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The use of once daily milking of dairy cows to achieve economic and social sustainability on New Zealand dairy farms

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Introduction Once daily (OAD) milking has been suggested as a means of reducing farm labour input and stress compared with twice daily (TAD) milking in New Zealand pasture-based systems. Before 2000 adoption was low because of concerns around reduced milk yield and total income. Davis *et al.* (1999) suggested that some of the losses on a per ha basis could be recovered if high stocking rates were used in OAD systems. Clark *et al.* (2006) showed that OAD systems using either Jerseys or Holstein-Friesian cows could partially compensate when stocked at a 17% higher stocking rate than TAD systems, and that Jerseys seemed to adapt better than Holstein-Friesians. Since 2000, the cost and difficulty of accessing labour and the desire by farmers, their employees and their families for a better lifestyle, together with encouraging research results, have all contributed to many farmers using OAD milking either for a full lactation or a part-lactation. This paper summarises recent results related to economic and social costs and savings of OAD milking.

Commercial While research results show milk yield losses up to 50% for individual cows and 9-18% for farm systems (Clark *et al.*, 2006), commercial farms lose only 6% when switching from full lactation TAD to OAD milking (Anderle & Dalley, 2007). The difference is likely due to the fact that commercial farms are operating at lower than optimum feed utilisation than research farms and that more options for optimising OAD performance are available in OAD commercial systems, e.g. cow selection. However, lower milk yield has an inevitable negative effect on gross farm income that needs to be counterbalanced by cost savings elsewhere to avoid large decreases in profit.

Financial In a comparison of OAD and TAD farm systems, Dalley & Hofmann (2007) assumed 20% lower labour farm dairy, electricity and vehicle costs for the former, with \$ NZ8.00 per cow lower animal health costs and \$ NZ30.00 per cow increased sale price for OAD cull cows because of improved body condition score. These assumptions resulted in extra profit of \$ NZ200 per ha for the OAD system after allowing for 7.3% lower milksolids (fat + protein) (MS) yield per ha. These assumptions are supported by a survey of 22 commercial farms showing 24, 68, 38 and 38% reduction in labour, farm dairy, electricity and vehicle costs, respectively, for systems switching from TAD to OAD milking (Anderle & Dalley, 2007). However, while farm dairy costs always decreased, other costs were highly variable and sometimes increased for OAD systems. The recently introduced DairyBase[®] economic farm survey will, in future, allow a more comprehensive analysis of the financial performance of OAD farms in New Zealand.

Social Social gains are harder to quantify, but a recent survey of New Zealand dairy farmers and their employees, and their families (Tipples *et al.*, 2007), showed that absenteeism, sick leave and accidents dropped dramatically when OAD milking was instigated. The working day was reduced, with more time for family activities, hobbies, sport and socialising. In some cases it allowed older farmers to remain in the industry longer. Annual LIC surveys of all NZ dairy farmers show that 46% agree or strongly agree that OAD milking will become more popular in the future (Peter Gatley, *pers. comm.*).

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