

CHAPTER XVII

FERTILISERS, TOP-DRESSINGS AND COMPOSTS

Stable Manure—Fertilisers for Young Grass—Established Turf—Preparing Fertilisers for Use—Top-dressings for Heavy Clay and Soft Plastic Soils—Stiffish Loams—Medium to Light Soil—Composts—How to Prepare and Use Composts.

Stable Manure

This subject has got spread about rather more than was originally intended, so a few words devoted solely to it may not be absolutely waste of printers' ink. For digging in new ground, either for sowing or turfing, there is nothing to beat Organic Manure, peat moss stable manure being the best for light soils, and well-rotted short straw stable manure for stronger soils. These should be applied at the minimum and maximum rates of one and two loads per 100 square yards.

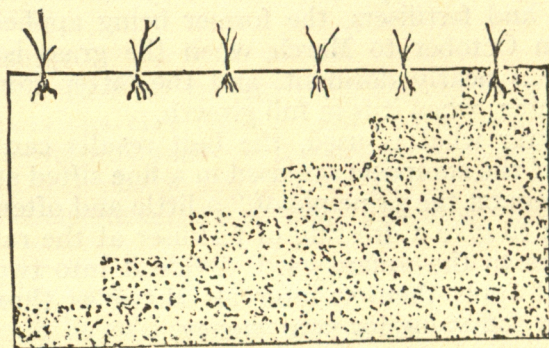
Stable manure is sometimes objected to on account of the weed and coarse grass seeds it contains, but it is surely too valuable to be discarded for this reason. The turf will have to be weeded anyhow, so a few more will make but little difference.

The manure should be spread over the surface at the rates given above and lightly forked in and mixed with the surface soil in such a way that none of it is buried deeper than 2 or 3 inches, the bulk of it remaining quite close to the surface.

Some maintain that manure, if used, should be buried at least 6 inches deep, while others hold that it should not be used at all, otherwise the grass will grow coarse and rank.

I have proved over and over again that the closer the manure is kept to the surface the better and quicker are the results, because the young grass can reach it quickly, and receive the desired help when it is most required, that is to say during the early period of its existence. If it is buried deeply it may take months for the roots to reach it, and it is quite possible, and it often happens, especially during unfavourable seasons when grass grows very slowly, for it to perish for want of manure, in spite

of the fact that plenty has been put into the ground but out of reach of the plant.



The shaded parts of the diagram represent the manure mixed with the soil varying in depth from nothing to 6 inches. Which of the little plants are likely to grow fastest and thrive best, those that have rooted straight into it, or those that have got to struggle down several inches before they reach it?

If stable manure cannot be obtained, use Carters No. 1, 2 or 3 Fertiliser, as circumstances demand, at the rate of two ounces per square yard, or 5 cwt. per acre, and rake or harrow it in during the final preparations of the surface.

Young Grass

Young grass, when in its early stages and still very tender, cannot stand anything in the way of strong fertilisers, but it can be nursed along by the use of a rich compost, Kiln Dust, Malt Culms, Carters Compound Mulch, or very light doses of artificials. Provided that the latter are mixed with at least eight times their own bulk of sifted soil or compost, and allowed to stand in a heap for a day or so to mellow, no harm can ensue.

As the success of young grass depends so much on whether it gets established quickly enough to escape damage from adverse weather, these dressings are of the utmost importance. As some greenkeepers have their own views on Fertilisers, a classified list will be found in Chapter XIX, and against each the quantity which I consider should be the maximum amount to use per square yard for various purposes, and by turning to calculation Table "A" it will be quite easy to work out quantities required for various areas.

Established Turf

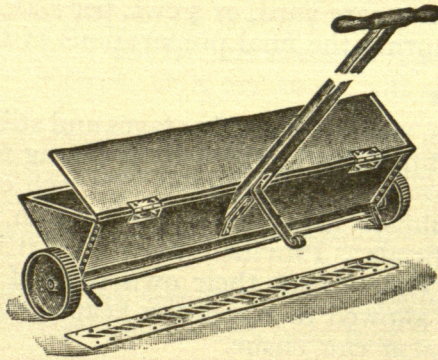
Old turf can be kept in condition by the use of suitable composts and fertilisers, the former being applied at any time from October to March, when the grass is growing slowly or is nearly dormant, and the latter from March to September, when it is in full growth.

No matter what is used, the best results can only be obtained if the composts are used in a fine sifted state, and all fertilisers on the principle of "a little and often." If it is decided to give a dressing of fertiliser at the rate of say two ounces to the square yard, divide it into two to four doses, and apply them at intervals of two or three weeks, and so get full value for your money.

If turf is slowly being killed by wear or drought, try and save it by giving it a quarter-dressing of fertiliser and water it in, and do not wait until it weakens or dies, for there is no sense or profit in that.

Preparing Fertilisers for Use

Artificial fertilisers should not be applied in their raw state, for the reason that it is difficult to spread evenly such



A GRADUATOR DISTRIBUTOR WILL BE FOUND A USEFUL TOOL FOR THE APPLICATION OF FERTILISERS, COMPOST, LIME, AND OTHER FINE MATERIALS (SEE SUPPLEMENT)

a small quantity as two ounces or less over an area of a square yard.

The best way to use them is to weigh out the quantity required for the area to be treated and mix it with sand, soil or compost in the ratio of about seven pounds of the former to a bushel of the latter.

The whole mass should then be passed through a fine sieve with the double object of completing the mixture and excluding any stones or other undesirable matter that it may contain.

