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CROP BUDGETS
MAJOR VEGETABLE GROWING AREAS
TEXAS HIGH PLAINS

BY

T. M. BELL
B. G. FREEMAN
D. L. TRUE
G. B. FISH

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CROP BUDGETS, FINE-TEXTURED SOILS, TEXAS HIGH PLAINS ¹

T. M. BELL, B. G. FREEMAN, D. L. TRUE AND G. B. FISH *

Introduction

The purpose of this publication is to furnish a guide to preliminary estimates of alternative crop enterprise profitability. Since prices, costs, yields and input data will vary within the study area, individual decision-makers may find that data adjustments will present a more realistic picture for the individual farm situation.

* Respectively, Associate Professor, Assistant Professor and Research Assistants, Department of Agricultural Economics, Texas Tech University.

¹ This report represents the modification and updating of vegetable and field crop budgets contained in Expected Production Requirements, Costs and Returns for Vegetables and Major Field Crops, Large Irrigated Farms, Typical Management, Fine-Textured Soils, Texas High Plains, College of Agricultural Sciences Publication No. T-1-128, Texas Tech University, Lubbock, Texas by L. D. Searsy, T. M. Bell, and J. W. Graves, 1974.

Study Area

The study area shown by Figure 1 was delineated by soil type and areas of current vegetable production. Sixty percent of the area is composed of fine-textured soils of the Pullman and Olton series, and forty percent is composed of medium-textured soils primarily of the Acuff and Amarillo series.²

Swisher county and Randall county (which borders Deaf Smith to the east) were excluded from the study area because of the small amount of vegetable production and the lack of any packing sheds within the counties. The northeast corner of Deaf Smith county was excluded since this is largely dryland wheat and range land. Portions of Hale and Floyd counties were excluded because the area is dryland due to crustaceous formations. The unmarked area extending across Lamb county is uncultivated, non-irrigated land of the sandhill area.

The counties within the study area have comparable annual rainfall and to a lesser extent a comparable growing season. Average annual rainfall ranges from 17.22 inches in Lamb County to 20.18 inches in Floyd County. The growing season ranges from 183 days in Parmer County to 213 days in Floyd County.³

The water resource situation varies widely within the study area due largely to widely varying static water levels, the saturated thickness and the depth of the saturated thickness. Figure 2 depicts the

²B. L. Allen, Professor, Department of Agronomy, Texas Tech University, Personal Interview, 1975

³The Dallas Morning News, Texas Almanac and State Industrial Guide 1974-75, (Dallas: A. H. Belo Corporation) pp. 273-346.

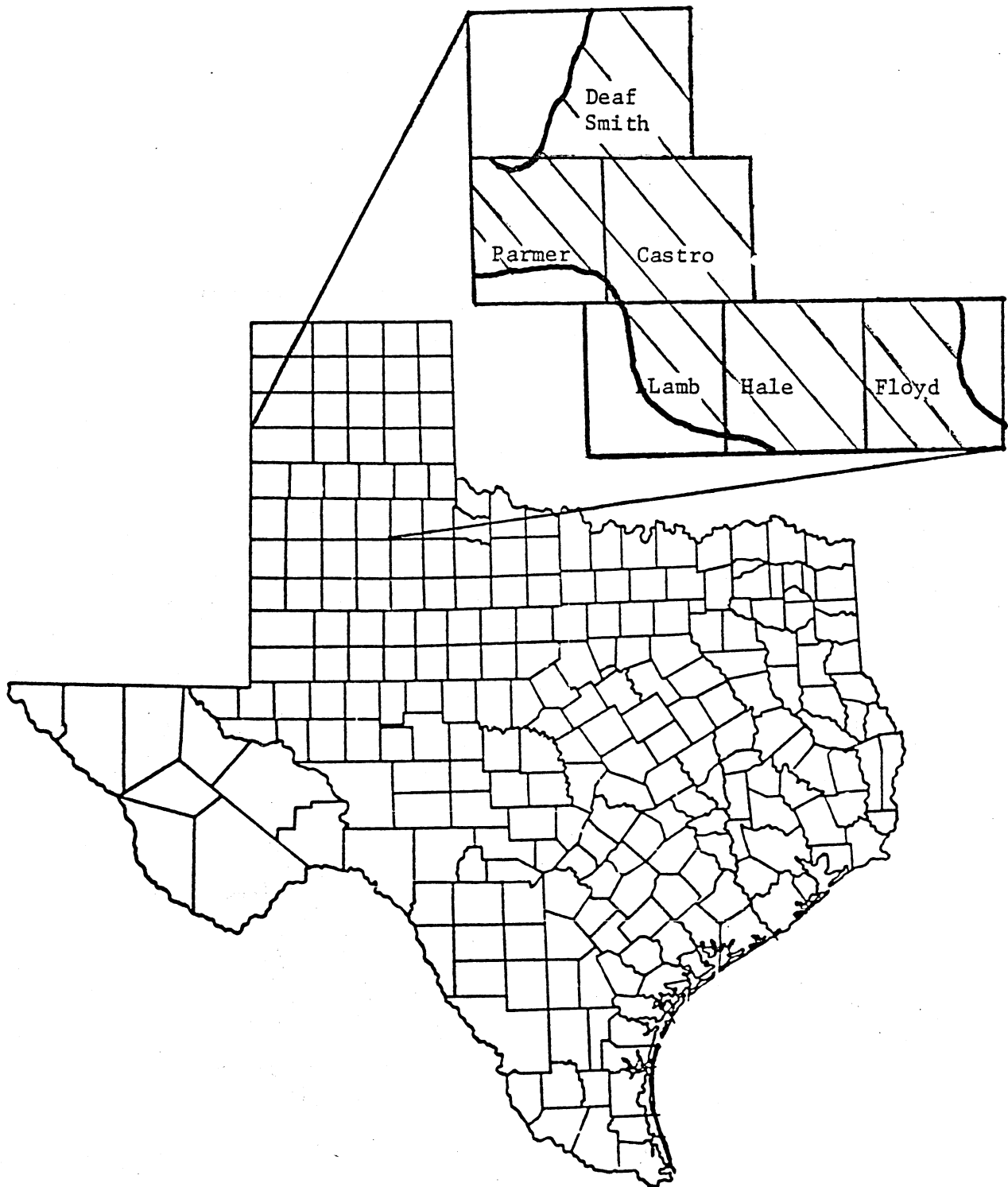


Figure 1. Study Area, Fine-Textured Soils, Texas High Plains II.

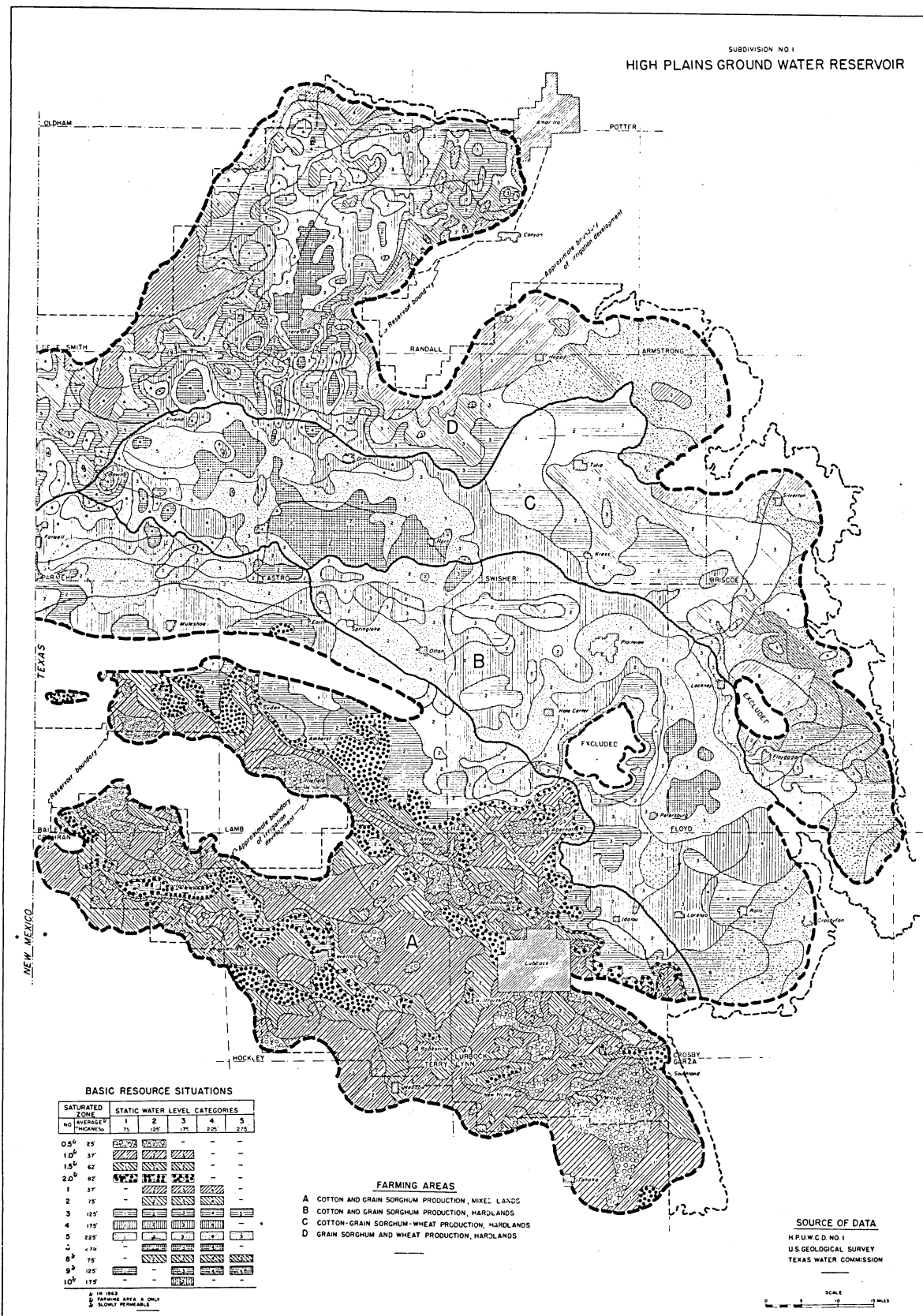


Figure 2. Resource Use Situation.

