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## Experiences with on-off grazing in early lactation on dairy farms in Northland

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### ABSTRACT

Damage to soils and pastures in early Spring is a significant factor reducing pasture growth, feed utilisation, and animal production on N.Z. dairy farms. Farmers have sought and may have found a management solution to this problem. It involves the early removal of dairy cows from pasture, after a period of grazing that is sufficient to meet the dry-matter intake needs of the cows. For example the colostrum herd might graze on pasture only at night, and spend the period between morning and afternoon milkings on the cowshed yard. The main herd will be on pasture during the daytime, but may be taken off pasture at 9.00 after 3 to 4 hours grazing, and stood on the cowshed yard until morning milking. This limits the extent of treading, and reduces damage to soils and pasture, allowing the farm to sustain higher pasture growth rates, maintain a higher average pasture cover, and achieve a longer first rotation. Dairy farmers have found they can stand lactating dairy cows without special facilities, and without the need for supplementary feed provided certain conditions are met. The best place to stand cows from farmers experience is on the cowsheds concrete yard. Cows are used to standing there, and the concrete is cleaned daily of stones, so risk of stone bruising to hooves is minimal. While space on the yard is limited, few cows lie down on the concrete. The close contact means they keep each other warm, and they may be less exposed to the weather than in the paddock. There appears to be no detrimental effect on daily per cow production from this treatment and production data will be presented to illustrate this.

**Keywords:** dairy cows, on-off grazing, early lactation, milksolids production.

### INTRODUCTION.

This paper reports on efforts by dairy farmers to develop low cost ways of overcoming the effects that adverse weather, saturated soils, pasture damage and consequent under-feeding have on dairy cows in early lactation.

Damage to soils and pastures in early Spring is a significant factor reducing pasture growth, feed utilisation, and animal production on N.Z. dairy farms. This is particularly the case in Northland where the predominant soils are of clay texture and have poor drainage characteristics.

**TABLE 1:** Milksolids production for October in Northland Region (NZ Dairy Exporter)

	90/91	91/92	92/93
Soil Conditions in September	Dry	Wet	Wet
Northland Production for October (millions Kgs Milkfat)	6.20	5.82	5.80
Variation versus 90/91		-6.1%	-6.5%

Table 1 shows the variation in milkfat production for the month of October in the Northland region for the three years 1990 - 1992. The first year 1990 was exceptionally dry in September, while 1991 and 1992 were relatively wet in September and October.

Much of this damage occurs from July to October, with most Northland herds commencing calving from 10th July to 1st August and it causes reduced pasture growth in Spring, reduced feed utilisation, and underfeeding of cows at a critical stage of their lactation.

This inability to adequately feed the cows in Spring denies farmers the confidence to increase stocking rate and/or calve earlier as a means to increase Milksolids production.

The effects of this under-feeding also impacts on the cows reproductive performance and it reduces the size of the Spring feed surplus and slows Summer pasture growth.

### ON-OFF GRAZING:STANDING OFF

Farmers experience has long shown that damage to soils and pastures can be reduced by standing off dry cows in wintering-barns, and on pads of various kinds. This combined with astute management of block-grazing limits damage done before the start of calving.

However these methods have not been able to limit the damage done by lactating cows after the start of calving. Dairy farmers have sought and may have found a management solution to this problem, without having to invest in drainage and/or wintering barns with feeding facilities.

It involves the early removal of lactating cows from pasture each day, after a period of grazing that is sufficient to meet the dry-matter intake needs of the cows. Dairy farmers have found lactating cows can be stood off without special facilities, or the need for supplementary feed.

The best place to stand cows from farmers experience is on the cowsheds concrete yard, with the herringbone area blocked off. Cows are accustomed to standing there, and the concrete is cleaned daily of stones, so the risk of stone bruising to hooves is minimal. While space on the yard is limited, few cows lie down on the concrete. The close contact means they keep each other warm, and they may be less exposed to the weather than in the paddock, or in a race.

Contrary to much farmer opinion, there appears to be no detrimental effect on daily per cow production from this treatment, provided certain conditions are met.

#### These conditions are:

1. On-off grazing of lactating cows is done while feed cover is plentiful, to extend the length of the first (and second) milking rotations, to avoid getting into a feed shortage,
2. Pasture being eaten must have good length and density (around 2,500 Kgs Dry-matter per Ha.) to allow high levels of dry-matter intake in a restricted time period.
3. Cows must be in good health, with low incidence of mastitis, and no sore feet.
4. Magnesium supplementation is essential.
5. First calving heifers must be well grown and cows must be in good condition,

#### Negative aspects of the practice can be:

1. The extra time required to go and take the cows off and wash down the yard.
2. Extra loading on the effluent disposal system.

Variations of the technique have been used on occasions in many areas of New Zealand during the cold wet 1992 Spring. The most common one is to take the herd off in the middle of the day to the cowshed yard, 3 to 4 hours earlier than usual.

