Recommended Topdressing Mixtures

It is difficult to say what is the best fertiliser mixture for any peat area without a knowledge of the quantities of available nutrients already in the peat, and analyses of the peat are therefore of great assistance. Requests for sampling for analysis should be referred to the local Instructor in Agriculture. Owing to present staff limitations only a limited number of peat farmers may be able to receive advice before the next topdressing, and for the guidance of the others some recommendations are desirable, although it is very difficult to make general statements covering all types of peat and all districts. It is suggested that a mixture of 3cwt. of phosphatic fertiliser and 1cwt. of muriate of potash per acre be regarded as a standard topdressing mixture for peat. This should be modified according to the particular conditions as follows:—

If the peat has had less than 6cwt. of phosphatic fertiliser in the 2 previous years, more phosphate than the 3cwt. in the standard mixture should be applied.

If the peat has had more than 6cwt. of phosphatic fertiliser in the 2 previous years, the potash in the standard mixture could be increased.

The potash in the standard mixture could be omitted if potash is known to be of no benefit in the district concerned or if the clovers in the pasture are growing vigorously without potash topdressing.

The position may arise where clover growth has been good in the past without potash being used, but deterioration of the pasture, though so gradual that it is not obvious, is suspected. Naturally it is not desirable to wait until deterioration of the pasture has reached an advanced state, and if the onset of potash deficiency is suspected, the advice of the Instructor should be sought or the farmer could conduct some trials himself. One pound of muriate of potash (or any other fertiliser) put on a strip 1 chain long and 1yd. wide is approximately equal to an application of 2cwt. per acre.

These recommendations are tentative only and may have to be revised as more information is available regarding the topdressing of peat, and they may require modification to suit particular circumstances.

In the various experiments there has been little difference in the results obtained from superphosphate and serpentine superphosphate, and the term phosphatic fertiliser has been used in this article to include both these fertilisers.

Results are not yet available from the recent "super. compound" on peat, but in the meantime it may be assumed that the quantities given for phosphatic fertilisers apply also to "super. compound".

Generally it is considered better to topdress peat in spring than in autumn. When the peat dries out severely in autumn so much rain is required to re-wet it adequately that by the time it is sufficiently wet for good pasture growth the weather is so cold that temperature is a limiting factor. Under these conditions autumn topdressing may not have much effect on pasture growth and there is a danger that the phosphate may become fixed and the potash leached down below the root zone before the temperature and moisture conditions in the spring are suitable to enable the pasture to utilise the added fertiliser.

Other Experiments

In addition to the trials with lime, phosphate, and potash, experiments have been conducted at the Soil Research Station with nitrogenous fertilisers. Early-spring applications of sulphate of ammonia gave outstanding responses on new pasture on peat, but there was a subsequent depression of clover growth except on a portion of the nitrogen-treated area which was spray irrigated. On peat land where nitrogen deficiency is so acute nitrogenous fertilisers may have an important role in stimulating the growth of grasses during the establishment stages before the clovers are able to supply sufficient nitrogen. Further experiments along these lines will be carried out on new grass next winter.

Nearly every year on most soils of New Zealand pasture growth during a portion of summer and autumn is limited by lack of water, and this effect is usually more prolonged on peat land because of the difficulty in re-wetting the dry peat. In an experiment on decomposed peat in which pasture growth was measured it was found over two seasons that there was very little growth after the peat dried out in January until the following spring. Therefore considerable attention has been devoted to moisture relationships in peat and methods of maintaining adequate available moisture in the zone in which the pasture plants root.

On the pasture sown on the deep peat on the Rukuhia swamp in April 1950 an endeavour was made to maintain a high water-table during summer and autumn. The side drain was blocked at intervals and kept full of water from an adjacent bore and the water was reticulated through the peat by mole drains. Owing to blockages in the moles caused by timber and the fine sludge and because of the unevenness of the surface the high water-table could not be maintained over the whole area. However, where the peat was kept moist and topdressed with sufficient phosphate and potash production was at a remarkably high level and equalled that of spray-irrigated pasture on clay loam. This work will be described in more detail when further results are available.

Although there is still much to be learnt regarding the development of peat land and some of the projects are necessarily long term, the results so far obtained have already assisted many farmers on peat land in improving their pastures and using the money available for fertilisers to the best advantage.

