of nodulation rated. The rating scale of nodulation used varied from 1 which was no nodulation to 10 which represented excellent nodulation. The rating of nodulation is given in Table 1. Statistical analysis of the data indicated that the molybdenum treatments significantly reduced nodulation.

Although bacterial contamination no doubt occurred which tended to offset the effect of molybdenum treatments, molybdenum compounds definitely reduced nodulation. Apparently, molybdenum compounds should not be mixed with the inoculant prior to seed treatment. The inoculant and molybdenum should be obtained separately and mixed at the time of seed treatment.

POWER CUTTER FOR LARGE UNDISTURBED SOIL CORES¹

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This note describes a cutter that has proved suitable for obtaining large, entire soil cores. It consists of a steel cylinder with saw-toothed cutting edge, rotated by a post-hole digger implement connected to a farm tractor's power takeoff (Figure 1).

Ninety undisturbed and relatively large soil cores (9 1/2 inches in diameter and 11 inches in height) were needed for a greenhouse test designed to observe pine seedling growth in various forest soils of east Texas. Conventional methods of extracting cores were considered unsuitable, because they are generally slow and produce cores that would have been too small for the purpose and difficult to transfer into containers.

The cutting head was made from a 13-inch section of steel pipe with an inside diameter of 10 inches. As the cutter was to fit tightly into a container 9 1/4 inches in diameter, the pipe's diameter had to be reduced. This was accomplished by cutting out a strip parallel with the long axis, then compressing the seams and rewelding them. One end of the cylinder was topped with a steel plate to which was welded a 30-inch length of 3-inch o.d. pipe. By this pipe, the cutter was bolted to the post-hole digger. Both inside and outside of the cutting head were machined smooth in a lathe; wall thickness was 5/32 inches. Finally, 32 cutting teeth were ground to a depth of 3/4 inch.

The procedure for extracting cores was as follows:

1. The rotating cutter was pressed vertically, to its full length, into the soil.
2. By moving the tractor forward, the cutter was tilted, breaking the base of the core loose. To extract the first core in a given locality, soil had to be dug away from the side of the cylinder facing the tractor, to permit tilting of the cutter (Figure 1). For subsequent, adjacent samples no soil had to be removed, as the cutter tilted into the place of the previously extracted core.
3. While one man lifted the cutter into horizontal position, another slipped the tight-fitting container over the bottom part.
4. By moving the tractor forward, the cutter was tilted, bringing the core into vertical position (with the attached cutter) and soil into container and soil removed from side of sample hole.

The cutter performed satisfactorily in sand, loam, and gravel soils, especially when they were relatively textured and dry soils it was advisable to undercut the core with a shovel (after step 2) to prevent losing the bottom part.

In stony soils, the stones turned with the cutter, churn ing up the sample. Similarly, tree roots sometimes caused imperfect cores. Possibly a smooth, sharp cutter with fine serrations, would have worked more satisfactorily under these conditions.

From the time the tractor was on location, 1 1/2 minutes to put a soil core into the container and soil moved on a 1 1/2-ton truck.

A COMPUTER PROGRAM FOR ANALYSIS OF FACTORIAL EXPERIMENTS

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Factorial experiments are performed in many areas of agronomic research. Processing the data from these experiments may be accomplished efficiently through the use of a suitable computer program that will allow for the analysis of the data from an experiment.