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"EXTENSION WORK IN DAIRY CATTLE FEEDING"

by

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Following the setting up of the New Zealand Dairy Board's Herd Improvement Plan in 1939, six consulting officers were appointed in February of 1940 for the purpose of extension work in the breeding and feeding of dairy cattle, each acting within an area operated by a Herd Improvement Association. In this paper an attempt is made to deal with some of the nutritional aspects of this work. Although the consulting officer's services are available to any dairy farmer within his area, it is found that the few requests for assistance which are made, come almost solely from Herd Recording members. The major portion of the work thus far has been a matter of salesmanship, for the reason that, generally speaking, dairy farmers are more or less content with plodding along year by year employing the same methods whether they are sound or otherwise. When severe reverses are experienced the weather conditions, or the district, or some other factor over which they have no control, comes in for all the blame. Underneath this desire to lay the blame at someone else's door, there is a deeper desire to make good - if only they knew how. The first job, then, is to sell the ideas: (1) that there is room for improvement; (2) that such improvement is economically sound (one of the first questions is - "but, does it pay?"), and (3) that such improvement can be made in any district, under almost any conditions.

The average farmer is a practical man. Before he can be sold an idea he must be convinced of its practicability. Unless one has a practical background it becomes almost impossible to act as a successful middleman, which is really the status and function of an extension officer. Fundamental aspects of grassland development and utilisation of same as dealt with by Messrs. Levy and Ward respectively, whilst remaining fixed in principle have to be handled differently on different farms as each farm presents its own particular problem. Observation shows, that whatever the district, the better strains of grasses and clovers give the best results, but until a farmer understands the elementary fundamentals of pasture management, it is impracticable to suggest the costly method of ploughing and grassing to increase his production. When once sound methods are practised with the existing pasture, the wherewithal to regrass the poorer paddocks is soon forthcoming. Again, the limiting factor to the obtaining of maximum results, may be lack of drainage, poor subdivision, over stocking, an inadequate water supply, lack of supplementary feeds, lack of attention to detail and so on. When doing the rounds of the farm it is necessary to be able to put the finger on the weakest spot if success is to come our way - thus, a "Jack-of-all-trades" reciprocates between master specialist and practical farmer.

Too many farmers - even amongst those who are consistent recorders - fail to realise what a wonderful asset they have in their individual cow production figures, when looked at solely in the light of a measuring index of their management in respect to feeding. With access to these figures the consulting officer has concrete evidence on which to work and base his arguments. There are several ways in which these figures can be taken out to tell a convincing story. The monthly butterfat average given in the front of the members' folder in most cases is indicative of the general feed situation. For example, with such butterfat figures as:- August 24, September 27, October 33, November 41, December 40, it can be seen at a glance, that these cows were very poorly fed in the early spring months and possibly throughout

the winter. A close investigation of our monthly figures in the lactation curve for high producing cows, and herds in New Zealand, show that the variation of fat and milk from the second month to the peak is very small. In the case cited, there is a margin of 17 lbs. of fat. With a peak average of 41 lbs. this herd has shown that when feed is available it is capable of producing at least this amount. In well fed herds there is very little variation in production from the second to sixth months inclusive, and, in seeking to help a farmer who is putting up poor figures, the method is to select a farmer (in the same district, if possible, and on a similar soil type) who is putting up good figures - a comparison of two such sets of figures has not failed yet in having the desired effect - suggested methods of providing an adequate feed supply have been questioned, to the extent of suggesting at first, that they are impossible on the particular farm, but experience shows that once a man is convinced that others are doing a better job than he and that his poor figures are a reflection and measure of his management, there is little difficulty in persuading him to make quite drastic changes in that management.

A second method of using figures successfully is by selecting the ten top producers in a herd from those cows which calve normally in the first month, say July, and have their first test in August. A graph of their production figures is a more accurate measure of feeding than that given by the monthly average of all cows in milk, as the latter includes carryovers, slips, etc., which seriously affect production. In a poorly fed herd the differences in the figures from the first months to the peak from these high producing cows is often very great - as much as 30 lbs. fat. Cows capable of producing 60 lbs. at the peak would certainly produce more than 30 lbs. in the second month of the lactation if feed were available. A comparison of ten such cows in a poorly fed herd with ten in a well fed herd are most convincing. This method has been used in several cases and in many districts and in some instances the same cows have come in in the following season under the changed conditions and the graphs for the seasons clinch the argument for better feeding, with your farmer friend for good and all.

Yet another method is to compare all the cows in the herds, slips included, which calve in the first month. The following is a series of graphs taken out in this way from a farm where the feeding has been consistently high over a long period of years. Possibly the most interesting feature in this case is the outstanding results achieved through good feeding in spite of sterility and abortion troubles. Having convinced the farmer that there is room for improvement, the next move is to suggest ways and means of bringing about that improvement - a careful study of the means being employed by the most successful man in a district, act as a guide to what can and what cannot be done. In some cases it is impossible to find a really successful man and one has to be guided by the soil type and general weather conditions. In almost every district much greater use can and should be made of pasture. Practice shows that approximately one-third of the farm should be close grazed - preferably cleaned up with sheep - harrowed to spread droppings, and closed up at dates varying from the first week in March till mid-May, according to the district. The ideal is to have from 6 to 8 inches of feed on these winter-saved pastures when the cows come in in the spring. In the colder districts, such as Raetihi, Ohakune, Norsewood and Mauriceville, some farmers gave way to a smile of pity for one ^{who} could be so far removed from normal as to suggest, in a public lecture, that grass is the best supplement in early spring, even in districts where six or seven falls of snow are expected during the winter. That this could be done was obvious from a study of grass flourishing on the roadsides. Regardless of what one may advocate, there are always individuals who will follow any suggestion put forward. Thus last year three men in the Ohakune-Raetihi district, and one at

