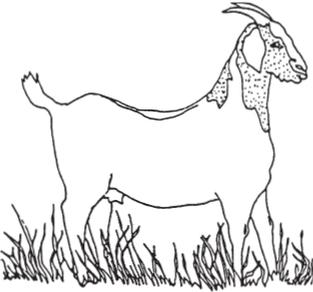




DEPARTMENT: AGRICULTURE
REPUBLIC OF SOUTH AFRICA

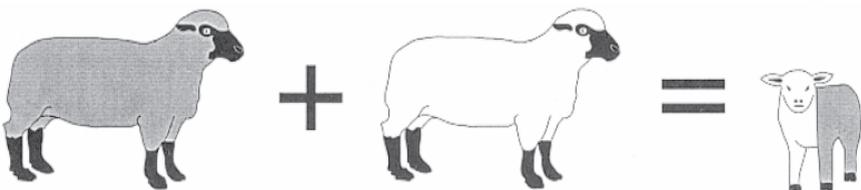


Breeding in sheep and goats

Breeding to improve production means the upgrading or improvement of the breed in respect of specific characteristics

How is improvement achieved?

- Animals with good characteristics are retained as parents for the next generation, while those with poor characteristics are not used for breeding.
- Improvement that results from breeding is not always obvious, but is permanent.
- Improvement is best achieved by using superior rams. The ram contributes half of the production characteristics of each lamb (progeny).



- Because one ram serves about 30–50 ewes per season, his contribution to the total progeny is considerable. The ram's contribution to the total progeny of 50 ewes is 50 % and that of each ewe only 1%.
- By mating poor ewes with good rams every year, the progeny will, after 4 generations, have virtually all the characteristics of the ram. The generation interval for sheep is about 4–5 years.

Ensure progress through breeding

- Use only the best animals for breeding.
- It is, however, not possible to select for several characteristics at the same time. Therefore, choose a specific characteristic and select the animals accordingly. The animals that do not display this characteristic, must be culled and slaughtered or sold.
- About half of the ewe lambs are kept each year for breeding.
- Weaning age is the right time to select the animals for body mass.
- Old ewes (8 years, or after 6 lambing seasons), and those with udder problems or other obvious defects, must be culled.

Select characteristics with economic value

- In mutton sheep and Boer goats, meat production and reproduction are important.
- In milk goats, milk production and reproduction are important.
- In woolled sheep the most important characteristics are wool production, wool quality (fibre thickness) and reproduction.
- It must be possible to measure the characteristic for which selection is being done.

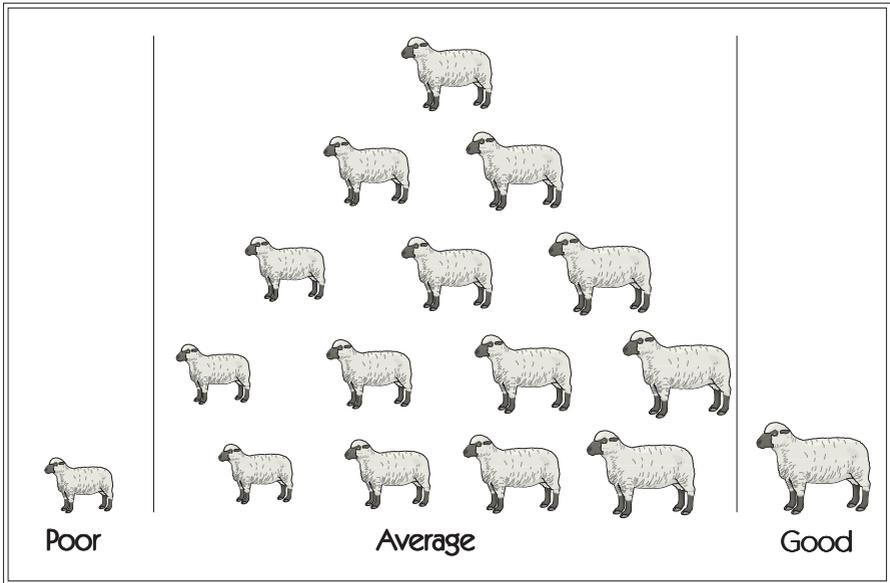
- A producer who wishes to breed good mutton sheep, should therefore preferably have a scale to determine the mass of the animals during selection.

Select characteristics with economic value

- All characteristics for which the farmer selects are not passed on to the progeny equally successfully.
- Certain characteristics such as the production of meat, wool and milk are highly heritable, while fertility has a low heritability.
- Animals that will be used for further breeding should be selected according to the highly heritable characteristics.
- During selection those animals with serious defects such as too few teats, inverted teats, weak mouth, back or legs are culled first.
- Animals with good characteristics are then selected from the remaining ones.

Inbreeding

- Inbreeding occurs when animals that are closely related (family) are used for breeding.
- Inbreeding often results in weak progeny.
- When animals of nonrelated lines are used, it is called hybrid vigour and the progeny usually has better production characteristics. The hybrid vigour, however, only applies to the hybrid generation and will not be transferred to their progeny.
- To limit inbreeding, rams should not be used in the same free-ranging flock for more than 2- breeding seasons. After 2 breeding seasons the ram usually reaches its own progeny.
- One-third of the rams must be replaced by purchased rams every year.



The general principle of selection and breeding is that the progeny of animals usually give an average performance. A few perform exceptionally well or exceptionally poor (see figure). The exceptionally good animals are used for breeding.

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