

No Shortage of Compost Under
This Three-Month Plan

By CLINTON K. BRADLEY, SR.

Passaic Co. Golf Course, Paterson, N. J.

MODERN golf, cultural practices and playing conditions must be turned out on a production basis, as are all other industrial enterprises. Turf wear and soil compaction from increased play make such demands on topdressing supplies that they are soon exhausted when composted by old methods.

On recently built courses, or in changing greenkeepers on a course, there is often a shortage of available compost. Greenkeepers desire to build up a good turf and make an impressive showing. The writer, having taken over both new and established courses in various parts of the country has, through necessity, worked out composting processes to meet present day requirements.

Composting consists of breaking down soil materials to the plant available stage over a period of time by the action of chemicals, bacteria, and the elements, such as light, air, water, temperature, for feeding, correcting, and replenishing basic soil conditions. Time, an important factor, can



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be reduced by supplying the other essentials in concentrates.

A three month process of preparing compost that is being successfully employed, is as follows:

Stake out a field which is not subject to flooding from higher ground, 104 ft. long by 54 ft. wide near an irrigation line accessible for working. A field that has been previously stripped of topsoil will suffice. Using the stake line as center, dig a trench 1 ft. deep and 2 ft. wide around the field, leaving a portion at the highest point not trenched, for machinery to enter. The excavated soil can be banked along the trench inside the field. Call this "field number one," and as many as needed could be laid out, each about 5,000 sq. ft.

One formula is to spread on the field a 6-in. layer (about 100 cu. yds.) of any organic material such as sod, green weeds, grass clippings, peat or muck. Then mix 250 lbs. each of superphosphate, ammonium sulphate and Aero Cyanamid, with 150 lbs. potassium muriate. Spread these 900 lbs. of chemicals over the field promptly after mixing, as it tends to heat and cake. Then cover the field with a 3 in. layer of sand, subsoil, or any suitable filler of required physical condition. Wet thoroughly and keep moist for two weeks. (About 50 cu. yds. of filler are needed for a 3 in. layer of sand over 5,000 sq. ft.)

Cultivation, Watering Must Continue for Seven Weeks

The third week allow the field to become dry enough so that layers can be cultivated with a disc harrow or one of the rotary plows now on the market. Continue cultivating and watering at least once a week for seven weeks or more. From the tenth to twelfth week, let the field dry by cultivating at least twice a week, with no more irrigation. When the compost is fairly dry and crumbly, remove it from the field and store under shelter for screening. It can be used immediately.

In the event the field is laid out on barren soil, it is well to spread at least 3 cu. yds. of manure or rich topsoil (included in the 100 cu. yds. of organics) over the organic constituent for bacterial inoculation. An area this size will yield about 100 cu. yds. of compost which, when screened, will average 75 yds. of siftings, and 25 yds. of tailings. The tailings should be placed back on the field to hold bacterial content if field is barren of topsoil; or they may be used on tees or as topsoil for construction purposes.

This compost will contain an approxi-

mate ratio 2 parts nitrogen, 1 part P_2O_5 , 1 part K_2O and sufficient calcium. It will analyze in percentage variously, according to the organics used. The best time to start laying the field is around the first of April, and count the "curing" time from April 15th to July 15th in northern states.

There need be little fear of the weed seeds which are present in the green weeds, soil or manure used, as Aero Cyanamid is toxic when applied in the stated amounts. A kerosene oil torch, burning under the soil screener, will further sterilize the soil of weed seeds, insect eggs, etc., and aids in drying so that the compost will pass through a screen of one-eighth mesh, providing curing is done exactly as stated.

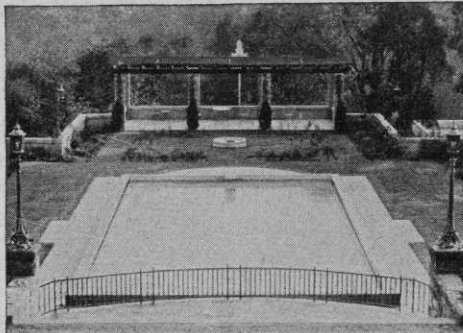
Aero Cyanamid is a trade name of the product calcium cyanamid, a synthetic carbon compound containing 22% nitrogen and 70% hydrated lime, and is produced in granular or powdered form. The terminology is used so that no mistake will be made by using calcium chloride. Aero Cyanamid is extensively used in the manufacture of commercial fertilizers as a conditioner and is commonly referred to as "nigger," due to its black color.



