)	$y = 1.6560\ln(x) + 6.8935$	0.6438
Number of lambs born	$y = 0.0785\ln(x) + 0.3616$	0.5403
Number of lambs weaned	$y = 0.0679\ln(x) + 0.2851$	0.5938



PRODUCTION NORMS

Age at first lambing: 17 months

Average marketing age is 7 to 9 months at 42 kg live weight under extensive conditions.

Dressing percentage: 46%

Carcass weight: 19.3 kg

PRODUCTS

In AFRINO sheep, 80% of the income is generated through meat production and 20% through wool production.

Normal production environment:

- Semi-arid north western Karoo veld.
- AFRINO flocks are mainly found in the Southern Free State, Eastern Cape and Northern Cape provinces and the Karoo region of the Western Cape Province.

BREED NUMBERS

The breed society currently has 22 breeders. The total number of AFRINO sheep in South Africa is unknown.