

SOLANCO FFA students this winter have been busy with a building project to enlarge their quarters at the school. The result is this building, which used to store machinery and equipment and to spray

paint when the weather gets warmer. The spreader in the foreground is one that the students assembled as part of their machinery projects. (LF Photo)

Eight Mathematical Steps Show You How Much to Pay for Land

Eight mathematical steps can show farmers how to answer the question: How much can I pay per acre for more land? This formula developed by USDA researchers, will determine annual rent or purchase price.

ARS agricultural economist V. L. Hurlburt devised an analytical procedure using information from individual farm account books. If successful farming practices are followed and if there is no over or under investing, an operator may use annual costs and returns obtained from his personal business records.

Value of present land and buildings must be estimated before figuring the maximum price that should be paid for additional acreage. Let's assume the farm has 190 acres used for rotation crops and 10 acres of building lots, waste and roads, or a total of 200 acres valued at \$45,000 at prevailing market prices.

To determine actual crop costs and returns, crop and livestock enterprises should be separated on paper. Labor, machinery and other costs represented in both livestock and crop production should be included as part of crop operations. Then these eight steps can be followed to determine what the operator can afford to spend for renting or purchasing extra land.

1. Add values of all crops produced during year. Pasture may be figured at hay equivalent. Let's assume the value of all crops is \$12,656.

2. Obtain average value of produce per acre. Divide the value of crops (\$12,656) by the number of rotation acres (190), omitting roads, building lots and waste. The answer (\$66.61) is also the estimate of additional returns from adding one equally productive acre. Adjust for any wide dif-

ference in soil type or topography between present and contemplated land.

3. Add variable costs of crop production. Estimated cost of operator and family's labor is added if this is not already in the accounts. Add costs of farming practices assuming the same system is to be used regarding rotation, seeding, fertilization, cultivation, and cropping. (Fixed costs are ignored.) Let's say variable costs total \$4,360.

4. Obtain average variable cost per acre. Divide total variable costs (\$4,360) by number of rotation acres (190) to find variable cost per acre (\$22.95).

5. Estimate annual cost per acre of added land. Divide current market value of land and buildings (\$45,000) by total number of acres (200). The answer (\$225) is the market value per acre. To reduce the per-acre value to annual cost, add one per cent to the farm mortgage interest rate and multiply the result by market value per acre (one per cent plus five per cent, times \$225 acre).

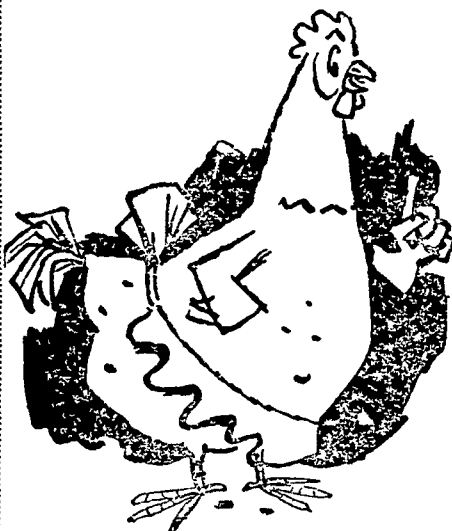
6. Determine rate of return on each dollar invested. Add the cost of the land per acre (\$13.50) to the variable costs per acre (\$22.95). Divide this total cost (\$36.45) into the average value of the product per acre (\$66.61) to determine the rate of return on each dollar invested. The answer is \$1.827.

7. Determine maximum annual rent—that is, rate of return on each additional acre. Multiply the cost of the land per acre per year (\$13.50) by the dollar rate of return (\$1.827). The most rent this operator can afford to pay for additional land is (\$24.66) per acre annually, assuming the returns will be the same as for present acre. Adjust for any wide dif-

(Continued on page fourteen)

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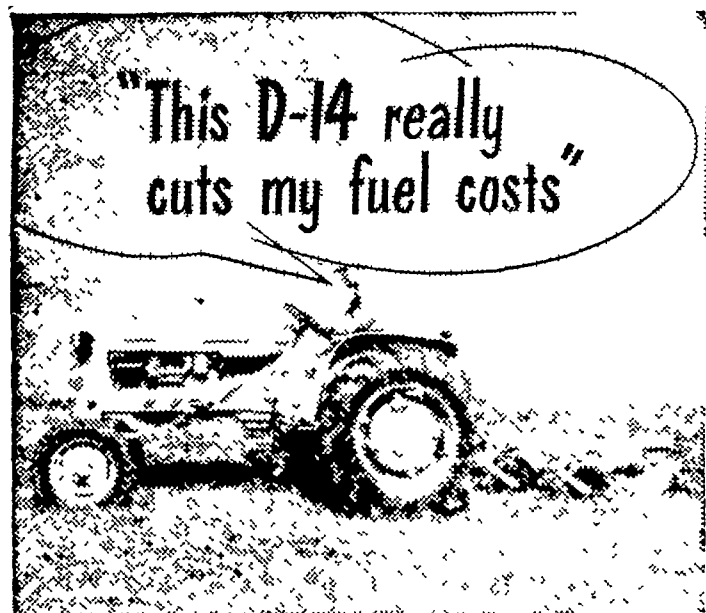


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