SOURCE: Technical Monograph 6, December 1969, Projected Economic Life of Water Resources, Subdivision Number 1, High Plains Underground Water Reservoir, Texas A&M University TAES, Williams Hughes and W. L. Harman.

various basic water situations of the High Plains and the average saturated thickness of the aquifer as of 1963 which has declined since then but it does give an indication of the diversified water use situations.

In 1973 the study area produced 509,400 acres of cotton, 455,600 acres of wheat, 916,800 acres of sorghum, 249,200 acres of corn for grain, 39,500 acres of corn for silage, 103,300 acres of soybeans, and 24,200 acres of vegetables.⁴ Of 2,416,559 total acres of crops in the study area, 2,082,950 were irrigated in 1973⁵. Generalized areas of production on the Texas High Plains are shown in Figure 3.

Study Farm

A model farm size of 1,150 irrigated acres was assumed.⁶ No dryland cotton acreage was considered. This study assumes that the average farm size has not changed since 1972. The definition of a farm used is the amount of land operated by the farmer and may be scattered over a given area rather than being in one block.

The prices used for planting seed, custom rates, chemical spraying, fuel, lubricants, fertilizer, labor, land, hail insurance, and interest on capital requirements are listed in Table 29.

⁴Texas Crop and Lstk. Rep. Service, Compiler, 1973 Texas County Statistics (Austin: 1972)

⁵Leon New, Compiler, 1972 High Plains Irrigation Survey (Lubbock: Texas Agriculture Extension Service) p. 17.

⁶Texas Agricultural Extension Service, 1972 Crop Budgets, Texas A & M 1972.

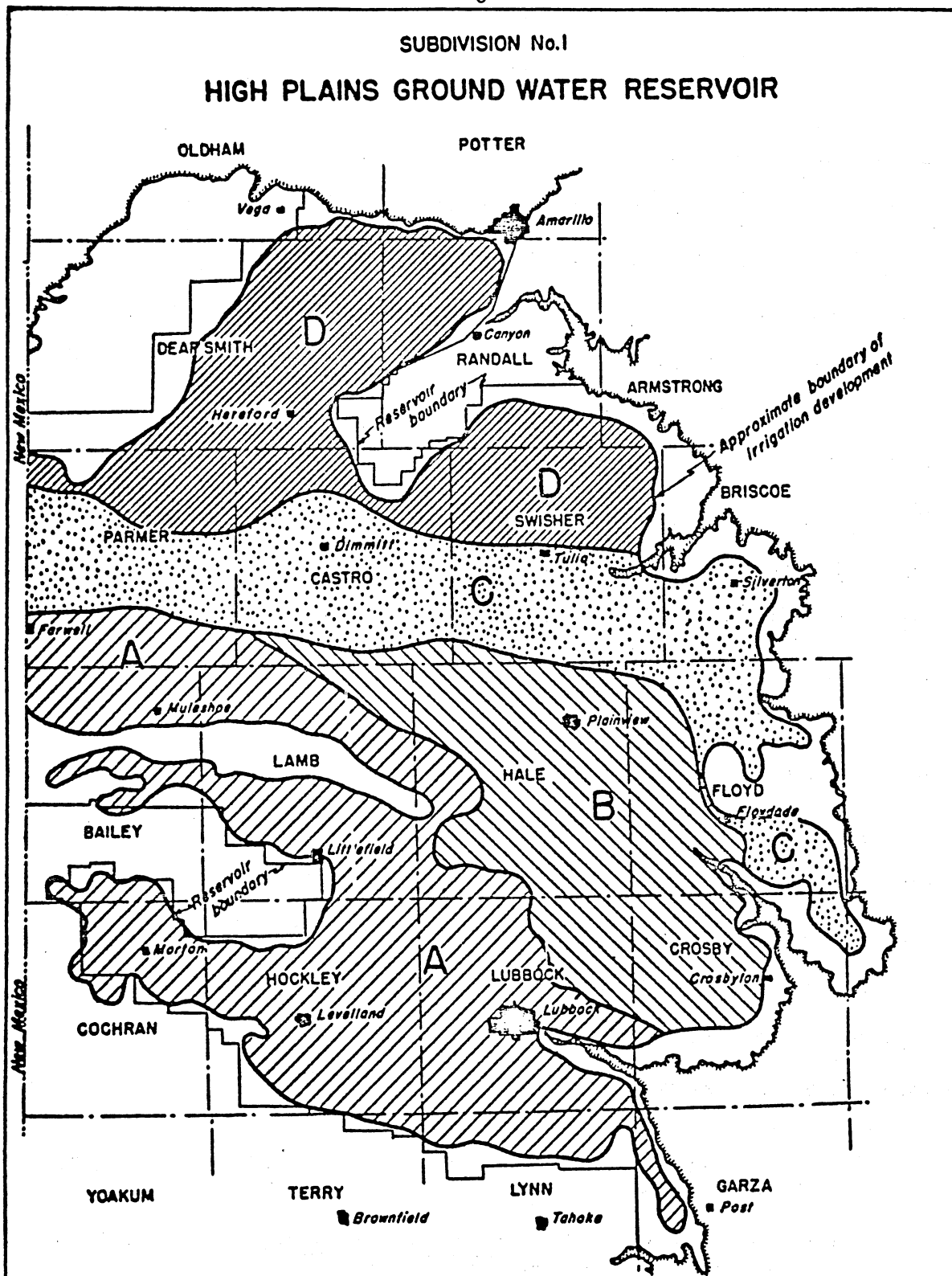


Figure 3. Texas High Plains Water Reservoir, Subdivision No. 1¹

SOURCE: W. F. Hughes and A. C. Magee "Some Effects of Adjusting to a Changing Water Supply, Texas High Plains," Texas Agricultural Experiment Station, Bulletin 966, October 1960, p. 8.

¹Farming Areas : A. Cotton-grain sorghum, mixed land; B. Cotton-grain sorghum, heavy land; C. Cotton-grain sorghum-wheat; D. Grain sorghum-wheat.

Table 31 shows the assumed prices received by farmers for cotton, cottonseed, grains, hay, ensilage, pasture grazing, soybeans, sugar-beets and vegetables.

Table 32 shows the item number, new cost, estimated years until obsolete, estimated typical years of use, estimated hours of use to wear-out, estimated annual use in hours, trade-in value, total depreciation over years of use, total accumulated repairs for years of use, annual repair cost, and the total accumulated repairs equation number used.

Fixed costs per hour and the fuel, oil, lubrication, and repair costs per hour of use are shown in Table 33.

The yields use in constructing the budgets are listed in Table 34 and with the exception of vegetables were obtained from yields used in 1972 Crop Budgets⁷ developed by the Texas Agricultural Extension Service. Production records of area farmers and processors were used to obtain vegetable yields and irrigation rates. Irrigation rates for row crops were obtained from 1972 Crop Budgets.

The well depth of 265 feet and depth to static water of 180 feet was assumed based on data from 319 observation wells in the study area.⁸

The amount of underground pipe per well was estimated to be .29 miles per well. This estimate was computed from total miles of under-

⁷Ibid.

⁸Wayne Wyatt, Report 121, Water Level Data From Observation Wells in The Southern High Plains of Texas (Austin, Texas: Texas Water Development Board [1970]), pp. 67-78, 119-133, 143-161, 187-203, 231-245, 299-309.

ground pipe in the study area (6987 miles) divided by 23,910 irrigation wells.⁹ Well yield was assumed to be 600 GPM which is consistent with the water resource situation. Table 35 is a worksheet using the above information listing new cost, estimated years until obsolete, estimated hours of use to wear-out, total depreciation, fixed costs per hour and fuel, oil, lubrication and repair cost per hour. It may be used as a guide for the individual farm situation to determine hourly and per acre-inch costs.

Table 36 lists the fixed cost and the fuel, oil, lubrication and repair cost per acre inch. Data and calculations used are explained in Table 35.

The B series of Tables 1-14 list the detailed field operations with the resultant fixed and variable costs per acre. The A series Tables 1-14 utilize this information and information contained in Tables 29-36 to arrive at the estimated cost and returns per acre.

Since farm operations may differ substantially, or prices may vary, the detailed machinery cost worksheets used to construct Tables 32 and 33 are included as Tables 37-54 in Section D.

The concept of a cash flow within a farm firm is vital to the understanding of financial management. Because the firm needs cash to pay bills, the focus of interest is on the cash reservoir--the cash balance. Into this reservoir cash flows intermittently from borrowings. These are external sources of cash. The second source of cash inflow into the cash reservoir is internal, that is, from cash sales and collections of account receivable.

There are also intermittent flows of cash from the reservoir to parties outside of the business for interest, income taxes, repayment of debt, etc. At various intervals cash may also be used for firm growth

⁹New 1972 High Plains Irrigation Survey, pp. 6-9.

and, of course, for normal operating expenses within the firm. The forms necessary to generate the cash flow are given by Tables 15-28.

SECTION A

Table 1A. Estimated Cost and Returns Per Acre, Irish Potatoes,
Typical Management, Texas High Plains II, Fine-Textured
Soils.

