

the piece of equipment (10 years in each case). From this, annual depreciation per hour for each item can easily be computed by dividing annual depreciation by annual hours of usage. For the last component of total fixed cost, an average investment in each piece of equipment equal to 50 percent of its new cost is assumed. The resulting value, multiplied by the assumed interest rate of .08, yields the annual interest charge. Interest charge per hour is then derived by dividing by total hours of usage. Having computed the four preceding components on a per hour basis, their sum is calculated to arrive at total fixed cost per hour (Table 4).

Variable Cost

The components of total variable cost per hour will now be considered. It is also made up of four components — fuel cost per hour, oil cost per hour, grease and hydraulic oil cost per hour, and repair cost per hour.

First, fuel cost per hour will be examined. These costs were derived through use of an equation [1] that gives average gasoline consumption in gallons per hour as follows:

$$\text{Average gasoline consumption (in gals./hr)} = 0.06 \times (\text{PTO h.p. Max})$$

That is, average gasoline consumption per hour is equal to .06 times the maximum PTO⁴ horsepower. On items where PTO horsepower was not known or was not given, an estimate was derived from discussions with knowledgeable people or from the values of engine or drawbar horsepower available. However, all equipment except the pickup, listed in this analysis, consume diesel fuel, which is 27 percent more efficient than gasoline. Therefore, the gallons per hour figure derived from the above equation should be multiplied by .73 to arrive at the more correct figure. Once gallons per hour consumed are known, price data can be utilized to derive the cost per hour.

The other components of total variable cost were derived through the use of suggestions contained in a Kansas State University report [3]. An oil utilization rate of one-half gallon per day was assumed. The price of one-half gallon divided by nine gives the oil cost per hour. Also, annual cost for grease and hydraulic oil was assumed to be .3 percent of initial cost for expensive machinery and .5 percent of initial cost for field machinery. These percentages include labor. Once the annual cost of repairs is obtained, the cost per hour can be derived by dividing by the annual hours of usage.

Revenue and Costs

Revenue

Revenue values were generated on the basis of a production level of 40 tons of sugarcane per acre and a sugar yield of 10.3 percent. This yield corresponds to 2.06 hundredweights of sugar per short ton

⁴Power take-off.