



These leaves have decomposed into highly desirable organic matter. Enzymes developed by Judd Ringer Corp. break down cellulose and hemicellulose in the leaves. Shredder above pulverizes the humus.

## Gold Mine In Disguise

**I**F YOU THINK black gold is a term reserved for crude oil, you'd better think twice. It's now being used in conversations about leaves.

That's right. Leaves!

Since the environmental concern on pollution produced the ban on burning, leaf collection and disposal in small towns to major cities has entered the big time on most public works department's budgets. Land-fill sites are being squeezed to capa-

city with leaves. In some cities, public works officials have been forced to find additional sites for disposal. As one official wryly commented, "Everybody wants trees and leaves in the spring and summer, but nobody wants the leaves when they fall."

That problem can be licked, however. Leaves can be turned into black gold quickly and successfully, with minimum work and minimum investment. It's being done in Hennepin county, Minnesota and Maplewood, New Jersey, and this fall the Washington Park Horticulture Education Center in Cleveland plans to make black gold on it's property.

In early August, the Washington Park Center, which is part of the Cleveland Public Schools issued an all-points bulletin to the city and surrounding suburbs for leaves. The idea of someone actually wanting leaves is so radically different that more than 80 people attended a conference at the center to discover the reason why.

Their game plan is built around the need of the center for top quality fill — on the order of 200,000 to 250,000 yards — to bring about 56 acres of ground up to grade and up to useable condition. The technique involves leaves and a unique new culture which quickly and efficiently

turns leaves into valuable compost — black gold.

Composting is not new. Man has been composting plant wastes for a long time. The environmentalists and the organic enthusiasts have capitalized on this idea. But few, if any, have been able to make composting work on a massive scale. That is until recently.

Judd Ringer Corporation of Eden Prairie, Minn. has developed a batch of enzymes which can break down almost any plant waste in short order, efficiently and effectively. The enzymes can turn a pile of leaves six feet tall, eight feet wide at the base and of infinite length into valuable black gold in the space of a few months. When combined with dirt, the resulting mixture of dirt and organic matter becomes highly touted for use in lawns, gardens, potting soils and as top quality fill at the Washington Park Horticulture Education Center.

The enzymes basically throw Nature's natural method of decomposing into high gear. They speed up the action of the bacteria which attack cellulose and hemicellulose in the leaves and hasten the job of decomposing. There's nothing different about the enzymes. They are all found naturally. The only difference is that the enzymes have been hybridized.

There are four steps to success, says Don Lovness of Judd Ringer, efficient collection, planned deposition, uniform inoculation and adequate aeration. He points out that timing of leaf collection is highly important. Newly fallen leaves that are high in carbohydrates (energy)

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Skip Burkhardt of Lakeshore Equipment & Supply, Cleveland, examines the compost of leaves that's only a few weeks old.



Compost material here will be used as top soil fill for the Washington Park Center in Cleveland.



This grass was inoculated in late June. Six weeks later it is almost entirely broken down into compost. More than 80 people attended a conference in Cleveland to find out added information about leaf composting.

## GOLD MINE (from page 24)

work best. That means leaf collection crews must be on the scene to pick up leaves and drop them off at the deposition site in minimum time. The reason is that the bacteria need the energy stored in the leaf to efficiently do their work. There's nothing worse than a pile of leaves that is many weeks old, says Lovness. You can't use them, and nobody wants them.

He recommends that front-end loaders be specially equipped with many tines to aid in leaf collection. Leaves swept into streets by homeowners can be pushed to a collection area by leaf catcher blades mounted on trucks or by loaders.

Once at the deposition site leaves are dumped in long windrows. Each row is then inoculated with enzymes. One-half pound of inoculate at \$1.25 per pound is needed per ton of leaves. (A ton of leaves is about four yards in size.) Uniform inoculation is stressed. A water truck, preferably one with a centrifugal pump, then waters the leaves down. The leaves are allowed to stand for

about 10 days, after which they are turned once.

During this time, temperatures in the pile will climb to 150-160 degrees F. Bacterial action is working and much of the oxygen is being used in breaking down leaf structure into organic matter or humus. Turning the pile after 10 days puts more oxygen into the system and permits the hard working bacteria to complete their job. Within a week, the height of the pile can be reduced by a third, notes Lovness.

Site preparation is important, too. Lovness says that too much water or air are toxins to the organisms which break down the material. The site at the center in Cleveland has been considered a highly suitable location.

Doesn't decomposing vegetative matter cause objectionable odor? Judd Ringer Corporation says, "Smells from compost are the result of faulty construction." A carefully constructed compost pile will fall well within the health and sanitation code of major cities.

There is little threat of spontaneous combustion with this system of composting. First, internal tempera-

tures never reach the point where fire would result. And, Lovness says that spontaneous combustion is a reaction of volatility of various organic oils, not necessarily considered in the decomposition process.

Inside the pile, it is quite moist. The nature of leaf cells is to collect water. Newly fallen leaves are relatively high in water content. The action of the enzymes on the bacteria causes the cells to break down and release water.

When all decomposition is stopped, the black gold is ready for use. Lovness advises that best results are obtained when the compost is shredded. A shredder such as that manufactured by Lindig Mfg. Corp., Royer Foundry & Machine, Ford, Deere, W-W Grinder, Red Cross Company and others will pulverize the humus and make it workable. Combined with soil, the mixture becomes a valuable asset.

Where can you buy the enzymes? Besides the Judd Ringer Corporation of Eden Prairie, Minn., distribution includes: The Cumming Co., Inc. 531 South Avenue, Garwood, N.J.; Trius, Inc. 369 Duffy Avenue, Hicksville, N.Y.; Lakeshore Equipment and Supply Co., 10237 Berea Road, Cleveland, Ohio; The Clapper Co., 1121 Washington Street, West Newton, Mass.; and Niagara Chemicals, 1274 Plains Road E., Burlington, Ontario, Canada.

The Cleveland Public Schools system is looking forward to leaf drop this fall. Their plans are to start a massive composting "factory" as soon as the first truckload of leaves arrives. Other communities around the country may well consider this method a positive step forward to solve the problem of leaf deposition once and forever. Leaves can be a virtual gold mine in disguise. □



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## EDITORIAL (from page 6)

ioned by other employees. Neither should they be given more job responsibility just because management feels the crunch on employee hiring. Likewise, keeping the man glued to his present job without legitimate room for development and expansion will quickly cause creative death.

The talented employee needs encouragement from management in the way of company security, benefits, salary increases, bonuses, job evaluation and recognized responsibilities. Like the child who grows into a man, this individual must be nurtured by management and given opportunities commensurate with exhibited abilities.