On the left, a plat from an unsterilized field—18 weeds of 7 species. On the right, a plat from a field chemically sterilized and flame treated during screening—one weed.

While the soil has been sterilized of viable weed seeds during the curing, grass seed germination will not be effected when the seeds are sown in the completely processed soil. Thick coated weed seeds that may withstand the sterilization will not withstand close clipping at fairway grass height of cut and will soon die. Rarely do weeds or any seeds live through the punishment of the sterilizing.

The chemical mixture used costs about \$1.50 per 100 lbs., or \$30 per ton. A yard of screened compost by this method will



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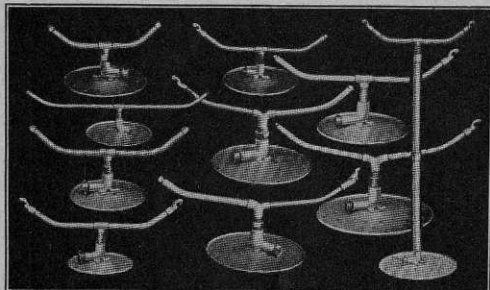
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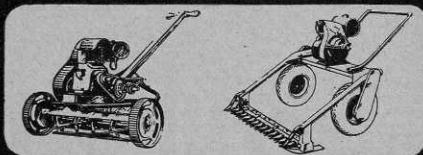
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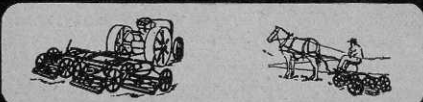
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cost between two and three dollars, with labor at fifty cents per hour. Machinery used, cost of washed sand, etc., will vary the total cost.

I use muck from a swamp bordering our course property for my organic source. I recommend that if green cover crops be grown, they be sown on unused land areas, harvested and spread on the compost field. Be careful when spreading chemicals on such a field, as they may burn foliage and kill growth.

A rotary cultivator will prevent ridging of the field, eliminate the need of running the compost through a shredder or grinder, result in less tailings, and effect a better cure due to more thorough cultivation.

It is often advantageous to use only 85 lbs. of ammonium phosphate 11-48 grade, and 200 lbs. of ammonium sulphate (total 285 lbs.) instead of 250 lbs. of superphosphate and 250 lbs. of ammonium sulphate (total 500 lbs.) This is because in some soils the superphosphate tends to revert. The ammonium phosphate, however, has a lesser calcium sulphate content.

I have adopted this formula as standard and have been working on it since 1926 with good results in Connecticut, Rhode Island, New York, and New Jersey. I have other formulas of topdressing preparations that can be used immediately, and others that need curing only 30 days. Due to the potency of these mixtures, it is safer to spread on scant. I hesitate to suggest that they be extensively used.

My personal preference for topdressing analyzes 45% sand, 45% silt, 10% clay, (Boyucos test); 10% organic matter on ignition, 30% water-holding capacity, 5% colloids, all passing through one-eighth inch mesh; and they should average chemically: N, 2%; P₂O₅, 1%; K₂O, ½%; CaO, 1½%. I strive for pH6.

HOMEOWNERS, estate, park, and golf course superintendents will have a special lawns program at the 18th annual Massachusetts Farm and Home Week, to be held at Massachusetts State College, Amherst, July 28-31. The lawns program is scheduled for July 30. Watering, fertilizing, insect control, plant food deficiencies, and control of weeds are major subjects for discussion.

Dr. H. B. Sprague, agronomist at N. J. Agric. Experiment Station; Dr. T. E. Odland, agronomist at R. I. Agric. Experiment Station; and Lawrence S. Dickinson, professor of agronomy at M. S. C. and turf management specialist, are speakers on the program.