

FOREST SERVICE

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EQUIPMENT DEVELOPMENT CENTER

444 E. Bonita Avenue, San Dimas, California 91773

## ALDRIN DISPENSER

In 1964, the Nicolet NF (R-9) determined that 30 percent of one of their pine and spruce plantations had been destroyed in less than two weeks after planting. Loss was attributed to a white grub population in excess of 5 per square foot. Test plots using granular aldrin (20 percent) applied to the roots indicated excellent grub control and promoted the use of granular aldrin in areas infected with white grubs.

An earlier method employed - dipping the roots into a solution of water and aldrin - resulted in inadequate control. Another method of utilizing wet spray was discontinued because of exposure of the operator to the highly toxic spray.



Figure 1.—Prototype #1 Mounted on Lowther Planter



Figure 2.—Aldrin Distribution, 1-1/2 ounces with Prototype #1

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The Center, at the request of the Eastern Region, has designed a manually operated dispenser for applying granular aldrin directly into the planter furrow.

The unit consists of a 70-pound capacity hopper with Tygon distribution tubes leading from the hopper to the metering unit and from the meter to the outlet. (See Figure 4, page 3.) The aldrin is scattered along the berm of the trench adjacent to the planting shoe, and distribution results as the berm collapses into the furrow.

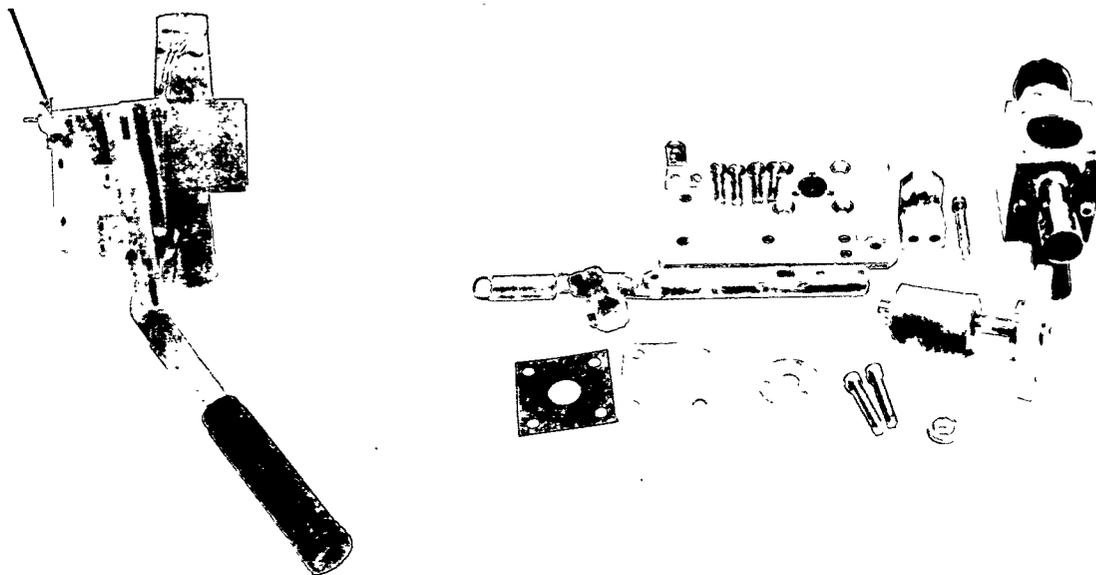


Figure 3.—Dispenser Designed for Distribution of 1/4 Ounce of Granular Aldrin

The dispenser is gravity fed, and the cam is actuated by the planter operator just prior to inserting the seedling into the planting shoe. After a few trials, the operator establishes a rhythm which results in placement of the seedling in the approximate center of the 12- to 16-inch aldrin-treated areas.

Because of the highly corrosive effect of the aldrin, all exposed parts of the dispenser are made of stainless steel. The rotating drum, which has a capacity of approximately 1/4 ounce, is sealed to eliminate the influence of moisture.

Two other release methods were tried, a foot pedal and cable release and an electric solenoid with foot-operated switch. Neither was as convenient or economical as the hand-operated unit.