Item	Unit	Price or Cost/Unit	Quantity	Value or Cost
Gross Receipts:				
Potatoes (graded and packed)	cwt.	\$ 6.00	200.0	\$ 1200.00
Variable Costs:				
Pre-Harvest:				
Seed	cwt.	8.00	15.00	140.00
Fertilizer (150-150-0)	ac.	84.00	1.0	84.00
Herbicide	pt.	3.25	1.5	4.88
Insecticide (custom)	ac.	2.43	1.0	2.43
Machinery	ac.	4.26	1.0	4.26
Tractor (1)	hr.	3.71	2.78	10.31
Tractor (2)	hr.	2.87	1.09	3.13
Irrigation Mach.	ac.	14.20	1.0	14.20
Labor, Tractor, and Mach.	hr.	2.50	4.98	12.45
Labor, Irrigation	hr.	2.00	3.39	6.78
Labor, Hoeing	hr.	2.25	6.0	13.50
Pickup and Misc.	ac.	5.00	1.0	5.00
Interest on Op. Cap.	\$	.095	150.47	14.29
Subtotal, Pre-Harvest				\$ 315.23
Harvest:				
Custom Harvest (includes haul)	cwt.	.48	240.0 ¹	115.20
Handling, grading, inspection, bags.	cwt.	1.75	200.0	350.00
Subtotal, Harvest				\$ 465.20
Total Variable Costs				\$ 780.43
Income Above Variable Costs				\$ 419.57
Fixed Costs				
Machinery	ac.	10.76	1.0	10.76
Tractor (1)	hr.	3.58	2.78	9.95
Tractor (2)	hr.	2.14	1.09	2.33
Irrigation	ac.	11.53	1.0	11.53
Land (net rent) ²	ac.	230.78	1.0	230.78

Table 1A. (continued)

Item	Unit	Price or Cost/Unit	Quantity	Value or Cost
Total Fixed Costs				\$ 265.35
Total Costs				\$1045.78
Net Returns				\$ 154.22

¹ 240 cwt. field weight, 20% grade out

² 1/5 of Gross Receipts less 80% of fixed irrigation costs

Table 1B. Estimated Costs and Requirements Per Acre, Irish Potatoes, Typical Management, Texas High Plains II, Fine-Textured Soils

Operation	Item No.	Date	Times Over	Labor ¹ Hours	Tractor or Machine Hours	Fuel, Oil, Lub., Rep., Per Acre	Fixed Costs Per Acre
Tandem Disc	2-10	Aug-Sept ²	1	.25	.20	.24	.44
Plow, Bust	1-5	Sept-Nov	1	.41	.33	.44	.81
Float	2-7	Dec-Feb	2	.63	.50	.27	2.18
List & Fertilize	1-9	Mar-Apr	1	.25	.20	.20	.67
Chisel Bed	1-6	Mar-Apr	1	.31	.25	.24	.43
Plant ³	1	Mar-Apr	1	2.64*	2.00	2.66	5.88
Fertilize	2	Mar-Apr	1	.13	.10		
Cultivate & Apply Herbicide	2-3-15	Apr-May	1	.16	.13	.15	.25
Water Furrow	2-14	June	1	.20	.16	.06	.10
TOTALS				4.98	3.87	4.26	10.76
Labor, Hoeing	Hand	May-July	2	6.0			
Irrigation ⁴							
Preplant ⁴		Jan-March	1.5	1.13		4.73	3.84
Postplant ⁴		Apr-July	6	2.27		9.47	7.69
TOTALS				3.39		14.20	11.53

¹ Labor hours calculated at 1.25 times tractor hours except where denoted by *

² Date depends on previous crop

³ Estimated, 2-row potato planter

⁴ 6 acre-inches at preplant and 3 acre-inches at each postplant

Table 2A. Estimated Cost and Returns Per Acre, Cucumbers, Texas High Plains II, Fine-Textured Soils.

Item	Unit	Price or Cost/Unit	Quantity	Value or Cost
Gross Receipts:				
Cucumbers (Pickling)	cwt.	\$ 3.50	200.0 ¹	\$ 700.00
Variable Costs:				
Pre-Harvest:				
Seed	1b.	8.00 ²	2.0	16.00
Fertilizer (100-90-30)	ac.	61.60	1.0	61.60
Herbicide	pt.	3.25	.5	1.63
Bee Hive	hive	6.00	1.5	9.00
Machinery	ac.	2.45	1.0	2.45
Tractor (1)	hr.	3.71	.97	3.60
Tractor (2)	hr.	2.87	1.42	4.08
Irrigation Machinery	ac.	6.32	1.0	6.32
Labor, Tractor & Mach.	hr.	2.50	2.99	7.48
Labor, Irrigation	hr.	2.00	1.52	3.04
Hoing, Pickup & Misc	ac.	11.75	1.0	11.75
Interest on Op. Cap.	\$	.095	63.48	6.03
Subtotal, Pre-Harvest				\$ 132.98
Harvest:				
Labor ³				\$ 420.00
Total Variable Costs				\$ 552.98
Income Above Variable Costs				\$ 147.02
Fixed Costs:				
Machinery	ac.	6.90	1.0	6.90
Tractor (1)	hr.	3.58	.97	3.47
Tractor (2)	hr.	2.14	1.42	3.04
Irrigation	ac.	5.12	1.0	5.12
Land (Net Rent) ⁴	ac.	47.51	1.0	47.51
Total Fixed Costs				\$ 66.04
Total Costs				\$ 619.02
Net Returns				\$ 80.98

¹ Yield depends on labor availability, 200 cwt. yield is at full labor force.

² These costs vary considerably depending on open pollinated or hybrid varieties.

³ Labor cost is 60% of Gross Receipts. This cost along with production cost may vary between pickling and slicer crops.

⁴ 1/5 of Gross Receipts after labor is taken out, and less 80% of irrigation fixed costs.

Table 2B. Estimated Cost and Requirement Per Acre, Cucumbers, Texas High Plains II, Fine-Textured Soils.

Operation	Item No.	Date	Times Over	Labor Hours (1)	Tractor or Machine Hours (1)	Fuel, Oil, Lub., Rep., Per Acre	Fixed Costs Per Acre
Shred and Disc	1-16-10	Dec	1	.20	.16	.29	.90
Chisel	1-6	Dec	1	.25	.20	.19	.35
Offset Disc	1-11	Feb	1	.31	.25	.45	.83
Float	2-7	Mar	2	.63	.50	.27	2.18
Apply and Incorporate Herbicide	2-15-10	Mar	1	.50	.40	.59	1.04
Fertilize	2	Mar	1	.13	.10		
List and Fertilize	1-9	Mar	1	.25	.20	.20	.67
Cultivate	2-3	Mar	1	.16	.13	.15	.28
Plant	1-8	Mar	1	.20	.16	.10	.27
Cultivate	2-3	June	1	.16	.13	.15	.28
Water Furrow	2-14	June	1	.20	.16	.06	.10
TOTALS				2.99	2.39	2.45	6.90
Hoeing	Hand	June		3			
Irrigation:							
Preplant (2)		Mar	1	.38		1.58	1.28
Postplant		Apr-July	3	1.14		4.74	3.84
TOTALS				1.52		6.32	5.12

¹Labor hours calculated at 1.25 times tractor hours

²3 acre inches at each preplant and at each postplant

Table 3A. Estimated Cost and Returns Per Acre, Carrots, Irrigated,
Typical Management, Texas High Plains II, Fine-Textured Soils.

Item	Unit	Price or Cost/Unit	Quantity	Value or Cost
Gross Receipts:				
Carrots (cleaned) ¹	tons	\$ 30.00	8.0	\$ 240.00
Variable Costs:				
Seed	lbs.	5.00	2.5	12.50
Fertilizer (80-40-0)	ac.	33.60	1	33.60
Herbicide	pt.	3.25	1.5	4.88
Machinery	ac.	2.52	1.0	2.52
Tractor (1)	hr.	3.71	1.34	4.97
Tractor (2)	hr.	2.87	1.42	4.08
Irrigation Machinery	ac.	13.68	1.0	13.68
Labor, Tractor & Mach.	hr.	2.50	3.70	9.25
Labor, Irrigation	hr.	2.00	3.28	6.56
Labor, Hoeing	hr.	2.25	1.0	2.25
Pickup, Miscellaneous	ac.	5.00	1.0	5.00
Interest on Op. Cap.	\$	.095	49.65	4.72
Total Variable Costs				\$ 104.01
Income Above Variable Costs				\$ 135.99
Fixed Costs:				
Machinery	ac.	6.93	1.0	6.93
Tractor (1)	hr.	3.58	.94	4.80
Tractor (2)	hr.	2.14	1.92	3.04
Irrigation	ac.	11.10	1.0	11.10
Land (net rent) ²	ac.	39.12	1.0	39.12
Total Fixed Costs				\$ 64.99
Total Costs ³				\$ 169.00
Net Returns				\$ 71.00

¹Net field price (Priced in the field with no harvest cost to producer) for processing.

²1/5 of Gross Receipts less 80% of irrigation fixed costs.

³If this crop is grown for fresh markets, costs, varieties, production processes, etc. vary considerably.

Table 3B. Estimated Cost and Requirement Per Acre, Carrots, Irrigated, Typical Management, Texas High Plains II, Fine-Textured Soils.

