and lowered by means of a hydraulic cylinder operated from the hydraulic system of the tractor.

This harvester was used during 1955 for the harvest of several hundred forage plots on farms scattered about the Willamette Valley. No difficulties were experienced in harvesting heavy crops of subterranean clover or 3-foot tall mixtures of alfalfa and grass.

The time requirements of plot harvesting are affected by the plot yields. At one location forage averaging a ton of dry matter per acre was harvested and weighed from 45 plots by a three-man crew in an hour. The area harvested from each plot was 30 feet long and 45 inches wide. The harvester was also used to cut headlands and clip the plots to a uniform length before harvest.

The cost of parts and materials used in this harvester, exclusive of the tractor was $460. Approximately 250 man-hours of labor were used in construction.

Detailed drawings and plans for the forage harvester are available for $4.10 from Agricultural Engineering Extension, Oregon State College, Corvallis, Oregon.—G. E. PAGE, Assistant Agricultural Engineer, T. L. JACKSON, Associate Soil Scientist Conservationist and ALBERT S. HUNTER, Soil Scientist, Oregon Agricultural Experiment Station and U.S.D.A. Cooperating.

MEASURING FERTILIZER UPTAKE IN GROWING PLANTS WITH THE GEIGER COUNTER¹

A SIMPLE means for measuring the uptake of fertilizer without harvesting the plants would be a useful technique in plant nutrition studies. This can be accomplished with radio-active fertilizers.

The total activity in the above-ground portions of the plant is measured with a Geiger tube having a sensitive length about equal to or longer than the plants. Planting patterns need to be selected to minimize changes in geometry as the plant develops.

¹ Contribution from the Department of Agronomy, Purdue University, Agriculture Experiment Station, as Journal Paper No. 1024. Received September 6, 1956.

Thin-walled aluminum Geiger tubes² which can be connected easily have been found useful for 

greenhouse. Each tube has a sensitive length of three inches. Any number of tubes may be joined together, as shown in figure 1. The cathode connector is made by splitting the sidewall of brass tubing of appropriate length and diameter. A standard lead filled electrical wire connector is drilled and cut to length for the anode.

The plant sample with the assembled tubes in counting position and with the shield removed is shown in figure 2.

The sheet iron shield makes possible counting plants on greenhouse benches without moving the can.

² Nucleonic Company of America, Brooklyn 1, New York.