on the same truck depending on soil conditions of the sod.

As an example, it would take about 15 loads on a 2-ton truck to transport an acre of sod, but you could transport an acre of manually loaded and rolled sod on about *10 loads,* a 33% savings in transportation costs alone!

3. **Equipment Investment**—In order to have a mechanized and palletized operation, you must have a sod harvester, 2 fork lifts and a very good supply of pallets with an initial investment of $30,000 or $40,000 compared to a manually rolled operation consisting of a sodcutter with an investment of $1,500 or $2,000.

If you deliver sod to retail stores, you must have boom trucks to unload the pallets of sod at a cost of $20,000 to $40,000 compared to a truck transporting manually rolled sod at a cost of $5,000 to $8,000.

Pallets are a very costly part of the palletizing operation. They cost from $2.00 to $4.00 each and can only be used 3 or 4 times. They are often broken and lost. Figuring in detail the cost plus the time spent on transporting, loading, moving pallets, etc., you would find that pallets cost 3 or 4 cents per square yard of soil. You do not have this cost in manually rolled sod.

The time saved in installation of sod, the convenience and the equipment costs cannot be equalled by the machanized harvesting and palletizing methods as they exist today. This is the reason that the vast majority of sod is manually rolled. I am a firm believer in mechanization and I should hope that in the very near future we can develop a system and related equipment. The labor situation is so critical today in our industry that in the next 5 years it will be absolutely imperative to cut, roll, load and install sod with machinery, because there will be no men available to do it manually.

DDT Degrades In Lakes Faster Than In Soil

DDT is much less persistent in most lake sediments than it is in soils on land, according to two University of Wisconsin water chemists.

"While DTT in terrestial soils remains for many years, in lake sediments without oxygen much of the pesticide is degraded within weeks," said Ralph C. O'Connor. "This does not mean DDT in lakes is not dangerous, for it is uncertain how much is picked up by aquatic organisms before reaching the sediments."

O'Connor, a water chemistry graduate student working with Prof. David Armstrong, announced the findings at the recent 15th Conference on Great Lakes Research. The conference, which has attracted more than 600 scientists from Canada and the United States, is sponsored by the International Association for Great Lakes Research.

The two scientists investigated the rate and extent of DDT degredation in sediments from Lake Michigan's Green Bay and three other Wisconsin lakes.

"In sediments without oxygen there are about 20 types of common bacteria able to degrade DDT," O'Connor said. "In our laboratory tests, at least 25 percent of the DDT was degraded within two weeks, and more than half degraded within two months."

The actual amounts degraded are probably even greater, he said, but since only these amounts of the breakdown product were recovered, they can be considered the minimum degraded. The fate of much of the DDT not recovered still is uncertain.

Many lake sediments are of the anerobic (without oxygen) type, particularly those found where streams empty into a lake, he noted.

Another significant difference between the degredation process in lake sediments and terrestial soils is that the breakdown product, DDD, is often less dangerous.

"While DDD is still toxic, it does not have the same long-term effects as some of the other metabolites," he said. "For example, it is not involved in reproductive failures like the egg shell thinning caused by DDE."

This study, funded by the UW Sea Grant Program, is the first quantitative measurement of DDT degredation in anerobic lake sediments.

"Until now, sediments have often been ignored in examining the fate of DDT in the environment," O'Connor pointed out. "These results, however, indicate that sediments are important and must be considered in future research."