

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](http://creativecommons.org/licenses/by-nc-nd/4.0/).



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/>

MR. CANDY: In the actual process of conserving grass for hay and silage would the losses mentioned be balanced by the extra feed produced by the pasture due to closing up, instead of repeated grazing?

MR. SEARS: Yes, that is, with a good pasture. You probably pick up one way what you lose in the other as regards total dry matter.

MR. RANSTEAD: Has Mr. Sears taken into consideration whether there is less loss from baled hay that is put into a shed? Also, in connection with the making of ensilage, the exudage need not be lost if you make it in a water-tight silo and that would reduce considerably the loss.

MR. SEARS: We have no such comparative data on the losses in baled hay under cover. The nutritive loss in silage through leaching is not very great, approximately 6 per cent. in pits and 3 per cent. in stacks.

MR. KORRICK: I wonder whether Mr. Sears has figures for comparing the wastage in pit silos and concrete silos?

MR. SEARS: These figures were for concrete pit silos. The averages for earth pit silos and concrete pit silos were almost the same.

DR. ANNETT: We actually compared losses in India. In loss of silage so much depends on methods of estimation. I think you had some figures in New Zealand where losses in silage making were far lower than figures given today. The figures today are, I think, on the high side.

MR. SEARS: They are the average figures for five years and there are quite big differences between years. We did not follow the sampling technique at all. We weighed every load that went in and came out.

LABOUR IN RELATION TO GRASSLAND DAIRYING

by

R. A. CANDY, NGARUA, R.D., WAITOA.

Practically all systems of farming are the product of the general climatic and soil conditions of the particular area concerned. There are occasions when the skill and knowledge of the farmer is able to nullify to some extent disadvantages of soil and climate to successfully operate a particular type of farming, but, in general, the aforementioned principle holds good. Therefore, it is usual for the particular type of farming being carried on, on a place, to fix the labour requirements of the property, rather than for the labour available (viz., family units) to fix the type of farming that is carried on. Grassland dairying in its most strict sense is often looked upon almost as the "Eldorado" insofar as labour utilisation is concerned. Some say "Why, now with non-stripping one farmer could milk anything from 40 to 80 cows, and the grass growing all the year round practically will do the rest." Such things as the feeding of calves, maintenance of roads, trimming of hedges and cleaning of drains can be airily forgotten.

There are many ways in which a farmer in an emergency can keep the wheels turning for a while, but these methods continued for any length of time will lead to rapid deterioration on a farm, with resultant lowered production. The most sacred trust that any owner of land has is to see that as a result of his farming operations his constant endeavour is to build up its fertility, so that the generations that are to come are handed on a priceless heritage, and not a mine rapidly being worked out. Therefore, in assessing the labour requirements of any farm, this basic fact must always be kept in mind. This is as true in grassland dairying as in any other form of farming.

In broad terms it is true to say that the whole of dairying in New Zealand is grassland dairying; that is, that the dominant food utilised by our cows is grass, but the extent of this dominance varies very greatly. In general terms the dominance increases as we travel from South to North, from the areas with the more rigorous winters to those that are much milder. This is understandable, as those areas with the milder winters have a longer sustained growth of grass than those with the more rigorous ones. This generalisation can be thrown out of line when, because of climatic and soil conditions, an area such as North Auckland is dominated very largely by paspalum, and although because of its latitude its winter is milder than my own area, the Waikato, its grassland growth throughout the winter is much less because of the paspalum (a summer growing grass largely), as against the dominance of the ryegrass with its relatively good winter growth in the Waikato.

I mention this wholly because of the fact that the labour requirement of a farm that has to crop considerably to supplement its grass (all other factors being equal) will need to be greater than that on one where no cropping is resorted to. Every good dairy-farmer endeavours to so adjust his operations that there is a constant flow of work to be done throughout the year for a constant labour force. He has certain jobs that have to be done at a certain time, and other jobs that can be done with advantage at any period of the year. For instance, in the first category he must milk cows morning and night, he must harvest his ensilage and hay when it is ready to cut, but in the second category he can repair his buildings and maintain his fences at any period of the year. Between these two extremes he has other jobs that need to be done for best advantage at particular seasons of the year, but not necessarily today or tomorrow.