Operation	Item No.	Date	Times Over	Labor Hours ¹	Tractor or Machine Hours ¹	Fuel, Oil, Lub., Rep., Per Acre	Fixed Costs Per Acre
Plow	1-5	Jan	1	.41	.33	.44	.81
Tandem Disc	1-10	Jan	1	.25	.20	.24	.44
Float	2-7	Feb	2	.63	.50	.11	2.18
Fertilize	2	Mar	1	.13	.10		
Apply and Incorporate Herbicide	2-10-15	Mar	1	.50	.40	.59	1.04
Discin. Herbicide	1-10	Mar	1	.25	.20	.24	.44
List	1-9	Mar	1	.25	.20	.20	.67
Planet-Jr. ²	1-8	Mar	1	.20	.16	.10	.27
Chisel Furrows	1-6	Apr	1	.31	.25	.24	.43
Cultivate	2-3	Apr-May	2	.26	.26	.30	.55
Water Furrow	2-14	May-June	1	.20	.16	.06	.10
TOTALS				3.70	2.76	2.52	6.93
Labor, Hoeing	Hand	May-July		1			
Irrigation:							
Pre-emerge ³		Mar	2	1.26		5.26	4.27
Post emerge ³		Mar-June	4	2.02		8.42	6.83
TOTALS				3.28		13.68	11.10

¹Labor hours calculated at 1.25 times tractor hours.

²Planet-Jr. (Approximately same cost as flex planter)

³5 acre inches at each pre-emerge and 4 acre inches at each postplant.

Table 4A. Estimated Cost and Returns Per Acre, Onions, Irrigated,
Texas High Plains II, Fine-Textured Soils

Item	Unit	Price or Cost/Unit	Quantity	Value or Cost
Gross Receipts:				
Onions (graded)	50# bags	\$ 3.00	500.00	\$ 1500.00
Variable Costs:				
Pre-Harvest:				
Plants (boxes per acre) ¹	boxes	7.50	18.00	135.00
Fertilizer (90-100-0)	ac.	50.20	1.0	50.20
Herbicide (custom) ²	ac.	17.65	1.0	17.65
Machinery	ac.	2.01	1.0	2.01
Tractor (1)	ac.	3.71	.99	3.67
Tractor (2)	ac.	2.87	1.12	3.21
Irrigation Mach.	ac.	11.05	1.0	11.05
Labor, Tractor & Mach.	hr.	2.50	2.63	6.57
Labor, Irrigation	hr.	2.00	2.65	5.30
Labor, Hoeing and Planting	hr.	2.25	40.0	90.00
Pickup & Misc.	ac.	5.00	1.0	5.00
Interest on Op. Cap.	\$	.095	164.83	15.66
Subtotal, Pre-Harvest				\$ 345.32
Harvest:				
Harvest (custom)	cwt.	.90	275	247.50
Processing (90% Grade- out)	50# bag	1.10	500	500.00
Subtotal, Harvest				\$ 797.50
Total Variable Costs				\$ 1142.82
Income Above Variable Costs				\$ 357.18
Fixed Costs:				
Machinery	ac.	5.98	1.0	5.98
Tractor (1)	hr.	3.58	.98	3.51
Tractor (2)	hr.	2.14	1.12	2.40
Irrigation	ac.	8.97	1.0	8.97
Land (Net Rent) ³	ac.	292.82	1.0	292.82
Total Fixed Costs				\$ 313.68
Total Costs				\$ 1456.60
Net Returns				\$ 43.50

¹ 6000 plants per box

² 10 lbs. Dacthal

³ 1/5 of Gross Revenue less 80% of irrigation fixed costs.

Table 4B. Estimated Costs and Requirements Per Acre, Onions, Irrigated, Texas High Plains II, Fine-Textured Soils

Operation	Item No.	Date	Times Over	Labor Hours ¹	Tractor or Machine Hours	Fuel, Oil, Lub., Rep., Per Acre	Fixed Costs Per Acre
Tandem Disc	2-10	Aug-Sept	1	.25	.20	.24	.44
Plow, Bust	1-5	Sept-Nov	1	.41	.33	.50	.92
Float	2-7	Dec-Feb	2	.63	.50	.27	2.18
List & Fertilize	1-9	Mar-Apr	1	.25	.20	.20	.66
Chisel Bed	1-6	Mar-Apr	1	.31	.25	.235	.43
Plant	1-9	May	1	.26	.21	.20	.70
Cultivate	2-3	June	2	.32	.26	.30	.55
Water Furrow	2-14	July	1	.20	.16	.06	.10
TOTALS				2.63	2.11	2.01	5.98
Hired Hoeing and Chopping	Hand	Apr-July	2.0	15			
Planting Labor	Hand	Mar	1.0	25			
Irrigation; Preplant ²		Jan-Mar	1	.76		3.16	2.56
Postplant ²		Apr-July	5	1.89		7.89	6.41
TOTALS				2.65		11.05	8.97

¹Labor Hours calculated at 1.25 times tractor hours

²6 acre-inches at preplant and 3 acre-inches at each postplant

Table 5A. Estimated Cost and Returns Per Acre, Cabbage, Irrigated,
Typical Management, Texas High Plains II, Fine-Textured Soils

Item	Unit	Price or Cost/Unit	Quantity	Value or Cost
Gross Receipts:				
Cabbage	sack ¹	\$ 2.00	\$550.0	\$ 1100.00
Variable Costs:				
Pre-Harvest:				
Seed (Hybrid)	1b.	37.00	1	37.00
Herbicide	pt.	2.90	.5	1.45
Fertilizer (200-63-9)	ac.	73.64	1.0	73.64
Insecticide (Aerial)	ac.	3.75	5	18.75
Machinery	ac.	1.78	1.0	1.78
Tractor (1)	hr.	3.71	.77	2.86
Tractor (2)	hr.	2.87	1.29	3.70
Labor, Tractor & Mach.	hr.	2.50	2.58	6.45
Labor, Irrigation	hr.	2.00	4.03	8.06
Labor, Hoeing and thinning	hr.	2.25	10.0	22.50
Pickup & Miscellaneous	ac.	5.00	1.0	5.00
Irrigation Machinery	ac.	16.83	1.0	16.83
Interest on Op. Cap.	\$	.095	90.60	8.61
Subtotal, Pre-Harvest				\$ 206.63
Harvest:				
Harvest & Processing	sack	.50	550.0	\$ 275.00
Total Variable Costs				\$ 481.63
Income above Variable Costs				\$ 618.37
Fixed Costs:				
Machinery	ac.	5.64	1.0	5.64
Tractor (1)	hr.	3.58	.77	2.76
Tractor (2)	hr.	2.14	1.29	2.76
Irrigation Machinery	ac.	13.66	1.0	13.66
Land (Net Rent) ²	ac.	209.07	1.0	209.07
Total Fixed Costs				\$ 233.89
Total Costs				\$ 715.52
Net Returns				\$ 384.48

¹ 55-60 lbs. per sack.

² 1/5 of Gross Receipts less 80% of irrigation fixed costs.

Table 5B. Estimated Costs and Requirements Per Acre, Cabbage, Irrigated, Typical Management, Texas High Plains II, Fine-Textured Soils

Operation	Item No.	Date	Times Over	Labor Hours ¹	Tractor or Machine Hours	Fuel, Oil, Lub., Rep., Per Acre	Fixed Costs Per Acre
Shred & Disc	1-10-16	Nov	1	.20	.16	.29	.90
Chisel, Harrow	1-6	Dec	1	.31	.25	.24	.43
Apply & Incorporate Herbicide	2-10-15	Jan	1	.50	.40	.59	1.03
Float	2-7	Feb	2	.63	.50	.27	2.18
List and Fertilize	1-9	Feb	1	.25	.20	.20	.67
Fertilize	2	Feb	1	.13	.10		
Rod Weed	2-17	Mar	1	.16	.13	.03	.06
Plant	1-8	Mar	1	.20	.16	.10	.27
Water Furrow	2-14	Apr	1	.20	.16	.06	.10
TOTALS				2.58	2.06	1.78	5.64
Hoeing and Thinning	Hand	Apr-June	1	10.0			
Irrigation: ² Postplant		Mar-July	8	4.03		16.83	13.66

¹Labor Hours calculated at 1.25 times tractor hours

²4 acre-inches at each postplant

Table 6A. Estimated Cost and Returns Per Acre, Green Peppers, Texas
High Plains II, Fine-Textured Soils.

Item	Unit	Price or Cost/Unit	Quantity	Value or Cost
Gross Receipts:				
Green Bell Peppers	1b.	\$.04 ¹	15,000.00	\$ 600.00
Variable Costs:				
Seed	1b.	24.00	2.0	48.00
Fertilizer(52 ² -152-16)	ac.	55.92	1.0	55.92
Herbicide ³	ac.	3.00	1.0	3.00
Machinery	ac.	2.37	1.0	2.37
Tractor (1)	hr.	3.71	.78	2.89
Tractor (2)	hr.	2.87	1.61	4.62
Labor, Tractor, & Mach.	hr.	2.50	2.99	7.48
Labor, Irrigation	hr.	2.00	2.65	5.30
Labor, Hoeing	hr.	2.25	18.00	40.50
Pickup & Miscellaneous	ac.	5.00	1.0	5.00
Irrigation Machinery	ac.	11.05	1.0	11.05
Interest on Op. Cap.	\$	.095	93.07	8.84
Total Variable Costs				\$ 194.97
Income Above Variable Costs				\$ 405.03
Fixed Costs:				
Machinery	ac.	6.94	1.0	6.94
Tractor (1)	hr.	3.58	.78	2.79
Tractor (2)	hr.	2.14	1.61	3.45
Irrigation	ac.	8.97	1.0	8.97
Land (Net Rent) ⁴	ac.	112.82	1.0	112.82
Total Fixed Costs				\$ 134.97
Total Costs				\$ 329.94
Net Returns				\$ 270.06

¹ Net field price

² May vary considerably dependent on nitrate level of soi.

³ Custom application of Herbicide.

⁴ 1/5 of Gross Receipts less 80% of irrigation fixed costs.

