BRIEF COMMUNICATION

Large scale live breeding sheep exports

J. B. TAVENDALE

Englebrecht, Royds, Tavendale and Co. Ltd
Ashburton

The New Zealand sheep industry has over many years developed features which have combined to give it a comparative advantage over the sheep production systems in other areas of the world. The development of breeds and the subsequent improvement of their productive characteristics is but one of these. Breeds such as the Corriedale, and more recently the Coopworth, Perendale and Drysdale, have attracted world-wide interest.

Traditionally sheep exported have been registered pedigree stock in low numbers, often rams only, with high per/head values. Within the importing countries these animals and their progeny have maintained high values based on the limited numbers available and the immediate impact on the local sheep industries has been limited. There have been some volume exports by air freight of female stock, generally registered and with high capital values.

In recent years large scale shipments of commercial stock, predominantly females, have occurred. These shipments have involved high numbers (10 to 32000 head), at much lower per head monetary values, to establish nucleus flocks for direct comparison with native breeds and for cross-breeding programmes.

Our consultancy practice has had an involvement with the last 4 major shipments of live sheep for breeding from the South Island and has had technical and management responsibility for 2. These shipments have involved the export of almost 100000 breeding sheep, primarily Corriedales and Coopworths. Experience in Eastern Europe has included an inspection and major review of existing sheep management systems and the performance of Australasian sheep after importation. The experience of, and involvement with, the problems which arise prior to export and after importation of large numbers of breeding sheep have highlighted areas of concern for both the exporter and the importer.

The continued purchase of breeding livestock requires satisfactory levels of performance in the importing country. Management of the flock, in particular the seasonal levels of nutrition, are crucial in regard to lifetime performance. Initial production upon arrival is generally established by management prior to export.

Wool

Sheep with wool faults and 'off' types are culled either prior to purchase or when stock are physically inspected. All sheep are shorn within 6 weeks of shipment as an MAF animal health requirement and to reduce heat stress. This generally out-of-season shearing makes the measurement of subsequent wool production on an annual basis difficult. From the information available wool production has been at a satisfactory level when related to the country of origin, and at very good levels when compared with native breeds of sheep in the importing country.

Reproductive Performance

In the 1981/2 season both non pregnant ewe hoggets at 15 months of age and pregnant two-tooth ewes at 21 months of age were exported to Eastern Europe. Management there requires sheep to be housed for the winter, normally 7 months, and lambing occurs prior to sheep being released for extensive grazing on pastures.

Pregnant ewes shipped from New Zealand are lambing in the European autumn, and are required to rear lambs in winter conditions whilst confined in sheds and being fed roughages and concentrates. This initial lambing provides the purchaser with their first measurement of the performance of New Zealand sheep.

Wide variations in performance have been recorded. On average, ewes have lambed about 65% (New Zealand pastoral conditions 90 to 95%). The recorded range on a farm basis has been from 15% (Australian) to 95% but these records could be inaccurate in that they involve only 5 to 7% of the total shipment and could depend on sheep selection.

Factors considered to be important in determining this initial level of production are:

1. Standard of sheep purchased.
2. Levels of nutrition after purchase.
3. Stress factors associated with preparation for shipping, i.e. —
   (a) Purchase and assembly.
   (b) Physical inspection of udders, jaws and feet.
   (c) Vaccination for scabby mouth, anthrax, salmonella and clostridial diseases.

(d) Dosing with selenium and anthelmintic.
(e) Mating.
(f) Shearing, dipping for ectoparasite and fly control.
(g) Changing from pasture to high-fibre pellet diet.
(h) Inspections by purchasers, Breed Society and MAF.

4. Stress factors associated with ship travel —
(a) Trucking to wharf.
(b) Confinement within ships pens and lack of exercise.
(c) Access to feed and water (dominant sheep).
(d) Climatic changes — shipped in a New Zealand winter; 31 ° Australian coast and Indian Ocean; 35 to 37 ° Gulf of Aden and Red Sea.
(e) Dispersal of sheep within purchasing country, including handling, transport, quarantine requirements, dietary changes.

This preparation programme is completed in 90 days with livestock being yarded regularly within this period. The mating date is determined by the voyage days required. Exports to Eastern Europe require 35 days which with 60 days allowance between arrival and lambing means that mating commences 50 days prior to shipment. This mating period coincides with a period of maximum stress associated with anthrax vaccinations, shearing which commences within 1 week of mating, and introduction to high-fibre nuts.

The application of even basic management criteria to sustain high initial reproductive performance, the maintenance of and subsequent gain of livestock, and the avoidance of undue stress is difficult to achieve within this programme. In fact the opposite effect can happen very readily and we have found that constant supervision of field staff, particularly during the more critical phases and during inclement weather is essential.

The specialist nature of these shipment programmes and the difficulty in monitoring results makes it difficult to measure the real effect of these stress periods. Apart from the known effect of shearing in early pregnancy and the effect of nutrition there appears to be no clear evidence of other stress effects which can be measured during the shipment programmes.

Subsequent reproductive performance of these sheep is influenced by nutrition during the first lactation and the time of the next mating. Neither non pregnant nor lactating ewes have shown oestrous cycles in the first autumn after arrival. A high percentage of non pregnant ewes have cycled in the European spring and high pregnancy rates have been achieved by mating at that time. This perpetuates the nutritional difficulties of lambing and lactation in the autumn-winter period. Ewes lactating in the first autumn have only given satisfactory lambing performance when mating is delayed to the following autumn, so that the economic benefit of the initial lambing, with high winter feed costs, could be quite low.

The alternative is to ship non pregnant animals and mate them in the Northern Hemisphere autumn to lamb during their traditional lambing months. Shipment dates could then be programmed to allow sheep to adjust their oestrous period to the European seasons. No certain evidence exists for the time required for sheep to make this adjustment although non lactating ewes shipped previously have still cycled in the European spring some 7 months later and 85% of ewe hoggets shipped in the summer of 1981 at 15 months of age showed oestrous 2 months after arrival.

Management both in New Zealand and Northern Hemisphere countries could be greatly simplified if clearer evidence existed as to the relationship between the onset of oestrus, seasonal periods and the age of stock when transfers between the Southern and Northern Hemisphere occur. Large scale shipments of breeding sheep have created a new economic dimension for such research not apparent when only small numbers of sheep were exported in the past.