

BEATING THE WEATHER

A Special Bulletin from the Sports Turf Research Institute, though primarily aimed at sports grounds will be of interest to frost and snow bound greenkeepers

We can consider protection of pitches under various headings :

- (a) against frost
- (b) against rain
- (c) against snow

and against combinations of these three.

(a) **PROTECTION AGAINST FROST.** The methods explored for protection against frost are :—

1. the use of chemicals
2. the use of cover
3. the use of heat

1. *Chemicals.* In this country chemicals such as common salt have been used to help thaw out frozen pitches, but all chemicals that we have dealt with harm the turf and sometimes the soil as well so that its drainage qualities are severely impaired. This applied particularly to salt. Moreover chemicals often thaw only a shallow depth and thus produce wet mud on a hard base.

2. *Cover.* As regards cover to protect against frost, canvas sheets and plastic sheets give only moderate protection and are by no means as good as straw. Straw—with its entrapped air—effectively used (before frost gets into the ground) at rates of 1 to 2 cwt. per 50 sq. yds., (i.e. 10 to 20 tons for the pitch), can be counted on to give protection against practically any frost. There is often a weed problem associated with the use of straw but a few weeds would scarcely be considered serious as compared with the state of grounds in recent weeks. The real worries with straw are :—

- i. getting suitable straw (good, stiff, clean wheat straw is best).
- ii. handling on and off the pitch (labour is difficult to obtain and machinery may damage the pitch).
- iii. handling, particularly when covered with a thick layer of snow.
- iv. storage (including fire risk).

(N.B.—Straw applied to a frozen ground keeps the frost in).

3. *Heat.* Soil warming can be more or less guaranteed to protect against any frost and the most practical warming is

electrical soil warming which has been comprehensively investigated and proved. If sufficient electricity is used it would appear that snow can also be dealt with in this way. Experience also tends to show that there may be advantages in thawing snow artificially in that it can be thawed at a controlled rate. We have been convinced for some years that soil warming is both practicable and desirable and have worked out suitable depths (6 ins.) and spacing (6-9 ins.) of wires as well as suitable electric loading.

The capital cost of a soil warming installation cannot be given except in relation to each individual job because so much of the cost lies in the possible provision of capital equipment to supply the heavy load of electricity required, i.e. of the order of 750 k.watts.

(b) **PROTECTION AGAINST RAIN.** Good drainage and good management can do much to produce dry grounds but it has seemed to us for some time that League Clubs ought to consider protection against rain with a view to reducing mud formation and the production of poor quality football pitches. We have seriously considered permanent lofty cover to the whole of the ground but naturally this is not easy to arrange practically or economically. More realistically some kind of plastic cover for the actual surface of the pitch has tremendous attraction, but here again cost, convenient handling and labour difficulties enter the picture. Plastic covers can be a nuisance when they have 6 in. of snow on them but the snow can be removed either physically or chemically.

The Sports Turf Research Institute has also reported on investigations regarding the use of covers raised from the ground on the air-house principle (Journal No. 37 and F.A. News, July, 1961).

(c) **PROTECTION AGAINST SNOW.** Covers can be useful as above. Snow

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can be removed physically from the pitch though this is usually very detrimental to the turf. The alternative of removing by chemicals has always proved damaging to the pitch so that

heat is still a useful way of getting the sort of pitch that is required.

(N.B.—Snow is itself a very good protection against frost and in frosty weather should not be too hastily removed in the absence of other protection against frost.)

REFUSE AND SLUDGE—continued.

agriculturists, etc. who might be interested in bulk purchase of up to 2,500 tons, sufficient compost being retained for local residents. It has not yet been possible to reach an agreement on this basis.

In September, 1962, the Borough Engineer requested authority to expand sales direct to the public—up to a 60 mile radius from Leatherhead, and to obtain the necessary publicity.

In the financial year to 31st March last, 849 tons were sold. During the period April to August 401 tons were sold and in September and October approximately 450 tons have been sold—a total of approximately 850 tons during the first seven months of this year. Two Leatherhead golf clubs use the compost.

In addition approximately 1,500 trial bags, holding approximately ½ cwt., have been sold in the last 2/3 months.

A chemical analysis of the compost is as follows:—

	%
Moisture	32.7
Volatile Matter (other than moisture)	18.9
Non-Volatile Matter (mineral matter)	48.4

Total nitrogen in dry solids	0.82
Phosphoric acid (P ₂ O ₅) in dry solids	0.64
Potash (K ₂ O) in dry solids	0.21
Calcium (CaO) in dry solids	2.83
pH of aqueous extract ...	7.6

It is too early to give a summary of income in relation to expenditure although the following prices are quoted by the Leatherhead Council.

	PER TON		
<i>Radius</i>	10 tons	5 tons	1 ton
5 miles	20/0	25/0	35/0
25 miles	31/0	36/0	
50 miles	39/0	44/0	

Five per cent. discount on orders from 20 to 50 tons. Special rate for Leatherhead residents: 1-3 tons at 30/0 per ton delivered.

The plant was designed and constructed by Heenan and Froud Ltd., and installed under the direction of A. F. Alexander, B.Sc., Engineer and Surveyor, Leatherhead U.D.C.

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