Table 6B. Estimated Costs and Requirements Per Acre, Green Peppers, Texas High Plains II, Fine-Textured Soils

Operation	Item No.	Date	Times Over	Labor Hours ¹	Tractor or Machine Hours	Fuel, Oil, Lub., Rep., Per Acre	Fixed Costs Per Acre
Shred & Disc	1-10-16	Dec	1	.20	.16	.29	.90
Chisel, Harrow	1-6	Dec	1	.31	.25	.24	.43
Float	2-7	Jan	2	.63	.50	.27	2.18
Incorporate Herbicide	2-10-15	Feb	1	.50	.40	.59	1.04
Fertilize	2	Mar	1	.13	.10		
List	1-9	Mar	1	.25	.20	.20	.67
Plant	1-8	Apr	1	.21	.17	.17	.57
Cultivate	2-3	Apr-June	4	.64	.52	.60	1.10
Sandfighter	2-13	Apr-June	3	.12	.09	.01	.05
TOTALS				2.99	2.39	2.37	6.94
Hoeing & Thinning	Hand	June July		15 3			
TOTAL				18			
Irrigation: Postplant ²		Apr-Oct	7	2.65		11.05	8.97

¹Labor Hours calculated at 1.25 times tractor hours

²3 acre-inches at each postplant (may include preplant)

Table 7A. Estimated Cost and Returns Per Acre, Watermelons, Irrigated,
2 in - 4 out, Texas High Plains II, Fine-Textured Soils.

Item	Unit	Price or Cost/Unit	Quantity	Value or Cost
Gross Receipts:				
Watermelons	cwt.	\$ 2.50	200.0	\$ 500.00
Variable Costs:				
Seed	lb.	2.75	.5	1.38
Fertilizer (Custom) (36-24-4)	ac.	16.92	1.0	16.92
Insecticide (Custom)	ac.	5.83	1.0	5.83
Herbicide (Custom)	ac.	4.75	1.0	4.75
Bee Hive	hive	6.00	1.5	9.00
Machinery	ac.	.88	1.0	.88
Tractor (1)	hr.	3.71	.62	2.30
Tractor (2)	hr.	2.87	.45	1.29
Irrigation Machinery	ac.	3.16	1.0	3.16
Labor, Tractor & Mach.	hr.	2.50	1.38	3.35
Labor, Irrigation	hr.	2.00	.76	1.52
Labor, Hoeing, Thinning and Turning Vines	hr.	2.25	2.0	4.50
Pickup & Miscellaneous	ac.	5.00	1.0	5.00
Interest on Op. Cap.	\$	.095	29.94	2.84
Subtotal, Pre-Harvest				\$ 62.72
Harvest:				
Pick, Load, Haul and Loaded on Freight ¹	cwt.	.46	200.00	92.00
Total Variable Costs				\$ 154.72
Income Above Variable Costs				\$ 345.27
Fixed Costs:				
Machinery	ac.	2.38	1.0	2.38
Tractor (1)	hr.	3.58	.62	2.22
Tractor (2)	hr.	2.14	.45	.96
Irrigation	ac.	2.56	1.0	2.56
Land (Net Rent) ²	ac.	97.95	1.00	97.95
Total Fixed Costs				\$ 106.07
Total Costs				\$ 260.79
Net Returns				\$ 239.21

¹ Contracted labor from Esat Texas.

² 1/5 of Gross Receipts less 80% of irrigation fixed costs.

Table 7B. Estimated Costs and Requirements Per Acre, Watermelons, Irrigated, 2 in - 4 out, Texas High Plains II, Fine-Textured Soils

Operation	Item No.	Date	Times Over	Labor Hours ¹	Tractor or Machine Hours	Fuel, Oil, Lub., Rep., Per Acre	Fixed Costs Per Acre
Chisel	1-6	Jan	1	.25	.20	.19	.35
Pack with Wide Duals	1	Feb	2	.08	.06		
Harrow ² - Incorporate	2-10	Mar	1	.04	.03	.04	.07
List	1-9	Mar	1	.25	.20	.20	.67
Plant	1-8	May	1	.20	.16	.10	.27
Sandfight	2-13	June	2	.08	.03		.02
Cultivate or Knife	2-3	Apr-May	2	.32	.26	.30	.55
Plow blank rows	2-14	July	1	.16	.13	.05	.45
TOTALS				1.38	1.07	0.88	2.38
Thin Vines, Hoeing and turning vines	Hand	June-July		2.0			
Irrigation: ³							
Preplant ³		April	1	.38		1.58	1.28
Postplant ³		July	1	.38		1.58	1.28
TOTALS				.76		3.16	2.56

¹ Labor Hours calculated at 1.25 times tractor hours.

² Following custom fertilizer and herbicide application.

³ 3 acre-inches at each preplant and at each postplant.

Table 8A. Estimated Cost and Returns Per Acre, Cantaloupes, 1 In - 1 Out, Texas High Plains II, Fine-Textured Soils.

Item	Unit	Price or Cost/Unit	Quantity	Value or Cost
Gross Receipts:				
Cantaloupes	cwt.	\$ 4.00	160	\$ 640.00
Variable Costs:				
Pre-Harvest:				
Seed	lb.	2.75	1.0	2.75
Fertilizer (Custom) (36-24-4)	ac.	16.92	1.0	16.92
Insecticide (Custom)	ac.	5.83	1.0	5.83
Herbicide	ac.	4.75	1.0	4.75
Fungicide	ac.	4.60	1.0	4.60
Beehive	hive	6.00	1.5	9.00
Machinery	ac.	.88	1.0	.88
Tractor (1)	hr.	3.71	.62	2.30
Tractor (2)	hr.	2.87	.45	1.29
Irrigation Machinery	ac.	6.31	1.0	6.31
Labor, Tractor & Mach.	hr.	2.50	1.38	3.35
Labor, Irrigation	hr.	2.00	1.52	3.04
Labor, Hoeing, Thinning and Turning Vines	hr.	2.25	2.0	4.50
Pickup & Miscellaneous	ac.	5.00	1.0	5.00
Interest on Op. Cap.	\$	.095	35.26	3.35
Subtotal, Pre-Harvest				\$ 73.87
Harvest:				
Pick, Load, Haul, Load on Freight	cwt.	.46	160	\$ 73.60
Total Variable Costs				\$ 147.47
Income Above Variable Costs				\$ 492.53
Fixed Costs:				
Machinery	ac.	2.01	1.0	2.01
Tractor (1)	hr.	3.58	.62	2.22
Tractor (2)	hr.	2.14	.45	.96
Irrigation	ac.	5.12	1.0	5.12
Land (Net Rent) ¹	ac.	123.90	1.0	123.90
Total Fixed Costs				\$ 134.21
Total Costs				\$ 281.68
Net Returns				\$ 358.32

¹ 1/5 of Gross Receipts less 80% of irrigation fixed costs.

Table 8B. Estimated Costs and Requirements Per Acre, Cantaloupes, Texas High Plains II, Fine-Textured Soils

Operation	Item No.	Date	Times Over	Labor Hours ¹	Tractor or Machine Hours	Fuel, Oil, Lub., Rep., Per Acre	Fixed Costs Per Acre
Chisel	1-6	Jan	1	.25	.20	.19	.35
Pack with Wide Duals	1	Feb	2	.08	.06		
Harrow ² - Incorporate	2-10	Mar	1	.04	.03	.04	.09
List	1-9	Mar	1	.25	.20	.20	.67
Plant	1-8	May	1	.20	.16	.10	.27
Cultivate or Knife	2-3	Apr-May	2	.32	.27	.30	.55
Sandfight	2-13	June	2	.08	.03	.00	.02
Plow Blank Rows	2-17	July	1	.16	.13	.05	.08
TOTALS				1.38	1.07	0.88	2.01
Thin Vines, Hoeing, and turning vines	Hand	June-July		2			
Irrigation: ³							
Preplant ³		April	1	.38		1.58	1.28
Postplant ³		July	3	1.14		4.73	3.84
TOTALS				1.52		6.31	5.12

¹Labor Hours calculated at 1.25 times tractor hours.

²Following custom fertilizer and herbicide application

³3 acre-inches at each preplant and at each postplant.

Table 9A. Estimated Cost and Returns Per Acre, Lettuce, Texas High Plains II, Fine-Textured Soils.

Item	Unit	Price or Cost/Unit	Quantity	Value or Cost
Gross Receipts: Lettuce	carton ¹	\$ 3.00	500.00	\$ 1500.00
Variable Costs:				
Pre-Harvest:				
Seed	1b.	22.50	1.0	22.50
Fertilizer (90-100-0)	ac.	50.20	1.0	50.20
Herbicide (Balan)	gal.	10.00	1.5	15.00
Insecticide (aerial)	ac.	9.00	5.0	45.00
Machinery	ac.	2.17	1.0	2.17
Tractor (1)	hr.	3.71	.36	1.34
Tractor (2)	hr.	2.87	1.76	5.05
Labor, Tractor & Mach.	hr.	2.50	2.65	6.63
Labor, Irrigation	hr.	2.00	2.65	5.30
Labor, Hoeing and Thinning	hr.	2.25	25.00	56.25
Irrigation, Machinery	ac.	11.05	1.0	11.05
Pickup & Miscellaneous	ac.	5.00	1.0	5.00
Interest on Op. Cap.	\$	.095	112.75	10.71
Subtotal, Pre-Harvest				\$ 236.20
Harvest:				
Picked, Hauled, Packaged, Inspected and Sold at Cooler	carton	1.50	500.00	\$ 750.00
Total Variable Costs				\$ 986.20
Income Above Variable Costs				\$ 513.80
Fixed Costs:				
Machinery	ac.	6.02	1.0	6.02
Tractor (1)	hr.	3.58	.36	1.29
Tractor (2)	hr.	2.14	1.76	3.77
Irrigation	ac.	8.97	1.0	8.97
Land (Net Rent) ²	ac.	292.82	1.0	292.82
Total Fixed Costs				\$ 312.87
Total Costs				\$ 1299.07
Net Returns				\$ 200.93

¹ 24 Heads² 1/5 of Gross Receipts less 80% of irrigation fixed costs.