METEOROLOGICAL RECORDS FOR NOVEMBER

Station	Height of station above M.S.L. (ft.)	Air temperatures in degrees (Fahrenheit)				Rainfall in Inches					Bright sunshine hours
		Approx. mean	Difference from normal	Absolute maximum and minimum		Total fall	No. of days of rain	Difference from normal	Maximum fall		
				Maximum	Minimum				Amount	Date	
Kerikeri	201	60.0	+ 0.9	77.1	42.2	5.18	13		2.20	16	230.3
Auckland	160	61.1	+ 0.7	73.0	49.6	5.16	15	+ 1.70	2.56	12	204.9
Tauranga	10	59.8	+ 1.0	73.5	41.6	4.59	11	+ 1.25	2.28	12	225.8
Ruakura	131	57.2	— 0.2	72.0	40.1	6.14	19	+ 2.44	1.34	12	187.3
Rotorua	969	56.6	— 0.2	72.6	38.0	6.91	16	+ 2.73	3.22	12	190.5
Gisborne	12	61.4	+ 1.9	78.0	38.8	0.62	7	— 1.77	0.21	20	243.0
New Plymouth ..	160	57.0	+ 0.2	66.4	45.8	6.14	21	+ 1.43	1.18	1	157.2
Napier	5	62.2	+ 2.6	80.3	39.6	2.80	8	+ 0.75	1.68	19	215.4
Karioi	2125	52.8	+ 0.9	69.0	37.0	6.45	18	+ 2.54	1.64	12	
Wanganui	72	58.9	+ 0.7	73.9	44.8	4.98	20	+ 1.88	1.21	12	196.4
Palmerston North .	110	57.4	+ 0.5	72.5	39.5	7.20	21	+ 3.93	1.86	12	145.5
Waingawa	350	56.8	+ 0.7	72.2	34.0	3.03	16	+ 0.59	0.64	12	199.3
Wellington ..	415	55.6	— 0.2	65.3	39.4	5.79	18	+ 2.61	1.74	1	179.0
Nelson	24	57.4	+ 0.3	73.4	38.3	6.07	17	+ 3.13	1.35	28	212.7
Blenheim	12	57.7	+ 0.3	76.8	35.4	5.24	16	+ 3.46	1.34	1	230.7
Hokitika	12	53.0	— 0.8	66.7	41.2	15.94	25	+ 5.40	4.11	28	132.1
Hanmer Springs ..	1225	53.0	— 0.8	74.0	29.5	2.95	14	— 0.52	0.72	12	171.0
Christchurch ..	22	56.8	+ 0.5	79.4	33.4	1.27	10	— 0.53	0.25	27	174.7
Ashburton	323	55.8	+ 0.1	73.8	31.4	2.31	10	— 0.12	0.61	28	174.2
Timaru	56	56.2	+ 0.7	81.0	35.7	1.74	11	— 0.20	0.44	7	182.3
Alexandra	520	56.4	+ 0.0	79.0	36.2	2.58	14	+ 1.42	0.58	7	171.4
Taieri	80	54.0	+ 0.6	76.0	37.2	5.28	24	+ 2.93	0.68	24	115.3
Invercargill ..	32	53.6	+ 0.8	73.0	39.0	3.35	21	— 0.66	0.57	7	145.3

Radio Broadcasts

RADIO broadcasts to farmers will be given as follows from Station 1XH Hamilton at 12.30 p.m.:—

7 February—"Simple Farm Remedies", by D. W. Caldwell, Veterinarian, Department of Agriculture, Hamilton.

14 February—"Pasture Establishment on Hill Country", by H. M. Bull, Instructor in Agriculture, Department of Agriculture, Hamilton.

21 February—"Farming Prospects for 1952", by S. Smith, president, Waikato branch of Federated Farmers.

28 February—"Some Aspects of Pasture Establishment on Peat", by I. L. Elliott, Assistant Superintendent, Department of Agriculture Soil Research Station, Rukuhia.

The following broadcasts will be given from Station 2YZ Napier at 7 p.m.:—

5 February—"Cleaning Milking Machines", by J. A. Power, Farm Dairy Instructor, Department of Agriculture, Waipawa.

19 February—"Care of Bees", by L. A. Griffin, Apiary Instructor, Department of Agriculture, Hastings.

Other talks are given from 1YA Auckland on Tuesdays at 12.35 p.m. and Wednesdays at 7 p.m., 1YD Auckland on Thursdays at 7.30 p.m., 1XN Whangarei on Mondays and Wednesdays at 8.10 p.m., 1YZ Rotorua every second Thursday at 7.15 p.m., and 4YA Dunedin on Thursdays at 12.35 p.m.