In this category I would list top dressing and hedge trimming in the spring and autumn, noxious weed control before they reach the flowering stage, and repairs in the cowshed and yard during the winter period when most of the cattle are dried off. To the extent that cropping is resorted to, to supplement grass growth, so the extent of the jobs that have to be done at a particular time are increased. This peak of labour demand can become so great that it is impossible, with a constant labour force that can be fully and efficiently employed throughout the rest of the year, to cover the work required. Casual labour or contractors have to be brought in to fill the breach. This is not always easy to get, sometimes very inefficient, and sometimes very costly.

As a result farmers often refrain from the cropping and endeavour to get through on grass alone, when because of their climatic and soil conditions, they would most likely have had a greater output per acre if cropping had been resorted to. The farmer argues, however, that the special costs associated with this peak period work nullify to a great degree the advantages of the extra food produced. It is impossible to lay down any hard and fast rule associated with the labour force required in grassland dairying because of a multiplicity of different factors, such as the one referred to, namely the extent of cropping required; whether the farm is drained swamp, dry flat, or rolling in nature; the extent to which noxious weeds are a problem; the area required to carry a cow, or the extent to which topdressing has to be done. All these things and many others play a part in assessing the labour required to efficiently handle a property.

All these observations up to the present on the extent of the dominance of grass, and its resultant crops of ensilage and hay from 100 per cent down according to the extent that cropping is supplementary, have been made on the economic return likely to accrue from fair average grassland and fair average crops, but in actual practice there are few of us with farms that have not got a percentage of our pastures producing well below the optimum possible for the soil type concerned. It is therefore advisable for the pasture to be renewed, and in the renewal a supplementary crop can play a very useful part in the economy of the farm concerned.

We farmers are told by you, our scientific friends, that our system of intensive rotational grazing is slowly but surely building up a very high state of fertility in the top two or three inches of our soil, a fertility that can be capitalised for the growing of good crops, but speaking with some experience I find that often this increased fertility manifests itself in the form of absolutely glorious weed growth. Is it any wonder, therefore, that so many farmers have avoided the plough and attempted to build up the quality of their pastures with heavy topdressing and heavy stocking. It is true that from the labour requirement point of view, the process of cropping is more elastic today with the almost universal use of tractors, capable, if necessary, of working a full 24 hours daily, than it was a generation ago, when the draught horse did its honest 8 hours a day, but could not be expected to sustain more than that.

While dealing with the question of cropping, I understand that that eminent grassland authority in the United Kingdom, Professor Stapleton, is convinced that to get the maximum results from pastures, they should be renewed every seven or eight years at the most, and many people in England are satisfied that he is right.

I also understand that some of our most eminent workers in this field in New Zealand think likewise. All I can say from my experience is that under Waikato conditions I think they are completely wrong. Let me make it clear that I realise that there are many thousands of acres of pasture in this country that would improve in output tremendously if renewed with a first class seed mixture suitable for the type of soil concerned. On the other hand, I know of many pastures 20 and 30 years old that it would be a shame to let a plough near. A pasture just sown down in the autumn yields a very good return throughout the first winter and the following spring, but after that it is not until its third year of establishment that its total yield of food will anywhere near reach the level of a good old-established pasture.

I have laid down a number of pastures during the last 8 years that under similar soil conditions have never as yet yielded a return equal to some that have been established over 20 years. My motto, therefore, is "Do not plough up a pasture just because of its age, but only when convinced that it is producing much less than it should for the soil type concerned."

Let us take a little flight of fancy, and depart from the general to the particular, and take a look at a hundred acre property of what I might call typical flat Matamata country, which for the most part is dry, but which is likely to need some draining on, say, one-third of it. Reasonably well sub-divided and watered, and carrying sixty cows and the necessary replacement stock, such a farm, in my opinion, run on a pure 100 per cent grassland basis, requires the services of two adult male units to operate it properly from day to day, and maintain it as an asset for the farmer, and through him the country. If cropping is to be done, or noxious weeds are a serious problem, it will necessitate either heavy overtime in work, or casual labour, or a contract worker brought in, but as practically always happens in these cases of dairy farms where the economic position is such that it is likely to show no immediate net return for the employment of an additional hand, the farm usually carries on understaffed and the asset starts to deteriorate.