Grant and Briar Kay, and Harold and Raewyn Robinson farm in the Dargaville area. Both the Kays and Robinsons farms have been intensely monitored as Focal Farms in recent years, and both achieve well above average production levels per cow and per hectare.

Both farmers report that during the last 3 years they have reduced pasture damage significantly in Spring by standing their milking cows on the cowshed yard overnight during periods of adverse weather without experiencing any problems. Table 2 summarises production for these two farms over the three years 1989 - 1992.

**TABLE 2:** Summary of three years milkfat production on two farms using on-off grazing in early lactation.

	Kay	Robinson
Average Herd Size (Maximum cows milked)	185	188
Average Milkfat/Cow (Kgs/cow) 1989/90 - 1991/92	158	145
Average Milkfat/Ha (Kgs/Ha) 1989/90 - 1991/92	500	452

#### The case study farm

Neville and Marion Shepherds' dairy farm at Wellsford is 77.5 Hectares of Aponga clay, a poorly drained soil formed from "limestone". This is the case study farm for this paper, because it is the first farm in the author's experience where lactating cows have been stood off repeatedly over an extended period of time.

Table 3 shows the rainfall that was experienced in the Springs of 1990 - 1992 at the Shepherd farm. 1990 was relatively dry - a dream Spring. Utilisation that year was less of a problem than usual, and damage was less than normal in September and October. 1991 was wetter with rain falling on 49% of days, and an average 3.1 mm rain per day. Production suffered drastically in October and November 1991. It was not until 1992 that this farmer took the required action to reduce damage in what proved to be an even wetter Spring than 1991.

**TABLE 3:** Rainfall data for the period August to November inclusive, measured at Wellsford.

	1990	1991	1992
Average Daily Rainfall (mm/day)	2.85	3.13	4.61
Percentage of days with more than 1 mm rain (%)	23%	49%	59%

In 1992 cows calved at average Condition Score 4.5 - 5.0, and were drenched twice daily with Causmag with the normal daily dose (20 grams Mg/cow/day). From start of calving (1st August) all cows, while in the colostrum mob grazed on pasture only at night, and spent the period between morning and afternoon milkings on the cowshed yard, for the first 4 - 5 days after calving.

From the end of August on-off grazing commenced with the whole milking herd. They were grazed on pasture during the daytime, and at night, but were taken off pasture at 9.00 p.m., after 3 to 4 hours grazing, and stood on the cowshed yard until morning milking. This was done on 5 nights out of each week right through to near the end of September.

At this point the yard was not big enough for the whole herd so the system was changed to use the wintering barn which was then empty of dry cows, instead of the yard. This also worked well. The animals walked through a foot-bath containing Zinc Sulphate twice a day. Only one cow developed lameness during the whole period.

With pre-mating heats ahead Neville stopped taking the cows off in the first week of October. From then Neville proceeded onto an 8 day rotation with the aim of reducing damage by spreading the cows out on large areas of pasture.

Table 4 shows production details for the three Springs 1990 - 1992. Production was reduced in 1992 due to a more spread-out calving pattern, and no early induction, losing an average 6 lactation days per cow. By end of November 1992 that September production loss had been negated by the herd sustaining higher levels of daily milksolids production per cow.

Table 5 shows on herd test the cows in September produced 1.59 Kgs Milksolids per day, while they were subjected to the standing off treatment. Daily estimates of production at the time were consistent with that level.

Total production in October and November 1992 was similar to that in 1990, a dream Spring, but was 2,182 Kgs milksolids more than in 1991 which had not been as wet as

**TABLE 4:** Milksolids Production by N. Shepherd's herd in each of 3 years.

Spring of year	1990	1991	1992
Maximum cows milked	175	168	175
Mean calving date	15/8	18/8	24/8
Total calves reared	110	120	115
Kgs Milksolids supplied to factory			
August	2,159	1,537	1,834
September	5,001	4,845	4,403
October	6,358	5,280	6,585
November	6,332	5,399	6,276
Total Kgs Milksolids to 30th November	19,850	17,061	19,098

**TABLE 5:** Results of Herd Tests for N. Shepherd's herd (the cows were being on-off grazed during the whole of September)

Date herd tested	No. of cows Tested	Daily Yield (Kg/Cow) Milkfat	Daily Yield (kg/Cow) Protein	Somatic Cell Count (Cells/ml)
14/9/92	125	0.86	0.73	238,000
10/11/92	175	0.73	0.58	229,000

1992. This provides a measure of the longer term success of the method.

### CONCLUSIONS

Dairy farmers' experiences of on-off grazing in early lactation indicates that this management practice can reduce damage to soils and pastures and reduce the impact of underfeeding on milksolids production in early Spring.

### REFERENCES

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