In an endurance test of 500,000 cycles at the Center, the only failure encountered was breakage of four of the return springs, a relatively inexpensive item requiring less than a minute to replace (see arrow, Figure 3).

The finalized design permits mounting the hopper outside of the canopy to prevent spillage and dust from coming in contact with the operator. The mounting can be adapted to fit all planter designs. If installation of the dispenser is to be made on the Forestland Tree Planter a modification is required in order to coordinate the aldrin release with the mechanical tree setter.

Although studies have not definitely established the effectiveness of distribution and quantity required, the availability of 5 to 40 percent formulation of granular aldrin and the ability to enlarge or decrease the dispenser capacity appear adequate to meet any future determination.

Drawings and specifications are now available from the Center.

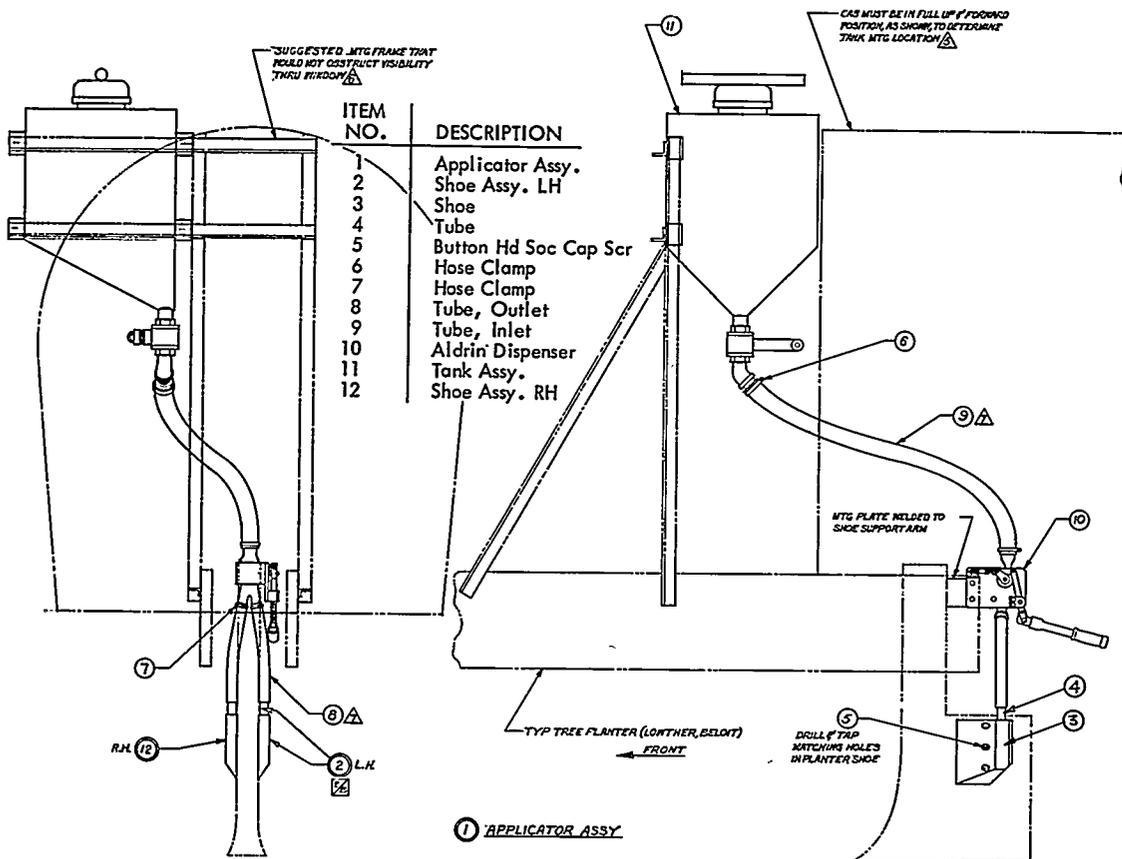


Figure 4.—Insecticide Applicator Assembly