Now, to return to our imaginary farm - let us outline the work to be done in a complete season, and the manner in which we can dovetail in to best advantage, those jobs not affected by seasonal conditions with those that must be done at a specified time and those of a seasonal nature. If we start at the period mid-July to early August, which coincides with the commencement of calving in this district, one will find that for a period of nearly two months little can be done other than the fixed jobs of milking, bringing in of cows and calves, the feeding and marking of the calves to be reared, the harrowing of the pastures the cattle have been wintering on, and the feeding out of the hay and silage needed until the spring growth can provide the full requirements of the stock. Towards the end of this

period, as the grass grows and the feeding out lessens, so one snatches the chance, where possible, of getting on a little topdressing and attending to noxious weeds. Then, from mid-September to early November, if crops are grown the ground will be ploughed and worked and sown if for autumn use.

During this period it is usually a good time to repair fences. (Post holes are much easier to dig then, when the ground is usually damp, than in the late summer and autumn, when it often gets very hard). From early November to early January is usually pretty well fully taken up with harvesting operations and things directly associated with it.

Here I think it is important to stress both from a labour utilisation point of view, and also the efficiency of grassland farming, the very great importance of ensilage as a crop. From the labour utilisation point it helps to spread that peak of work I referred to earlier, and from an efficiency point it gives that fresh aftermath of milking feed in December impossible under a haymaking programme only.

January and early February is the period on my property when the annual holidays are taken both by employer and employees. It is true that this is much easier to arrange on a property where several labour units are employed, but it is not impossible even on the two unit property, where with non-stripping one man can handle for a short period a herd of 60 cows, provided he is not tied up with a lot of other necessary maintenance work at that period. With the one man farm it is just as possible then as any other period of the year, as obviously a replacement must be found to look after the stock and property whenever the owner has his break. The reasons why I pick this time of the year for the holidays are because, firstly, it is the period when everybody most needs a break after the heavy strain of the harvesting period, secondly, it is the period that coincides with no other major seasonal work other than the milking - in other words, the time when one can best be spared, and, thirdly, it also is, from a weather point of view, the nicest time of the year to have a holiday.

During this period topping of pastures, renovating of gates, buildings, and harvesting machinery are usually done with what time is available for a reduced staff. If the autumn is a dry one, feeding out of ensilage is often required during the months of February and March. This is also the best period of the year for the carting of soil for the building up of roads and gateways, and around water troughs. If time is available, but in my experience it is seldom so, this work can be done with great advantage just before harvesting starts, as the main thing with this job is to get as much consolidation as possible before winter conditions set in. If autumn crops have been sown this period will also coincide with their feeding out, and by the end of March or early April the working up of the ground again, and the sowing to grass once more. Having got this done, then it is time to attend to the trimming of hedges and the clearing of drains. April and May are the months that usually offer the best opportunity for work of a developmental nature, such as the laying on of water to additional paddocks, and the making of troughs to hold same, the construction of culverts or bridges, the extension of concrete leads around the shed, etc. Then in June and July we are right in the winter once more, and feeding out takes up a lot of time in the shortened days. This is the time of the year when tile draining, etc., is done on those wet pieces of our land not giving of their best because of inadequate drainage. Ground is also got ready for the planting of new hedges, and the misses of the previous year's work are replaced. Then before we know where we are, the calves are bellowing once more and another season starts.

Apart from all the jobs referred to throughout the various periods of the year, no farm is efficiently operated that has not got on hand at all times what I call a number of "wet day jobs", those things needing doing that are not of immediate urgency that can be done under cover; jobs, in fact, which should only be done on wet days, such as the clearing out of manure sheds with the sorting and stacking of sacks, the making of sack covers for haystacks, the oiling of harness,

repairs to tools and machinery not of an urgent nature, the making of gates to have on hand for replacements, and dozens of other minor jobs too numerous to mention.

I think it will be agreed that all the work referred to makes a pretty formidable list, and we might ask, "Does the farmer and his employee get time to read the paper?" It is true that the hours worked on our dairy farms are relatively long. It is also true to say that, speaking generally, they are not so long today as they were twenty years ago.