Mauriceville West, grew autumn saved winter grass for the first time in the history of these places. The latter was closed during the first week in March - the former not till the end of March. The winters were hard in both places - the pasture at Mauriceville - a certified mother seed rye white was ideal, with 9 to 10 inches of growth when the cows calved in August. Those at Ohakune were well forward and provided a good bite of feed but should have been closed earlier so that the plants could have been more established before the hard weather set in. This pasture is best utilised by the electric fence on all soils which are not given to pugging - allowing access each day, to only that which can be cleaned up during the day, in addition to what supplementary feeds may be being fed in the nature of hay and roots, choulmoullier or silage. The latter foods being fed in quantities as will maintain the body of the cow, and the grass in such quantities as will produce a normal yield of milk. Wherever grass is being utilised on the above plan, the production figures particularly during the first three months of the lactation, have been raised to a figure approaching that of the peak months. As a result of individual farmers practising this method in a district, others soon follow, and this season it is most gratifying to see the extent to which it is being practised. During this month, a farm was passed at Mangawhata, where the electric fence was being used to control bullocks on a ration of winter saved grass. This indicates something of the value which farmers place on the method once they become educated to it. The recovery after grazing of these pastures is approaching the remarkable, when compared with those pastures which have been close grazed during the winter. With one-third of the farm in this condition it becomes an easy matter to shut paddocks for early silage, which is a great stand-by for the next difficult period which often confronts the dairy farmer in the autumn. Hay, too, can be saved in greater quantities and thus provision is made for all the year round which is the one time when a dairy cow must be well fed if she is to give of her best.

Heavy low-lying country, given to pugging, presents the greatest problem in utilisation of feed supplies. Successful men are growing winter grass in somewhat lesser areas - approximately one-quarter of the farm - and relying on roots such as mangolds and sugar beet plus hay, for feeding at those times when it is impossible to graze the pastures. This feeding is usually done on one paddock, which is sacrificed to save the rest of the farm. Feeding grass in breaks with an electric fence is quite out of the question on this type of country, and there is no alternative to giving the cows free access to the whole paddock, and then only when the weather is suitable.

There is yet another important feature in respect to having an ample supply of grass when the cows come in and before if possible. As mentioned earlier, the grass is fed in addition to the supplementary or winter feeds to which the cow has become accustomed. In bringing the stock from one method of feeding to another, drastic changes must be avoided if bouts of indigestion with subsequent scouring are to be prevented. It is rather strange how many farmers are prepared to look upon scouring in their cows during the early spring months, as something which is inevitable, when the same men would be most alarmed if their hoggets were affected in the same way. They know, of course, that once their sheep begin to scour badly they fade away very quickly. The cow's system is becoming similarly undermined under the same circumstances, but she is blamed if she gives way to udder troubles or other ills. One is confident from one's own experience as well as those gathered from many successful farmers over a wide area, that careful feeding to safeguard the animal's health is one of the greatest factors in the control of diseases of various kinds.

From the foregoing, it will be apparent, that in what purports to be a discussion of the feeding aspect of dairy herd improvement work, the specialist nutritional side is, at the most, but the foreground only of an extensive landscape. This point is, I think, very important, and to a gathering of scientific specialists, perhaps the most important message which one who is involved in the actual work in the field can bring to you. It emphasizes that no matter how strong a case may be put up for the use of the modern refinements resulting from scientific endeavour, practical limitations to progress, inherent in the individual character of every farm and farmer, inevitably result in a policy of making haste slowly. It is more the rule than the exception, that better feeding is obtainable more cheaply and efficiently by simple farm management modification, than by the application of all that we know about the job. Farming lags behind science by many years. All that you have given to us cannot be applied, not because it is impractical or uneconomical, but because there are more important things needing attention first.

SUMMING UP THE POSITION.

1. In extension work in dairy cattle feeding the farmer must be convinced of the room for the economy, and the practicability of improvement.
2. The monthly herd returns of butterfat are a valuable guide to the extension officer in locating the weaker link in feeding, and in demonstrating this to the farmer.
3. The provision and utilisation of autumn saved winter grass is most frequently the key to immediate improvement in production through feeding.
4. Application of elementary principles of pasture production and management is, in most cases, more important than a full appreciation of all modern refinements.
5. An extension officer's work as a middleman between the scientist and the farmer requires a wide practical experience of all aspects of farming, as well as an appreciation of scientific principles.

DISCUSSION.

MR. WEBSTER drew attention to the fact that his experience suggested that the policy of bringing cows into profit in very high condition might be overdone, and that it might be safer to aim at a happy medium. Post parturient dyspepsia and paralysis was common among the very high conditioned cows in Massey College herd and in such cases mass necrosis of the masses of abdominal fat was common. Masses of this necrotic fat had the consistency and appearance of yellow bar soap. Another very prevalent trouble in the College herd was a chronic form of hypomagnesaemia. These cases are not by any means confined to young spring growth, many occur on mature or even over-mature pasture - recurrent symptoms were observed over a period of weeks.

MR. I. McINTOSH: Mr. Neilsen's address has proved extremely interesting to me because he has succeeded in convincing me that a consulting officer fills a most important gap between the scientific institutions and the dairyfarmers. Our difficulty has always been to make the results of research available to the dairyfarmer, and I have, at times, been inclined to doubt whether this could be effectively done. Mr. Neilsen's address is a good example of the method by which better feeding practices can be successfully preached to the average dairyfarmer.