Table 9B. Estimated Costs and Requirements Per Acre, Lettuce, Texas High Plains II, Fine-Textured Soils

Operation	Item No.	Date	Times Over	Labor Hours ¹	Tractor or Machine Hours	Fuel, Oil, Lub., Rep., Per Acre	Fixed Costs Per Acre
Tandem Disc	2-10	June	3	.75	.60	.71	1.31
Apply & Incorporate Herbicide	2-10-15	July	1	.50	.40	.59	1.04
Float	2-7	July	1	.63	.50	.27	2.18
List & Fertilize	1-9	July	1	.25	.20	.20	.67
Plant	1-8	July-Aug	1	.20	.16	.10	.27
Cultivate	2-3	July-Aug	2	.32	.26	.30	.55
TOTALS				2.65	2.12	2.17	6.02
Hoeing, Thinning and Hoeing Doubles	Hand	Aug		25			
Irrigation: Postplant ²		Aug-Sept	7	2.65		11.05	8.97

¹Labor Hours calculated at 1.25 times tractor hours

²3 acre-inches at each postplant

Table 10A. Estimated Cost and Returns Per Acre, Irrigated Cotton, Typical Management, Texas High Plains II, Fine-Textured Soils.

Item	Unit	Price or Cost/Unit	Quantity	Value or Cost
Gross Receipts from Production:				
Lint	lb.	\$.40	500.00	\$ 200.00
Seed	ton	120.00	.4	48.00
Total				\$ 248.00
Variable Costs:				
Pre-Harvest:				
Seed ¹	lb.	.30	38.0	11.40
Fertilizer (60-40-0)	ac.	26.80	1.0	26.80
Herbicide	pt.	3.25	1.5	4.88
Insecticide (Custom)	ac.	4.50	1.0	4.50
Machinery	ac.	2.56	1.0	2.56
Tractor (1)	hr.	3.71	1.02	3.78
Tractor (2)	hr.	2.87	1.35	3.35
Irrigation Machinery	ac.	7.37	1.0	7.37
Labor, Tractor, & Mach.	hr.	2.50	2.96	7.40
Labor, Irrigation	hr.	2.00	1.77	3.54
Pickup & Miscellaneous	ac.	5.00	1.0	5.00
Hail Insurance	\$100	18.08	.5	9.04
Interest on Op. Cap.	\$	.095	44.81	4.23
Subtotal, Pre-Harvest				\$ 93.88
Harvest Costs:				
Strip & Haul	cwt.	1.00	25.0	25.00
Ginning ³	bale	31.25	1.0	31.25
Subtotal, Harvest				\$ 56.25
Total Variable Costs				\$ 150.13
Income Above Variable Costs				\$ 97.87
Fixed Costs:				
Machinery	ac.	7.35	1.0	7.35
Tractor (1)	hr.	3.58	1.02	3.65
Tractor (2)	hr.	2.14	1.32	2.89
Irrigation	ac.	5.98	1.0	5.98
Land (Net Rent) ²	ac.	36.00	1.0	36.00
Total Fixed Costs				\$ 55.87
Total Costs				\$ 206.80

Table 10A. (Continued)

Item	Unit	Price or Cost/Unit	Quantity	Value or Cost
Net Returns				\$ 41.20

1 Assumes cotton planted 1.25 times.

2 6% return on land investment (land valued at \$600/A)

3 Assuming 20% turnout on seed cotton--25 hundredweight x \$1.25/hundredweight = \$31.25. This figure includes bagging and ties, warehouse charges, sampling, boll weevil spraying, storing, hauling and Cotton Producers Institute dues.

Table 10B. Estimated Costs and Requirements Per Acre, Irrigated Cotton, Typical Management, Texas High Plains II, Fine-Textured Soils

Operation	Item No.	Date	Times Over	Labor Hours ¹	Tractor or Machine Hours	Fuel, Oil, Lub., Rep., Per Acre	Fixed Costs Per Acre
Shred & Disc	1-10-16	Dec	1	.20	.16	.29	.90
Chisel	1-6	Dec	1	.25	.20	.19	.35
Offset Disc	1-11	Feb	1	.31	.25	.45	.83
Float	2-7	Mar	2	.63	.50	.27	2.18
Apply & Incorporate Herbicide	2-10-15	Mar	1	.50	.40	.59	1.04
List & Fertilize	1-9	Mar	1	.25	.20	.20	.67
Cultivate	2-3	May	1	.16	.13	.15	.28
Plant	1-9	May	1.25	.26	.21	.21	.70
Sandfight	2-13	June	1	.04	.03	.00	.02
Cultivate	2-3	June	1	.16	.13	.15	.28
Water Furrow	2-14	July	1	.20	.16	.06	.10
TOTALS				2.96	2.37	2.56	7.35
Irrigation: Preplant ²		Apr	1	.76		3.16	2.56
Postplant ²		June-Aug	2	1.01		4.21	3.42
TOTALS				1.77		7.37	5.98

¹Labor Hours calculated at 1.25 times tractor hours

²6 acre-inches at preplant and 4 acre-inches at each postplant

Table 11A. Estimated Cost and Returns Per Acre, Wheat for Grain, Irrigated, Typical Management, Texas High Plains II, Fine-Textured Soils.

Item	Unit	Price or Cost/Unit	Quantity	Value or Cost
Gross Receipts:				
Wheat	bu.	\$ 3.75	37.0	\$ 138.75
Grazing (Gain) ¹	lb.	.20	200.0	<u>40.00</u>
Total				\$ 178.75
Variable Costs:				
Pre-Harvest:				
Seed	bu.	7.00	1.0	7.00
Fertilizer (100-40-0)	ac.	38.00	1.0	38.00
Insecticide (Custom)	ac.	3.75	1.0	3.75
Machinery	ac.	1.64	1.0	1.64
Tractor (1)	hr.	3.71	.61	2.26
Tractor (2)	hr.	2.87	.99	2.84
Labor, Tractor & Mach.	hr.	2.50	2.0	5.00
Labor, Irrigation	hr.	2.00	1.51	3.02
Irrigation Machinery	ac.	6.31	1.0	6.31
Pickup & Miscellaneous	ac.	5.00	1	5.00
Hail Insurance	\$100	14.73	.175	2.58
Interest on Op. Cap.	\$	.095	37.88	<u>3.60</u>
Subtotal, Pre-Harvest				\$ 79.36
Harvest Costs:				
Combining (Custom) (Hauling included)	bu.	.35	37.0	<u>12.95</u>
Total Variable Costs				\$ 92.31
Income Above Variable Costs				\$ 86.44
Fixed Costs:				
Machinery	ac.	3.57	1.0	3.57
Tractor (1)	hr.	3.58	.61	2.18
Tractor (2)	hr.	2.14	.99	2.12
Irrigation	ac.	5.12	1.0	5.12
Land (Net Rent) ²	ac.	36.00	1.0	<u>36.00</u>
Total Fixed Costs				\$ 48.99
Total Costs				\$ 141.30
Net Returns				\$ 37.45

¹ Wheat is rented for grazing.² 6% return on land investment (land valued at \$600/A)

Table 11B. Estimated Costs and Requirements Per Acre, Wheat for Grain, Irrigated, Typical Management, Texas High Plains II, Fine-Textured Soils

Operation	Item No.	Date	Times Over	Labor Hours ¹	Tractor or Machine Hours	Fuel, Oil, Lub., Rep., Per Acre	Fixed Costs Per Acre
Tanden Disc	2-10	Jun-July	2	.50	.40	.48	.88
Oneway	1-4	Aug	1	.31	.25	.27	.59
Fertilize	2	Aug	1	.13	.10		
Tandem Disc	2-10	Aug	1	.25	.20	.24	.44
Chisel Sweep	1-6	Aug	1	.20	.16	.15	.28
List	1-9	Aug	1	.25	.20	.02	.67
Cultivate	2-3	Aug	1	.16	.13	.15	.28
Plant	2-12	Aug	1	<u>.20</u>	<u>.16</u>	<u>.14</u>	<u>.43</u>
TOTALS				2.00	1.60	1.64	3.57
Irrigation: Postplant ²		Aug-Apr	3	1.51		6.31	5.12

¹ Labor hours calculated at 1.25 times tractor hours

² 4 acre-inches at each postplant

Table 12A. Estimated Cost and Returns Per Acre, Grain Sorghum, Irrigated, Typical Management, Texas High Plains II, Fine-Textured Soils.

Item	Unit	Price or Cost/Unit	Quantity	Value or Cost
Gross Receipts:				
Grain	cwt.	\$ 4.25	65	\$ 276.25
Variable Costs:				
Pre-Harvest:				
Seed	1b.	.41	12.0	4.92
Fertilizer (130-60-0)	ac.	51.40	1.0	51.40
Herbicide	1b.	2.95	1.5	4.43
Insecticide (Custom)	ac.	3.75	2.0	7.50
Machinery	ac.	2.72	1.0	2.72
Tractor (1)	hr.	3.71	1.02	3.78
Tractor (2)	hr.	2.87	1.32	3.79
Labor, Tractor & Mach.	hr.	2.50	2.92	7.30
Labor, Irrigation	hr.	2.00	2.27	4.54
Irrigation Machinery	ac.	9.47	1.0	9.47
Pickup & Miscellaneous	ac.	5.00	1.0	5.00
Interest on Op. Cap.	\$	.095	52.43	4.98
Subtotal, Pre-Harvest				\$ 109.83
Harvest:				
(custom includes haul)	cwt.	.45	65.0	29.25
Total Variable Costs				\$ 139.08
Income Above Variable Costs				\$ 137.17
Fixed Costs:				
Machinery	ac.	6.44	1.0	6.44
Tractor (1)	hr.	3.58	1.02	3.65
Tractor (2)	hr.	2.14	1.32	2.82
Irrigation	ac.	7.68	1.0	7.68
Land (Net Rent) ¹	ac.	36.00	1.0	36.00
Total Fixed Costs				\$ 56.59
Total Costs				\$ 195.67
Net Returns				\$ 80.58

¹ \$70/acre less 80% of irrigation fixed costs.

