

OF SOILS AND SPECIES

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MOST experimental work on chemical ploughing has been done where ordinary ploughing is difficult and expensive—on hill pastures. Various chemicals have been used, of which dalapon has been studied most.

Our experience dates from the summer of 1959 when surface sowings were tested by dry conditions. Trials that failed in 1959 were re-sown in 1960, but this was so long after the original spraying that it could not be regarded as a fair test. For these reasons we have so far suspended judgment on whether chemical ploughing is a useful technique in hill pasture conditions.

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Dalapon does not affect hill grasses equally; some are more susceptible than others, some are resistant to very high rates.

Both *Molinia caerulea* (purple moor mat grass or flying bent) and *Nardus stricta* (white bent or moor mat grass) are susceptible and 6 lb. to the acre of dalapon applied in summer has invariably killed these two species. *Agrostis tenuis* (bent) and *Festuca ovina* (fescue) are rather more resistant and require 12 lb. an acre if a satisfactory kill is to be achieved, although a considerable reduction can be got with 6 lb. an acre. Bent is more susceptible to spraying in May, while fescue is more susceptible to an August spraying. These two species invariably occur together; thus spraying at different dates will kill one or the other but not both unless a very high rate is employed.

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Holcus lanatus (Yorkshire fog) *Holcus mollis* (creeping soft grass), *Anthoxanthum odoratum* (sweet vernal) and *Deschampsia flexuosa* (wavy hair grass) were all resistant to a 10 lb. an acre rate as

were the *Carex* species (sedges) and all the broad-leaved hill pasture plants. To kill the last group broad-leaved herbicide is necessary.

Dates of spraying appear to be unimportant in reducing the cover of native plants, provided they are between June to August inclusive. But as this obviously determines the date of sowing, our practice has been to spray in August and surface sow the following spring.

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Disposal of dead trash is a problem. If there is not too much it can provide shelter for germinating seeds, otherwise it can be burned. Where turf and trash are deep, as on many *Nardus* and *Molinia* pastures, germination is hampered by turf drying out more readily than on normal soil. Harrowing is useful but must be precise: light harrows bounce over the dead turf, heavy harrows tear it away from the soil as a huge carpet. On some sites a heavy pitch pole harrow has been relatively successful, tearing up those plants which are not quite dead and might recover. Where rainfall is high and good germination likely, cultivations are not required.

All reseeded areas should be fenced. This is particularly important on a dead turf where seedlings, until they have grown through into the mineral soil, can easily be pulled out by grazing sheep.

The most promising swards to improve by chemical ploughing are *Molinia* and to a lesser extent *Nardus*. These are generally associated with a peaty soil, very deficient in lime, phosphate and nitrogen. Sowing should be accompanied by liberal dressings of compound fertiliser with high nitrogen, repeated until the sward is sound.

The best results have been achieved on *Molinia* swards sprayed in late July

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about possible damage through playing on half frozen greens than either the Committee, the Secretary, or the Greenkeeper. Once the "anything for a quiet life" school takes over the running of a club, or lets itself weaken with the years into that attitude, then hope dies.

Never recovers

Worse still than indecision is the failure to provide, year by year, decent sites for frost holes, where the grass is evened and looked after well enough to make some substitute for normal putting. If the frost hole is just stuck in an uneven bit of fairway or approach, you can't blame the members for grumbling at being expected to use them. Even this, though, may not be so bad as the weakest way out of all—compromise. Under this system the holes are merely placed near the front of the green throughout the winter, frost or no frost, and left there—throughout the dressing period, and throughout any foul weather that may come. The result, of course, is progressively fouler and more uneven putting throughout the winter, and the whole front part of the green knocked so badly to hell between November and March that it never really recovers from year to year.

It is really a libel on the greenkeeping profession to suggest that such a thing could ever happen. But it does. The only laugh I ever had out of the whole business was when one impatient member solemnly asked: "What's all the fuss? It never *really* freezes in this country anyway!"

Next Month—Why is a Weed?

appeared to be a set pattern around the grassy arena.

Now and then she—for I believe the leader was an old doe—would take her troop out of sight over the dunes to reappear again in the ring with her entourage complete. I do not know how long this performance would have lasted for it was suddenly interrupted by the appearance of a shepherd and his collie. The hares quite unhurriedly, and in single file, evacuated their dance floor and disappeared.

Again, in May, 1959, I saw a similar performance by 14 hares in a grass field, near Grantown on Spey and in October, 1958 I saw a party of eight mountain hares perform in the deer forest of Clova, in Angus.

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or early August with 6 lb. dalapon to the acre and top dressed with 2 tons of ground limestone. 10 cwt of basic slag, sown in the following spring, given 3 cwt. of a compound fertiliser and not grazed until autumn.

The object in chemical ploughing is to change sward composition completely, but there may be advantages in selectively changing the composition of natural hill pasture.

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