

New Zealand Society of Animal Production online archive

This paper is from the New Zealand Society for Animal Production online archive. NZSAP holds a regular annual conference in June or July each year for the presentation of technical and applied topics in animal production. NZSAP plays an important role as a forum fostering research in all areas of animal production including production systems, nutrition, meat science, animal welfare, wool science, animal breeding and genetics.

An invitation is extended to all those involved in the field of animal production to apply for membership of the New Zealand Society of Animal Production at our website www.nzsap.org.nz

[View All Proceedings](#)

[Next Conference](#)

[Join NZSAP](#)

The New Zealand Society of Animal Production in publishing the conference proceedings is engaged in disseminating information, not rendering professional advice or services. The views expressed herein do not necessarily represent the views of the New Zealand Society of Animal Production and the New Zealand Society of Animal Production expressly disclaims any form of liability with respect to anything done or omitted to be done in reliance upon the contents of these proceedings.

This work is licensed under a [Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License](#).



You are free to:

Share— copy and redistribute the material in any medium or format

Under the following terms:

Attribution — You must give [appropriate credit](#), provide a link to the license, and [indicate if changes were made](#). You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use.

NonCommercial — You may not use the material for [commercial purposes](#).

NoDerivatives — If you [remix, transform, or build upon](#) the material, you may not distribute the modified material.

<http://creativecommons.org.nz/licences/licences-explained/>

MILK-FAT PRODUCTION INCREASES DUE TO AN ADVISORY PROGRAMME AIMED AT INCREASING THE FEED SUPPLY ON DAIRY FARMS

M. J. MACE

Ministry of Agriculture and Fisheries, Rotorua

D. C. V. PETERSON

Central Plateau Farm Management Consultants Inc., Rotorua

SUMMARY

On pumice soils, stocking rates are relatively low owing to low pasture dry matter production. Lucerne outyields pasture on most pumice soil types. In the early 1970s a number of factors combined to create an interest in growing lucerne for grazing dairy cattle. Local advisory services saw the potential of lucerne and actively promoted it.

Over a period of seven seasons, Rotorua district total milk fat increased by 30% while national production dropped by 10%. In addition, the area of lucerne on ten intensively advised farms increased by 32%, production per cow by 45%, and production per hectare by 61% (data from six seasons only). Central Plateau region and New Zealand production increases over the period were, respectively, 21 and 22% per cow and 12 and 14% per hectare.

It is suggested that the extra feed available from increased plantings of lucerne has been a major factor in the production increases. Most of the farmers who initially planted lucerne for grazing were encouraged to do so by advisers.

INTRODUCTION

Dairying in the Rotorua district is carried out on soils formed from volcanic eruptions over the past 2000 years. These soils are drought-prone and low in natural fertility. The contour is generally undulating, but there are flat terraces and valley floors as in Reporoa and Galatea.

Although the first dairy factory was built in the area in 1910, the major expansion in dairy farming took place in the 1950s, as a result of large-scale land development by the Lands and Survey Department (MAF, 1977). Typical dairy farms in the district are about 70 to 80 ha, milking 110 to 120 cows. Stocking rates are about 1.5 milking cows per effective hectare (N.Z.D.B., 1977). This relatively low stocking rate has been a direct result of low pasture production.

THE LUCERNE ADVISORY PROGRAMME

Up to the early 1970s, lucerne had merely been grown as a good insurance for reasonable hay yields. This was despite the fact that it had been demonstrated at Wairakei Research Station that lucerne outyielded pasture on all soil types (Baars *et al.*, 1975).

Factors such as the 1969-70 drought, grass grub damage to pasture, and drenching cows to prevent bloat made the growing of lucerne more attractive in the early 1970s (Mace, 1979). This provided a good environment for local extension personnel to fully promote lucerne.

Extension personnel in the district are from the Ministry of Agriculture and Fisheries, Central Plateau Farm Management Consultants and the New Zealand Dairy Board. From 1970, when three advisers were working in the district, numbers built up to average six advisers over the last 7 years, giving an adviser-to-farmer ratio of about 1 : 150.

This has meant that much of the advisory effort has been direct to individual farmers. Most of the original farmers who planted large areas of lucerne for grazing were under the guidance of advisers. The success of these farmers has been the incentive for the remainder of the district to follow.