Table 12B. Estimated Costs and Requirements Per Acre, Grain Sorghum Irrigated, Typical Management, Texas High Plains II, Fine-Textured Soils

Operation	Item No.	Date	Times Over	Labor Hours ¹	Tractor or Machine Hours	Fuel, Oil, Lubl, Rep., Per Acre	Fixed Costs Per Acre
Shred & Disc	1-10-16	Nov	1	.20	.16	.29	.90
Tandem Disc	2-10	Nov	1	.25	.20	.19	.35
Chisel	1-6	Dec	1	.31	.25	.24	.43
Offset Disc	1-11	Feb	1	.31	.25	.45	.83
Tandem Disc	2-10	Feb	1	.25	.20	.19	.35
Float	2-7	Mar	2	.63	.50	.27	2.18
List & Fertilize	1-9	Mar	1	.25	.20	.20	.67
Cultivate	2-3	Apr	1	.16	.13	.15	.28
Rod Weed	2-14-17	May	1	.16	.13	.08	.15
Plant, Spray	1-9-15	May	1	.20	.16	.60	.20
Water Furrow	2-14	Jun	1	.20	.16	.06	.10
TOTALS				2.92	2.34	2.72	6.44
Irrigation: ²							
Preplant ²		Mar	1	.76		3.16	2.56
Postplant ²		Jun-Aug	3	1.51		6.31	5.12
TOTALS				2.27		9.47	7.68

¹Labor Hours calculated at 1.25 times tractor hours

²6 acre-inches preplant and 4 acre-inches at each postplant

Table 13A. Estimated Cost and Returns Per Acre, Corn for Grain, Irrigated, Typical Management, Texas High Plains II, Fine-Textured Soils.

Item	Unit	Price or Cost/Unit	Quantity	Value or Cost
Gross Receipts:				
Grain	bu.	\$ 2.87	150	\$ 430.50
Variable Costs:				
Pre-Harvest:				
Seed	1b.	.62	25	15.50
Fertilizer (150-60-0)	ac.	57.00	1	57.00
Herbicide (Custom)	ac.	7.65	1	7.65
Machinery	ac.	2.72	1	2.72
Tractor (1)	hr.	3.71	1.02	3.78
Tractor (2)	hr.	2.87	1.32	3.79
Labor, Tractor & Mach.	hr.	2.50	2.92	7.30
Labor, Irrigation	hr.	2.00	2.27	4.54
Irrigation Machinery	ac.	9.47	1	9.47
Pickup, Miscellaneous	ac.	5.00	1	5.00
Crop Insurance	\$100	14.78	.6	8.87
Interest on Op. Cap.	\$	.095	62.81	5.97
Subtotal, Pre-harvest				\$ 131.59
Harvest:				
Custom Includes Haul	bu	.28	150	\$ 42.00
Total Variable Costs				\$ 173.59
Income Above Variable Costs				\$ 256.91
Fixed Costs:				
Machinery	ac.	6.44	1.0	6.44
Tractor (1)	hr.	3.58	1.02	3.65
Tractor (2)	hr.	2.14	1.32	2.82
Irrigation	ac.	7.68	1.0	7.68
Land (Net Rent) ¹	ac.	36.00	1.0	36.00
Total Fixed Costs				\$ 56.59
Total Costs				\$ 230.18
Net Returns				\$ 200.32

¹ 6% return on land investment (land valued at \$600/A)

Table 13B. Estimated Costs and Requirements Per Acre, Corn for Grain, Irrigated, Typical Management, Texas High Plains II, Fine-Textured Soils

Operation	Item No.	Date	Times Over	Labor, Hours ¹	Tractor or Machine Hours	Fuel, Oil, Lub., Rep., Per Acre	Fixed Costs Per Acre
Shred & Disc	1-10-16	Nov	1	.20	.16	.29	.90
Tandem Disc	2-10	Nov	1	.25	.20	.19	.35
Chisel	1-6	Dec	1	.31	.25	.24	.43
Offset Disc	1-11	Feb	1	.31	.25	.45	.83
Tandem Disc	2-10	Feb	1	.25	.20	.19	.35
Float	2-7	Mar	2	.63	.50	.27	2.18
List & Fertilize	1-9	Mar	1	.25	.20	.20	.67
Rod Weeder	2-14-17	Apr	1	.16	.13	.08	.15
Plant & Spray Herbicide	1-9-15	Apr	1	.20	.16	.60	.20
Cultivate	2-3	May	1	.16	.13	.15	.28
Water Furrow	2-14	May	1	.20	.16	.06	.10
TOTALS				2.92	2.34	2.72	6.44
Irrigation:							
Preplant ²		Mar	1	.76		3.16	2.56
Postplant ²		May-Aug	3	1.51		6.31	5.12
TOTALS				2.27		9.47	7.68

¹Labor Hours calculated at 1.25 times tractor hours

²6 acre-inches at preplant and 4 acre-inches at each postplant

Table 14A. Estimated Cost and Returns Per Acre, Soybeans, Irrigated,
Typical Management, Texas High Plains II, Fine-Textured
Soils.

Item	Unit	Price or Cost/Unit	Quantity	Value or Cost
Gross Receipts	bu.	\$ 4.75	35.0	\$ 166.25
Variable Costs:				
Pre-Harvest:				
Seed	1b.	.15	60	9.00
Fertilizer (0-40-0)	ac.	10.40	1.0	10.40
Herbicide	pt.	3.25	1.5	4.88
Machinery	ac.	2.57	1.0	2.57
Tractor (1)	hr.	3.71	1.03	3.82
Tractor (2)	hr.	2.87	1.32	3.79
Labor, Tractor & Mach.	hr.	2.50	2.93	7.33
Labor, Irrigation	hr.	2.00	1.77	3.54
Irrigation Machinery	ac.	7.37	1.0	7.37
Pickup, Miscellaneous	ac.	5.00	1.0	5.00
Interest on Op. Cap.	\$	.095	28.85	2.74
Subtotal, Pre-Harvest				\$ 60.44
Harvest:				
Custom (includes haul)	bu.	.35	35.0	12.25
Total Variable Costs				\$ 72.69
Income Above Variable Costs				\$ 93.56
Fixed Costs:				
Machinery	ac.	7.28	1.0	7.28
Tractor (1)	hr.	3.58	1.03	3.69
Tractor (2)	hr.	2.14	1.32	2.82
Irrigation	ac.	5.98	1.0	5.98
Land (Net Rent) ¹	ac.	36.00	1.0	36.00
Total Fixed Costs				\$ 55.77
Total Costs				\$ 128.46
Net Returns				\$ 37.79

¹ 6% return on land investment (land valued at \$600/A)

Table 14B. Estimated Costs and Requirements Per Acre, Soybeans, Irrigated, Typical Management, Texas High Plains II, Fine-Textured Soils

Operation	Item No.	Date	Times Over	Labor Hours ¹	Tractor or Machine Hours	Fuel, Oil, Lub., Rep., Per Acre	Fixed Costs Per Acre
Shred & Disc	1-10-16	Nov	1	.20	.16	.29	.90
Chisel	1-6	Dec	1	.31	.25	.24	.43
Offset Disc	1-11	Feb	1	.31	.25	.45	.83
Float	2-7	Mar	1	.63	.50	.27	2.18
Apply & Incorporate Herbicide	2-10-15	Mar	2	.50	.40	.59	1.04
List and Fertilize	1-9	Mar	1	.25	.20	.20	.67
Cultivate	2-3	Apr	1	.16	.13	.15	.28
Plant	1-9	May	1	.21	.17	.17	.57
Cultivate	2-3	June	1	.16	.13	.15	.28
Water Furrow	2-14	July	1	.20	.16	.06	.10
TOTALS				2.93	2.35	2.57	7.28
Irrigation: ²							
Preplant ²		Mar	1	.76		3.16	2.56
Postplant ²		June-Aug	2	1.01		4.21	3.42
TOTALS				1.77		7.37	5.98

¹Labor Hours calculated at 1.25 times tractor hours

²6 acre-inches at preplant and 4 acre-inches at postplant

SECTION B

CROP 1 Potatoes

Table 15.

Months:	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
OPERATING RECEIPTS:													
Number of Units Sold								200					(200)
Receipts 6.00/cwt.								1200					1200
OPERATING EXPENSES:													
Labor (Not Including Irrigation)													
Tractor (Hours Used)													
Tractor (Wages Paid)		(.32)	(.56)	(2.64)	(.29)	(.2)			(.25)		(.41)	(.31)	(4.98)
Hoeing (Hours Used)		.80	1.40	6.60	.72	.5			.63		1.02	.78	12.45
Hoeing (Wages Paid)					(2)	(2)	(2)						(6)
Harvest (Hours Used)					4.50	4.50	4.50						13.50
Harvest (Wages Paid)													
Custom Harvest								115.20					115.20
Other Custom Work								350.00					350.00
Subtotal Labor & Custom Work													
Other Production Expenses													
Seed				140.00									140.00
Fertilizer and Lime			84.00										84.00
Herbicide					4.88								4.88
Insecticide					2.43								2.43
Repairs (Not Including Irr.)													
Tractors		.30	.57	2.54	.28	.19			.24	.41		.30	4.83
Equipment		.14	.44	2.66	.15	.06			.24	.44		.13	4.26
Rents and Leases													
Fuel, Oil, Lub. (Not Including Irr.)													
Tractors		.42	1.10	4.88	.38	.27			.33	.81		.42	8.61
Equipment													
Taxes													
Insurances													
Transportation Freight													
Other Pickup													
Subtotal Other Production Exp.													
Irrigation Costs													
Hours Used													
Wages Paid			.74	1.51	1.51	1.51	1.51						6.78
Repairs (Well Motors & Equipment)			1.31	.66	.66	.66	.66						3.95
Fuel, Oil, Lubricants			3.42	1.71	1.71	1.71	1.71						10.26
Subtotal Irrigation Costs													
Other Pickup and Miscellaneous		.50	.50	.50	.50	.50	.50	.50	.50	.50		.50	5.00
Operating expenses Less Labor													
And Custom Harvest		1.36	91.34	200.45	10.99	3.39	2.87	.50	1.31			1.35	
TOTAL OPERATING EXPENSE:		2.16	93.48	171.06	17.72	9.90	8.88	465.70	1.94	2.16	1.02	2.13	\$776.15

CROP 2 Cucumbers

Table 16.

