

The Bye-Hoe—A New Row-Crop Cultivator

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For many years the peatland farmers of the Sacramento-San Joaquin Delta region have used a "Spinner" cultivator for weeding and mulching the soil between the beet rows. In the Bye-Hoe, Byron Peters of Stockton, California, has adapted the principle of this spinner to a row-crop cultivator for use in all types of soil.

The Bye-Hoe can be attached to any conventional cultivating tractor, by mounting it in the normal position of conventional cultivating tools. Figure 1 shows the unit as adjusted to cultivate bed-planted beets with a spacing of 12 inches x 28 inches. The hoes in the center of the bed cut parallel with the ground while the hoes at the extreme outside of the beet rows are bent to fit the shoulder of the bed. The hoes are held rigidly in channels in the hub and can be changed by removing one bolt in each hoe. The entire hub, with hoes attached, is held on the 114-inch shaft with two bolts.

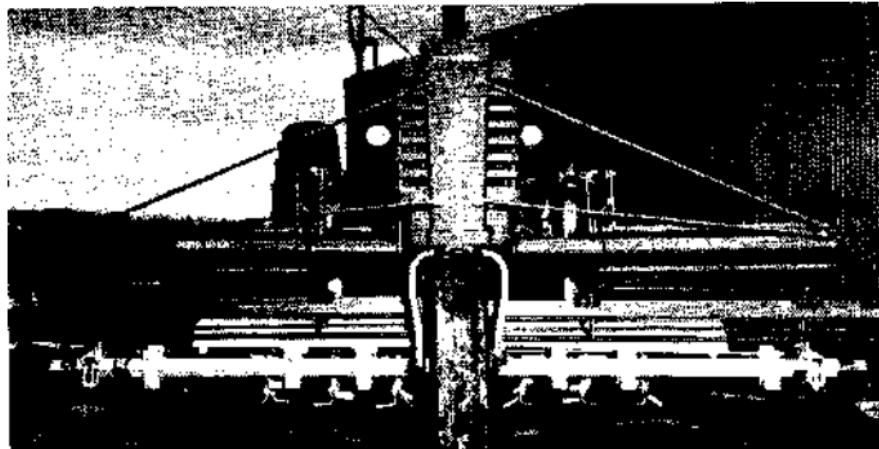


Figure 1.—A front view of the Bye-Hoe mounted beneath the tractor. Note the setting of knives to cultivate both the center and edges of beds.

The rotating cultivator assembly is power-driven from the power take-off at a rate of 50 to 150 r.p.m. The 15 inch free-turning discs are located on either side of the rotating hoe assembly. The hoes, which turn in a 14 inch diameter, will mulch the earth to a depth of six inches. Weeds and grass roots are disintegrated by the sharp, knife-edged hoes. The discs make a clean line between the cultivated ground and the narrow seedling row and protect the small seedlings. Since the seedlings are protected, cultivation can start immediately upon emergence.

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Figure 2.—The dirt has been moved away to show the narrow plant row which can be left.

The Bye-Hoe is ideal for doing pre-thinning cultivating on either flat or bed-planting. The mulched earth is replaced so that the ground surface is left smooth, with no ridges to dry out or break off. Figure 2 shows the earth pushed away to expose the narrow plant row which can be left. The machine is adjustable for width of cut and depth of mulching and can work to within 3/8 inch of the seedling row. It is adaptable to any row width or any combination of row widths.

By removing the discs and pushing the hoe units close together on the shaft, the Bye-Hoe will mulch a solid band up to three feet wide or more, depending upon the type of ground and on the ability of the tractor to furnish the necessary power. This is an excellent method of preparing the seed bed, and, by attaching the planter behind the tractor, mulching and planting can be accomplished simultaneously.

This report is presented, not as a statement of machine preference, but as a statement of a new principle in cultivation which has demonstrated application to the culture of sugar beets.