In addition to individual farm advice, a constant mass-media programme of field days, seminars, newspaper articles, and radio talks has provided an educational background to influence farmer thinking.

All advisory services have promoted lucerne. The advisory programme has comprised technical information on how to grow lucerne, management advice on efficient lucerne utilization, and financial advice to enable farmers to establish large areas of lucerne quickly.

METHOD OF STUDYING RESPONSE TO THE ADVISORY PROGRAMME

This study looks at the milk-fat production over the past seven seasons of ten selected farms and compares it with average Central Plateau and New Zealand dairy production trends. The farms were selected on two main criteria:

- (1) That advisers had been involved on these farms for the past seven dairy seasons and had visited them every 6 to 8 weeks over that period.
- (2) That a minimum of 25% of the farm was in lucerne.

Of the 24 farms originally selected for this study, 14 were subsequently eliminated because purchases of additional land had resulted in changed stocking rates, or changes in farm ownership had resulted in insufficient data being available.

The selected farms are generally from the drier soil types of the district. Because of this, their production per cow and per hectare was below the district average at the start of the period in 1970-1.

RESULTS

The increase in production per cow and per hectare on the sample farms is substantially greater than that which occurred on the average Central Plateau or New Zealand farm (Figs 1 and 2). This can be partly explained by the fact that, during the period under study, lucerne on the sample farms increased from 14 to 53% of total farm area, while over the same period

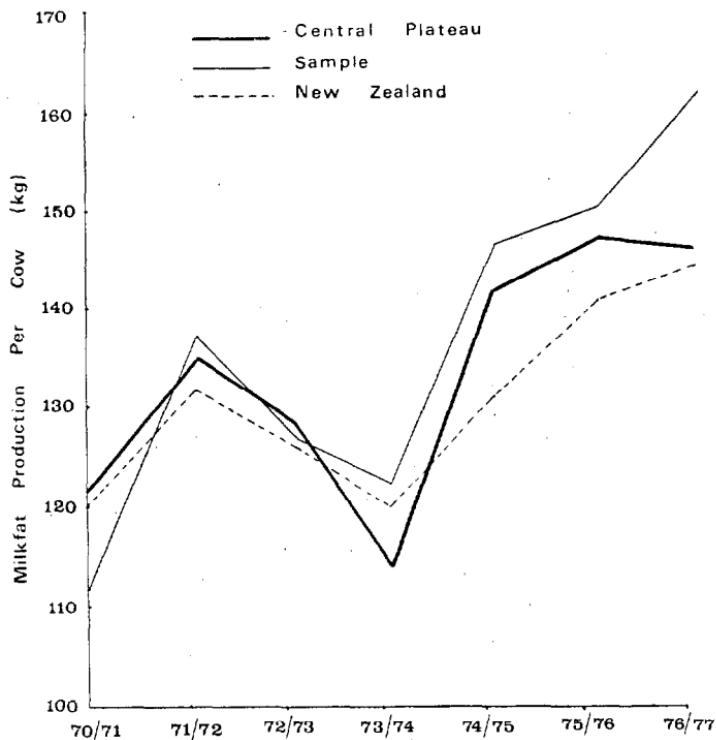


FIG. 1: *Seasonal trends in milk-fat production per cow* (Source: N.Z. Dairy Board Farm Production Reports).

the increase on Central Plateau dairy farms was from 12 to 25% (lucerne subsidy data). A great proportion of the 61% increase in milk fat/ha on the sample farms would appear to have resulted from increased feed supply due to the planting of large areas of lucerne.

