BEEF CATTLE - WORKING SESSIONS

DISCUSSION and CONCLUSIONS

BREEDING OBJECTIVES

Beef breeding objectives at the farm level should be chosen so as to maximize gross margins/kg of acceptable carcass. Important characteristics thus are net reproduction and annual carcass weight per hectare, subject to acceptable carcass quality.

Characteristics determining *net reproduction* are:

for males - semen quality and serving capacity.

for females - regular annual calving without calving difficulty following a restricted joining period. Twinning was not seen as an important objective for the short term. Longevity and adaptive characters also are important, but it is difficult to know how to select for them. More information is required on genetic factors affecting dystocia, both maternal and calf components.

There are possible relationships between male and female fertility requiring further investigation.

For improved *weight production*, it is important to define the age at slaughter, particularly for vealer versus fattened cattle. Time of measurement can affect the changes in weight expected at other ages. The objective is on a carcass weight basis but selection is likely to be on live animal weights. While breeders should be aware of possible side effects, particularly relating to birth and mature weight, weight selection was still considered a very important objective.

At the commercial level, genetic differences in *carcass fatness* may be significant, particularly in breeding for the local market. Changes in carcass composition will be different depending on criteria for slaughter, e.g. slaughter at same weight, same age or same finish. There is little prospect of changing relative muscle proportions or muscle/bone ratios. Any selection for carcass characters will probably increase generation interval.

Other characters which require monitoring include skeletal soundness, genetic defects, temperament, eye pigmentation. Opinions differ as to the economic value of selection for these.

MEASUREMENT

Measurement is concerned with the accuracy of records taken in a given system. It can include objective and subjective observations. These must be relevant to the objectives of the breeding program, although the detail and required accuracy will both depend on the stage at which the breeder has reached since beginning recording. Lower accuracy may be acceptable under some circumstances. The breeder must decide on the level of accuracy sufficient for his purposes. As with different types of recording, the returns from higher accuracy must be greater than the costs of achieving it. It is suggested that a new breeder embarks on a very simple system first.

The best measurements are those which are repeatable when taken by different operators and on different dates. Animal handling should be standardized from one weighing date to another, in terms of the time fasted, etc. For subjective scores, of say temperament, standardization of the scoring system is necessary for fair comparisons.

The importance of providing equal opportunity to all cows and calves in a given management group needs to be stressed. It is misleading to compare differently treated animals in a group, including feeding, drenching, tick control treatments, etc. However, unnecessary splitting up of groups should be discouraged.

It is misleading to compare across management groups, except through the use of performance ratios. Comparison of performance records across herds should be discouraged, except through controlled progeny testing with reference sires.

ON-FARM MEASUREMENT AND RECORDING SYSTEMS

Considerable time and thought must be given by a breeder to the design and operation of the measurement and recording system that best suits his needs. Costs involved in any given system may differ widely among breeders.

The method of animal identification is critical, a dual system being essential and including one permanent system of branding or tattooing. Partially or fully automated systems of recording individual animal identification would offer important advantages, if they could be developed to sell commercially at reasonable cost.

The need for and accuracy of identifying birth dates must be considered by each breeder, together with the need for and time and method of cow-calf pairing.

In any system, the use of prewritten identification lists in the yards and in the calving book is to be strongly recommended.

PERFORMANCE RECORDING SCHEMES

Performance recording programs must be flexible and fit in with individual breeders' management and environmental requirements. There is merit in both central and on-farm systems and the two should be linked or much valuable data may be lost.

There is a need to consider the design and layout of calf books and field sheet forms currently in use by the National Beef Recording Scheme (NBRS) to make them more practical.

A performance registry of herds in which performance recording is being done properly would be valuable.

There is an important need to show producers case studies of what order of genetic gains and increased returns have been achieved in herds which have been recording for a long time.

Superior performance and progeny tested bulls must be available to small herds through artificial breeding. It is important that these small herds are involved in NBRS to build up information in data banks. The

owners of these small herds must not be allowed to feel performance recording is of no value to them.

There is a need for fostering liaison and co-operation between Australian and New Zealand national recording schemes.

BREEDING HERDS AND COMMERCIAL HERDS

In general, animals should be selected in the environment in which their progeny are to be run.

Bull buyers should concentrate on breeders' herds with similar objectives to their own.

OTHER RESEARCH NEEDS

Important areas for future research are the collection of more information on genetic and phenotypic correlations, particularly between maternal ability and weaning weight, and between early heifer growth and lifetime reproduction.

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