Top-dressings

These are used for several purposes, such as breaking down impervious clay, with a view to the aeration of the soil and the improvement of the surface drainage ; and for firming up soft plastic soil, and so improving the playing surface and encouraging a stronger and more durable class of turf.

Heavy Clay and Soft Plastic Soils

These soils lie cold and wet during the winter, and bake and crack in the summer.

Such can be improved by dressings of sand, charcoal, or breeze (see Chapter XVIII).

These materials will cut into the clay, make it firmer, improve the surface drainage, and by so doing reduce the rapid evaporation which has such a chilling effect, and so allow the sun to function normally and warm it, and last, but not least, give the grass roots a chance to run freely and so form a dense mat.

It may not be out of place to point out here that grass will grow and thrive on all sorts of soils, and under almost every conceivable condition, provided that it is not subjected to the wear and tear of a fast game or constant use. If it is so used, a firm, porous, rich soil is demanded in which the roots can run freely and form a durable mat. In cases where turf wears out with abnormal speed, it is generally safe to assume that the soil is too hard or too soft, or else the drainage is slow or faulty, or possibly there is a deficiency in lime or grass foods.

Grass plants do not actually live on the soil ; the soil merely holds them in position, the food being obtained from its chemical constituents, which only amount to a very small percentage of the bulk.

This clearly indicates that the texture and condition of the soil has a great effect on the wearing power of turf.

Stiffish Loams

Soils of this class will respond to the same treatment, and for the same reasons, the only difference being that sand or smaller grades of charcoal or breeze should be used.

Medium to Light Soils

These do not require opening up to anything like the same extent, unless they become stagnant from over rolling, in which case a dressing of fine charcoal, sharp pit, clean river or sea sand can be used to advantage.

Composts

These valuable winter dressings should never be omitted, and if properly prepared and applied in light but frequent doses, the original soil, no matter how unsuitable it may be for carrying a strong, durable turf, can be covered and eventually reduced to the secondary position of the subsoil. This may appear difficult to believe, but if it is worked out on paper, it will be found that one cube yard of soil is sufficient to cover 150 superficial yards to a depth of close on a quarter of an inch, and by repeating the process an ever-increasing layer of artificial soil can be deposited over the original. In practice it will be found that cutting materials such as sand, breeze or charcoal will penetrate to a depth of 3 or 4 inches, whilst the compost will remain on the surface. I have seen cases where it has formed a layer over brick-earth to a measured depth of no less than $2\frac{1}{2}$ inches.

How to Prepare and Use Composts

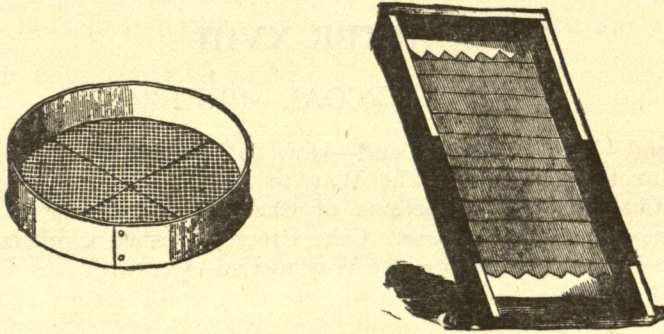
For all soils use medium to light loam, leaf mould, old rotted turf, sand, fine breeze, wood ashes, and stable manure—in fact, anything that goes to the making of a rich porous compost.

The compost should be stacked in a heap until well rotted, turning it over two or three times during the process, with the double object of a thorough mixing and of keeping it clean.

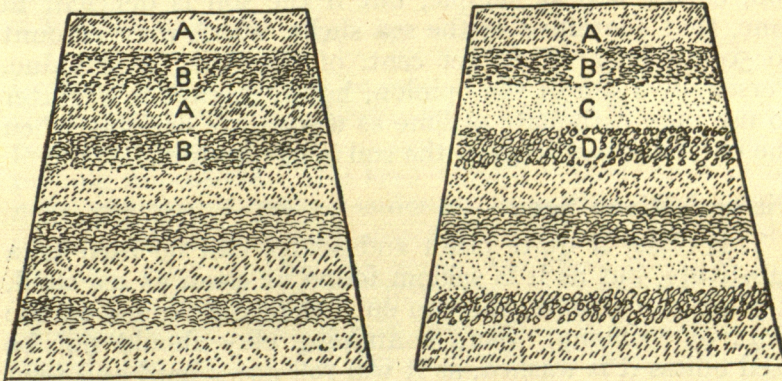
As it takes about a year to get it into a good usable condition, it is advantageous to make a two years' provision in the first instance, and when half of it is used up prepare a second stack, and so ensure a continuous supply.

When preparing for use, break down the heap or stack vertically, and pass it through a $\frac{1}{4}$ inch mesh sieve, and store it under cover until required. The compost can then be used either by itself as a winter dressing at the rate of one cube yard per 150 superficial yards, or in lighter

Spring, Summer or Autumn dressings, reinforced with a small quantity of fertiliser.



It may seem strange to recommend the same compost for all classes of soils, but it is not if one realises that its chief function is to swamp and submerge the existing soil whenever it is at all unsuitable, and to replace it by one better suited to the requirements of the turf, and to the game.



A=SOIL. B=ROTTED DUNG. C=SAND OR FINE BREEZE. D=LEAF MOULD, OLD TURF, ETC.