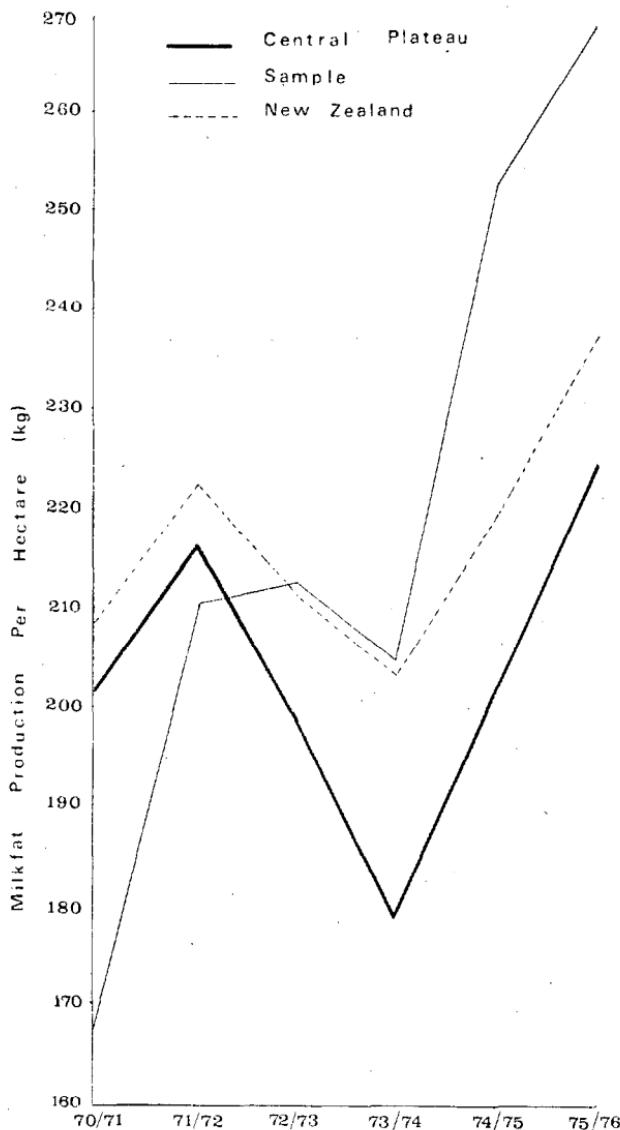


FIG. 2: Seasonal trends in milk-fat production per hectare.

The figures for production per cow and per hectare do not give a complete measure of the impact of lucerne on district dairy production. Over the period there was a trend of both increased cow numbers and total milk fat in the district, while nationally these figures were declining.

TABLE 1: TRENDS IN COW NUMBERS AND MILK-FAT PRODUCTION, 1971-2 TO 1977-8

	Rotorua Ward ¹	Balance of NZDC ¹	New Zealand ²
Trends in cow numbers (%)	20.0	-4.5	-6.7
Trends in total milk-fat production (%)	29.9	-2.06	-10.2

¹New Zealand Co-operative Dairy Company (unpublished).

²New Zealand Dairy Board (unpublished).

The increased cow numbers in the Rotorua ward of the New Zealand Dairy Company (Table 1) were a result of 9.1% more cows per supplier and an 8% increase in the number of suppliers.

DISCUSSION

Rotorua district dairy production has risen substantially at a time when New Zealand dairy production has been falling. This extra production, resulting from more herds, more cows per herd and more production per cow, is worth \$3.8 million annually at the farm gate. The increase must have resulted from factors that are unique to the district. One factor is the confidence that farmers have gained from knowing that planting more lucerne would improve the potential of their farm. It is notable that most farmers initially involved in planting lucerne for grazing were encouraged to do so by advisers.

On the sample farms, production per hectare has increased substantially. Lucerne planting on the sample farms has taken place at a greater rate than in the rest of the district. These farmers all obtained intensive advice from advisers or consultants. The adviser has been a catalyst to stimulate this production increase.

CONCLUSION

The success of this advisory programme can be attributed mainly to the fact that advisers were present in sufficient num-

bers to guide management of individual farmers. Large responses to advisory effort cannot be expected unless intensive on-going advice can be given on an individual farmer basis. This requires an adviser-to-farmer ratio as low as 1 : 150 or less. It also demonstrates the need for planners of extension services to give preference to districts where the farming and social environment is right for change.

ACKNOWLEDGEMENTS

To the ten farmers involved for making their farm data available; to advisory and research staff, Ministry of Agriculture and Fisheries, Rotorua, and M. E. Smith, Hamilton, for helpful suggestions and criticism in conducting this study.

REFERENCES

- Baars, J. A.; Radcliffe, J. E.; Brunswick, L., 1975. *N.Z. Jl exp. Agric.*, 3: 253.
Mace, M. J., 1979. *Proc. N.Z. Grassld Ass.* (in press).
M.A.F., 1977. *Farming on the Central Plateau* (2nd ed.). Ministry of Agriculture and Fisheries, Hamilton.
N.Z.D.B., 1970-1 to 1975-6. *An Economic Survey of Factory Supply Dairy Farms in N.Z.* New Zealand Dairy Board, Wellington.