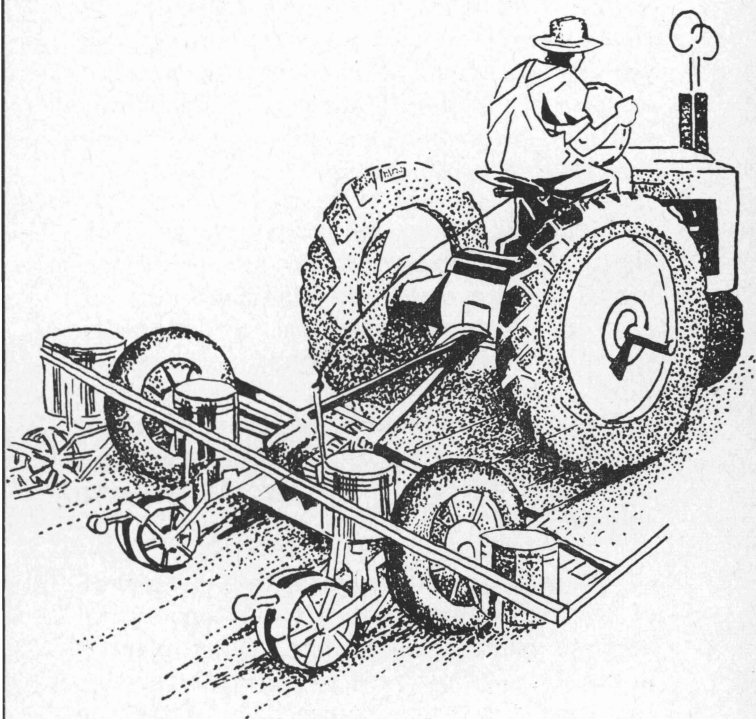


Calibration of Planting and Fertilizing Equipment in Cotton Production



TEXAS AGRICULTURAL EXTENSION SERVICE

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Careful calibration of planting equipment can help to insure proper plant population and avoid seed waste for cotton producers. The recommended plant population for efficient mechanical harvesting is 40,000 to 50,000 plants per acre. This is an average of three to four plants per foot of row. This relatively heavy plant population helps to reduce branching of the cotton plant and tends to raise the lower fruiting branches higher from the ground line. Usually, 18 to 24 pounds of good quality planting seed per acre will insure this stand when planted under normal conditions. A 40-inch row width is recommended where mechanical harvesters are to be used.

Before starting the planter in the field, the planting equipment can be calibrated easily for correct seed distribution. Set planter plates and/or sprockets and gears to deliver recommended poundage or whatever poundage you want. Tape off and stake the given distance for the row width to be used. The distances given represent 1/100 acre per row for the respective row widths.

Cover bottom of hopper with 2 to 3 inches of seed and lower powerlift only enough to activate planter mechanism. Start planter in motion to allow seed to begin flowing by the time the stake is reached. Attach a small, heavy paper bag to spout to catch seed directly from the hopper. Weigh seed caught

TABLE 1. TRAVEL DISTANCES REQUIRED FOR 1/100-ACRE ROW MEASUREMENT

| If rows are this width | Measure this distance |
|------------------------|-----------------------|
| 36 inches | 145 feet |
| 38 inches | 137½ feet |
| 40 inches | 131 feet |
| 42 inches | 124½ feet |

during required distance of travel (Table 1) to determine the amount distributed (Table 2). To convert to poundage per acre, multiply by 100. Planter mechanism can be adjusted for desired poundage. Hoppers should be individually calibrated. This is particularly important where multirow equipment is used. It may be desirable to allow some seed to fall to the ground after calibration has been completed to actually observe the seed pattern on the ground. Allowance should be made for seed with germination below 70 percent. It is de-

TABLE 2. CONVERSION OF SEED CAUGHT TO POUNDS SEED PLANTED PER ACRE

| Weight of seed caught per hopper, ounces (for distance given in Table 1) | Amount planted per acre, pounds |
|--|---------------------------------|
| 1 | 6¼ |
| 2 | 12½ |
| 3 | 18¾ |
| 4 | 25 |
| 5 | 31¼ |
| 6 | 37½ |

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TABLE 3. CONVERSION OF FERTILIZER CAUGHT TO POUNDS FERTILIZER APPLIED PER ACRE

| Weight of fertilizer collected per hopper (for distance given in Table 1) | Total material applied per acre |
|---|---------------------------------|
| 4 ounces | 25 pounds |
| 8 ounces | 50 pounds |
| 12 ounces | 75 pounds |
| 1 pound | 100 pounds |
| 1¼ pounds | 125 pounds |
| 1½ pounds | 150 pounds |

sirable to increase planting poundage accordingly for seed with germination percentage below 70 percent to obtain a good stand.

Fertilizer machines can be calibrated in a similar manner. Use distance given for the respective row width to be used. Machines that distribute solid type commercial fertilizers are applicable. In like manner, set fertilizer control gate or hopper openings to poundage you want. Start mechanism in motion and collect fertilizer from spout during the required distance of travel (Table 1). Weigh amount collected to determine amount distributed (Table 3). Fertilizer mechanism can be adjusted for desired poundage. Hoppers should be calibrated separately.

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