The almost universal use of milking-machines, together with the definite extension of non-stripping, and greater mechanisation in all farm work, have played their part in this direction. The simple law of supply and demand has also forced the position. As hours worked in industry generally have fallen, so the farmer has been forced to make his conditions of work more attractive to his employee, and so he himself has said, "I will not make such a slave of myself in the future". This process, to my mind, will and should continue, but let us make every endeavour to see that we can exploit the findings of such people as you, our scientists here today, the engineer, and what little we may pick up ourselves, so that those reduced hours will not be associated, as they have been in so many other industries, with reduced output per unit of labour. The farmer is keenly aware of the fact that to maintain and improve his standard of living he must compete with other countries on the world's markets, but he does ask that at least part of his efforts towards increased efficiency are preserved for his own benefit, so that he is not left like the proverbial cat chasing its tail.

In the guaranteed price structure upon which the dairy farmer works, the labour cost has risen in the last 10 years by 64 per cent, and its ratio to total costs has increased from 47 per cent to 52 per cent, therefore, whatever new developments in farming technique may be brought forward from time to time by such people as your goodselves, must be very critically examined to see their effect on labour costs, as these are of such a dominant nature today that many desirable things cannot be implemented. Their introduction may increase production, but only at an increased cost per lb. of butterfat. We farmers are wanting your assistance. We want improvements in many directions, but remember always they must be improvements that can be achieved with a consequent lowering in unit costs.

We are gathered here as an Animal Production Society, whose prime purpose, I believe, is to seek at all times the best manner in which our domesticated animals can serve mankind. We live in a world zone of comparatively small dimensions where a combination of temperature and rainfall has made it comparatively easy to develop and maintain grassland swards which to date have proved the cheapest means of producing milk from cows, and as a result, we have built up for ourselves a relatively high standard of living.

There are movements in the world today where in other areas of suitable soil and climate, combined with cheap labour, a great intensification of production of commodities competitive with our own may have serious repercussions on our economy, therefore we must at all times endeavour still further to streamline our labour requirements in our industry so as to assist in meeting this potential danger. That will be the farmer's job. The members of this Society have a very great responsibility in helping us through their actions, in their respective spheres, in acquiring and making available to the farming community knowledge that will increase our efficiency, based on both environmental and genetic factors. May you be successful in your efforts.

DISCUSSION ON MR. CANDY'S PAPER:

DR. ANNETT: Mr. Candy's paper was of especial interest of those who own farms. He has indicated the enormous diversity of the operation that have to be carried out on a farm. I have always said that October is the most critical month of the farmer's year. Farming year should be begun in October and ensilage cut as early as possible.

MR. FORD: One of the things that struck me very much has been the large amount of deferred maintenance accruing on farms right throughout the Auckland province. This must necessarily have a detrimental effect on production. There is a scheme at Warkworth where a number of small dairy farmers are running a co-operative labour scheme and they are employing four or five men and would employ more if there were sufficient houses. One of the problems that has to be faced is the provision of suitable housing for farm workers. The ordinary dairy farmer cannot take advantage of existing legislation because he has not the capital to warrant the full-time employment of certain classes of labour. The factory man does not have to provide houses for his employees. Such a scheme as that at Warkworth would go a long way towards maintaining a farm in an efficient state. I notice too that during the last ten years, or so in the Manawatu and Waikato provinces the number of sheep has trebled, again showing, I think, a decline in the amount of skilled labour available. To my mind it is the most serious problem at the present time. Farmers are just working according to the capacity of their own individual abilities.

MR. CANDY: I agree with Mr. Ford practically 100 per cent. on the question of the deferred maintenance. It is an unfortunate factor in our labour shortage problems. This deterioration takes time to show up and the farmers are not aware that it is creating a false picture of the actual labour requirements of the farms.

MR. RANSTEAD: The labour aspect is important in connection with the renovation of pastures. This is quite essential in cases where part of a farm is not in first class pasture, in view of the shortage of labour. Has Mr. Candy considered broadcasting good seed in an old pasture in the early spring time or as an alternative, taking out a crop of Italian ryegrass which he could have sown the previous autumn making ensilage and putting it back into permanent pasture?

MR. CANDY: With regard to sowing of seed. I have tried that and was disappointed. As a practical measure I have given it up. I feel that I do not get the same results as I do with the ploughing and resowing with the very best of species. My own experience is associated with something on which I would like enlightenment. In some of my damper country in an endeavour to get rid of browntop I have been adopting the procedure of taking a crop of swedes first and then following that by a crop of oats and peas which I put into ensilage. I then grass the area down the following autumn. This routine has been associated with a minor problem. Some of my country has not been as even as I would like it and by following the procedure I have just outlined the conformation of these paddocks has been improved.

