

DAIRY PRODUCTION IN THE NEW ZEALAND ENVIRONMENT

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Dairying is one of New Zealand's important export industries. About 80% of the milk is exported as processed milk products, earning 21% of export receipts. This has provided a clear focus on the two fundamental requirements for a successful industry, milk solids production and low cost systems.

The emphasis on milk solids production, traditionally expressed as a payment system to farmers based on amount of milkfat supplied, has provided clear breeding and management objectives. The recent introduction of a fat plus protein minus volume payment system has modified these objectives. The full impact of this change has yet to be realised. The protein content of milk from commercial herds at a given milkfat content varies by up to 0.5 percentage units, probably for genetic rather than nutritional reasons.

The low cost systems of farming, possible in NZ because of climate, are dependent primarily on the high number of cows per labour unit and the almost complete reliance on grazed pasture.

Average herd size, currently 157, has increased by about 3 cows/year for the last 25 years. But 80% of these herds consist of less than 200 cows, reflecting the predominance of one labour unit farms. It is unlikely that this rate of increase in herd size can be sustained. Future emphasis will be on further simplification of the systems used, and one increasing per cow yields rather than stocking rate.

The dependence on pasture determines that milk production is seasonal. Reproductive performance is critical to overall productivity but per cow yields are severely constrained by quantity and quality of feed, and lactation length. Great emphasis is given to the management of feed supply but in reality this is of minor importance. An illustration of this is that most if not all the past increase in per cow production is due to improved cow quality. Developments in feed management have, at the most, merely allowed the increase in per cow yields to be sustained as stocking rates have risen. These nutritional constraints mean there is an inexorable move towards a situation where expression of genetic potential is increasingly limited by the environment. The enthusiastic pursuit of technology aimed at increasing rates of genetic gain may be misdirected. Greater profit may accrue from minimising the cost of achieving modest rates of gain.