

the increased numbers, combined with the dry spring, prevented any hay being saved. However, sufficient hay has been left over from last season's crop to provide the greater part of the winter feed for the coming season.

The original ewes with which the experiment was started were culled shortly after weaning, having provided four crops of lambs. This has resulted in a reduced rate of stocking for the fifth season, but it is expected that any surplus growth will be conserved as hay or grazed by flocks of followers.

The coming season will be an important one in the life of the experiment, in that it will be the first season in which all the stock carried will have been bred on the particular fertilizer treatment.

The number of ewes carried per acre on each of the four treatments during the past four seasons is as follows:—

Treatment.	Fertilizer, per Acre.	Number of Ewes carried per Acre.			
		First Year.	Second Year.	Third Year.	Fourth Year.
A	5 cwt. lime, 1 cwt. super (alternate years) ..	1.0	1.3	1.6	2.15
B	2 cwt. super annually	1.3	1.2	1.2	1.44
C	1 ton lime initial dressing and 2 cwt. super annually	1.6	1.7	1.8	2.05
D	1 ton lime initial, 2 cwt. super and $\frac{1}{2}$ cwt. potash annually	1.6	2.1	2.3	2.35

Re-establishment and Rainfall

In the re-establishment of subterranean clover the effective rainfall during the months of March and April is an important factor. A dry autumn often results in a late autumn establishment and the young clover may be killed by early frosts. With good rainfall in March and April early autumn establishment occurs and the prospects for a good season are ensured.

On the light porous soils of the Ashley Dene type, spring rainfall also has a considerable effect on production. During the past season the autumn was dry, resulting in a fair establishment, but the spring was abnormally dry—particularly in August—and growth on the pastures was consequently low.

In the previous season, 1941, when growth during the spring was considerably higher than in 1942, the August rainfall was 9.3 in. The experiment has not run for a sufficient number of years to attempt to correlate production with seasonal rainfall, but on the evidence which is available it would appear that high rainfall in March and April is necessary for good establishment, and, in addition, high rainfall in August is necessary for good production. There are, of course, other factors such as wind, temperature, &c., which also affect growth and would require to be taken into account in any attempt to measure correlation.

Mowing Trials

The small-scale experiment designed to measure production by cutting plots with a horse mower was cut once during the season—i.e., on 21st October, 1942. In the past at least two cuts have been taken in the season. A certain amount of growth developed after the first cut, but it was insufficient to warrant cutting. The production from these plots, though considerably less than in previous years, shows the same trends as in previous seasons.

Conclusion

One of the interesting and important results arising from the fourth year's trial, supplementary to those of previous years, is the fact that the treatment A in the grazing trial and treatment No. 7 in the mowing trial, though they are the lightest in fertilizer application, are second in production to the heavy-fertilizer treatment, D in the grazing trial and No. 2 in the mowing trial. It would appear that frequent applications of relatively light dressings of lime and super will compare favourably with a heavy initial application of lime followed by heavy annual dressings of super only. It would appear that in order to maintain the lead it will be necessary to give treatment D a further application of lime, as the effect of the heavy initial dressing of 1 ton is beginning to get less.

ENTOMOLOGICAL INVESTIGATIONS

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Sheep-dipping Experiments

This investigation was interrupted for a considerable time due to the general mobilization order of December, 1941, which involved the personnel engaged in the work. It has now been reorganized and is again under way. Results with derris powder have continued to be highly satisfactory as far as sheep-ked is concerned. Not only are the adults destroyed, but those emerging from pupæ, up to twenty-one days, fail to survive. Even in spite of considerable falls of rain shortly after dipping, the results were still very satisfactory. Attention is now being devoted very largely to the effect of derris-powder dips upon lice. Sheep infested with body lice (*Bovicola ovis*) are dipped at intervals, kept isolated in pens, and examined periodically. Since lice, when present in small numbers, are extremely difficult to detect even when the sheep is subjected to careful examination, a different procedure from that adopted for keds must be followed. Individual animals are dipped, kept isolated over a lengthy period, and examined at intervals. If an animal is found to be free of lice on each examination up to a period of twelve months, then it is declared clean.