MR. LEES: Has Mr. Candy the figures for the first, second and third years of the actual grazing supplied in cow days, say? He mentioned topdressing in September which I thought would rather tend to aggravate the spring growth position.

MR. CANDY: I have actually got the grazing days over a period of years for all my paddocks. Those figures have shown me that I have not got the grazing out of those younger paddocks. In following a rotation of paddocks I find that with my second year pastures I have frequently to miss that paddock in the cycle because it is not ready to be grazed. About the topdressing in the spring. What topdressing I do in the spring is mostly associated with the pastures that are actually shut up for ensilage. It is true to say that I usually like to get it on at the end of August but often it is the first week in September.

MR. SEARS: I should like to emphasise the importance of keeping a register of grazing days. I have only seen three or four farmers in the North Island that keep a register and who run their farms as a business. If many more farmers adopted that method of keeping an actual register of what paddocks are grazed the results would open their eyes.

MR. KORRICK: With reference to the question of labour on farms I notice in New Zealand especially on dairy farms that two points seem

to have been overlooked. Dairy farms in New Zealand are easily the most highly mechanised farms in the world but not enough thought has been given to the actual work which the dairy farmer in the dairy shed has to do. I would like to mention two points. First, lighting. The lights are placed in such a position that they are not helpful for milking purposes. Instead of throwing the light on the cow's udder they leave it in the shade. The second point which I notice is that although milking machines have been introduced there is still a lot of stooping. This could be remedied by putting the cow on a platform or by putting the milker below the cow. This could increase the efficiency of the machine milking and at the same time make labour on the farm easier.

MR. CANDY: In reply to the first question dealing with lighting, 95 per cent of evening milking is done in daylight and so far as morning milking is concerned, for at least the majority of the year that is done in daylight so that it is a relatively small period that is referred to. However, apart from the position of the lights, the lighting in sheds generally as I know it in the Waikato, is at least equal to the lighting in the houses. My reaction to the second part of the question is that there is a lot of stooping to be done in other parts of the farm and if the milkers can't do it then it's just too bad.

MR. MITCHELL: The question of replacement of pasture has been raised once or twice and I have been wondering what Mr. Candy's impressions are concerning this matter. What are his views as to the relative advantages of turning over a pasture and sowing in grass as soon as possible either by ploughing or merely harrowing, as against the procedure where the pasture is turned over, a crop taken out and then new grass sown down? I have in mind particularly the difference in work involved and the time the pasture is out of production.

MR. CANDY: Some years ago I was interested in the same question. I had a 14 acre area, one third of which I harrowed heavily; another third of the paddock I put the discs into, and the other part I ploughed and resowed directly back to grass. I am saying quite definitely the part that I ploughed and sowed down in grass was the best. The question as to whether you take crops out of the ground or not in the process of regrassing is wholly, to my mind, associated with the condition of the paddock at the time of actual ploughing and is particularly associated with the topography. If my paddock as far as surface is concerned, is really good, I would put the plough in in January and turn the paddock right over, and put it into grass in March. I am inclined to think that from a pure economics point of view ~~that~~ that is probably the best way of handling it.

MR. LONG: In connection with the resowing. I have been trying over the last three or four years to determine the most economic method and this year I have had much greater success with over-sowing. The first two or three years I did over-sowing with Sunray harrows. I had fairly good success the first year but not 100 per cent. I was not as successful as if I had reploughed and resowed it. The next year the season was a wet one and I had difficulty in working the area up using the same method. Last year I tried more drastic methods. I submitted a 7 acre paddock to very heavy and close grazing with dry stock. I then gave it a chewing up with Sunray harrows working it severely and then sowed at a rate of 20 lbs. to the acre with a mixture including 3 lbs. of No. 1 white clover. So far the results are showing up very well, although we had approximately six weeks of dry weather after sowing. In over-sowing it is essential to get the old pasture chewed right down, to work the area thoroughly and after that to keep the old pasture reasonably chewed down until the young grass comes away satisfactorily. Another paddock of 4 acres was ploughed up in January and resowed towards the end of February and so far it looks as though the old pasture with top oversowing is going to do better than the new grass. You must keep the old grass well down but I find it later comes away again.