Months:	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
OPERATING RECEIPTS:													
Number of Units Sold								200					200
Receipts \$3.50 / cwt								700.00					\$700.00
OPERATING EXPENSES:													
Labor (Not Including Irrigation)													
Tractor (Hours Used)		(.31)	(1.87)			(.36)						(.45)	(2.99)
Tractor (Wages Paid)		.78	4.68			.90						1.13	7.49
Hoeing (Hours Used)						(3)							
Hoeing (Wages Paid)						6.75							6.75
Harvest (Hours Used)													
Harvest (Wages Paid)								420.00					420.00
Custom Harvest													
Other Custom Work													
Subtotal Labor & Custom Work													
Other Production Expenses													
Seed			16.00										16.00
Fertilizer and Lime			61.60										61.60
Herbicide			1.63										1.63
Insecticide													
Repairs (Not Including Irr.)													
Tractors		.32	1.62			.35						.46	2.75
Equipment		.45	1.31			.21						.48	2.45
Rents and Leases													
Fuel, Oil, Lub. (Not Including Irr.)													
Tractors		.61	2.37			.49						.88	4.35
Equipment													
Taxes													
Insurances													
Transportation Freight													
Other Pickup													
Subtotal Other Production Exp.													
Irrigation Costs													
Hours Used													
Wages Paid				.76	1.14	1.14							3.04
Repairs (Well Motors & Equipment)				.44	.66	.66							1.76
Fuel, Oil, Lubricants				1.14	1.71	1.71							4.56
Subtotal Irrigation Costs													
Other Beehive				9.00									9.00
Pickup		1.00	1.50	.50		1.00		.50				.50	5.00
Operating expenses Less Labor		2.38	86.03	11.03	2.37	11.75		.50				2.32	
TOTAL OPERATING EXPENSE:		3.16	90.71	11.84	3.51	13.79		420.00				3.45	546.95

CROP 3 Carrots

Table 17.

Months:	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
OPERATING RECEIPTS:													
Number of Units Sold tons							8						8
Receipts \$30.00 / ton							240.00						\$240.00
OPERATING EXPENSES:													
Labor (Not Including Irrigation)													
Tractor (Hours Used)	(.66)	(.63)	(1.58)	(.31)	(.32)	(.2)							(3.7)
Tractor (Wages Paid)	1.65	1.58	3.95	.78	.78	.50							9.26
Hoeing (Hours Used)					(.33)	(.33)	(.33)						(1)
Hoeing (Wages Paid)					.75	.75	.75						2.25
Harvest (Hours Used)													
Harvest (Wages Paid)													
Custom Harvest													
Other Custom Work													
Subtotal Labor & Custom Work													
Other Production Expenses													
Seed			12.50										12.50
Fertilizer and Lime			33.60										33.60
Herbicide			4.88										4.88
Insecticide													
Repairs (Not Including Irr.)													
Tractors	.68	.61	1.32	.48	.16	.19							3.44
Equipment	.68	.11	1.13	.24	.30	.06							2.52
Rents and Leases													
Fuel, Oil, Lub. (Not Including Irr.)													
Tractors	1.29	.83	2.20	.83	.22	.27							5.64
Equipment													
Taxes													
Insurances													
Transportation Freight													
Other Pickup													
Subtotal Other Production Exp.													
Irrigation Costs													
Hours Used													
Wages Paid			2.52	1.01	1.01	1.01	1.01						6.56
Repairs (Well Motors & Equipment)			1.48	.58	.58	.58	.58						3.80
Fuel, Oil, Lubricants			3.80	1.52	1.52	1.52	1.52						9.88
Subtotal Irrigation Costs													
Other Pickup & Miscellaneous	1.00	1.00	1.00	.50	.50	.50	.50						5.00
Operating Expenses Less Labor	3.65	2.55	61.91	4.15	3.28	3.12	2.60						
TOTAL OPERATING EXPENSE:	5.30	4.13	68.68	5.94	5.84	5.38	4.36						\$99.33

CROP 4 Unions

Table 18.

Months:	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
OPERATING RECEIPTS:													
Number of Units Sold 50# bag								500					500
Receipts # 3.00/bag								1500					\$1500
OPERATING EXPENSES:													
Labor (Not Including Irrigation)													
Tractor (Hours Used)		(.32)	(.31)	(.25)	(.26)	(.32)	(.20)	(.25)			(.41)	(.31)	(2.63)
Tractor (Wages Paid)		.80	.77	.62	.65	.80	.50	.62			1.02	.77	6.55
Hoeing (Hours Used)				(2)	(4)	(4)	(5)						(15)
Hoeing (Wages Paid)				4.50	9.00	9.00	11.25						33.75
Harvest (Hours Used)													
Harvest (Wages Paid)													
Custom Harvest								247.50					247.50
Other Custom Work						56.25		550.00					606.25
Subtotal Labor & Custom Work													
Other Production Expenses													
Seed					135.00								135.00
Fertilizer and Lime				50.20									50.20
Herbicide						17.65							17.65
Insecticide													
Repairs (Not Including Irr.)													
Tractors		.30	.32	.25	.27	.31	.19	.24			.42	.30	2.60
Equipment		.14	.24	.20	.20	.30	.06	.24			.50	.13	2.01
Rents and Leases													
Fuel, Oil, Lub. (Not Including Irr.)													
Tractors		.42	.61	.49	.51	.43	.27	.23			.81	.42	4.29
Equipment													
Taxes													
Insurances													
Transportation Freight													
Other Pickup													
Subtotal Other Production Exp.													
Irrigation Costs													
Hours Used													
Wages Paid			1.52	.95	.95	.95	.95						5.30
Repairs (Well Motors & Equipment)			.88	.55	.55	.55	.55						3.08
Fuel, Oil, Lubricants			2.28	1.43	1.43	1.43	1.43						7.98
Subtotal Irrigation Costs													
Other Pickup		.50	.50	.50	.50	.50	1.50	1.00			.50	.50	5.00
Operating Expenses Less Labor		1.36	4.83	53.62	138.36	21.17	3.00	1.81			2.23	1.35	
TOTAL OPERATING EXPENSE:		2.16	7.12	59.69	149.06	88.17	15.70	799.93			3.25	2.12	\$1127.16

CROP 5 Cabbage

Table 19.

Months:	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
OPERATING RECEIPTS:													
Number of Units Sold Sack							550						(550)
Receipts \$2.00/Sack							1100.00						\$1100.00
OPERATING EXPENSES:													
Labor (Not Including Irrigation)													
Tractor (Hours Used)	(.50)	(1.01)	(.36)	(.20)							(.20)	(.31)	(2.58)
Tractor (Wages Paid)	1.25	2.52	.90	.50							.50	.77	6.44
Hoeing (Hours Used)				(2.5)	(5)	(2.5)							(10)
Hoeing (Wages Paid)				5.63	11.25	5.62							22.50
Harvest (Hours Used)													
Harvest (Wages Paid)													
Custom Harvest							275.00						275.00
Other Custom Work													
Subtotal Labor & Custom Work													
Other Production Expenses													
Seed			37.00										37.00
Fertilizer and Lime			73.64										73.64
Herbicide			1.45										1.45
Insecticide				18.75									18.75
Repairs (Not Including Irr.)													
Tractors	.48	.98	.36	.19							.20	.32	2.53
Equipment	.59	.47	.13	.06							.29	.24	1.78
Rents and Leases													
Fuel, Oil, Lub. (Not Including Irr.)													
Tractors	.66	1.49	.61	.27							.39	.61	4.03
Equipment													
Taxes													
Insurances													
Transportation Freight													
Other Pickup													
Subtotal Other Production Exp.													
Irrigation Costs													
Hours Used													
Wages Paid				2.02	2.02	2.02	2.02						8.08
Repairs (Well Motors & Equipment)				1.17	1.17	1.17	1.17						4.67
Fuel, Oil, Lubricants				3.04	3.04	3.04	3.04						12.16
Subtotal Irrigation Costs													
Other Pickup & Misc.	.50	.50	.50	.50	1.00	.50	.50				.50	.50	5.00
Operating Expenses Less Labor	2.23	3.44	113.69	23.98	5.21	4.71	4.71				1.38	1.67	
TOTAL OPERATING EXPENSE:	3.48	5.96	114.59	32.13	18.48	12.35	281.73				1.88	2.44	473.03

CROP 6 Green Peppers

Table 20.

Months:	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
OPERATING RECEIPTS:													
Number of Units Sold lb.											(15000)		(15000)
Receipts .04 / lb.											600.00		\$ 600.00
OPERATING EXPENSES:													
Labor (Not Including Irrigation)													
Tractor (Hours Used)	(.63)	(.50)	(.38)	(.41)	(.36)	(.20)						(.51)	(2.99)
Tractor (Wages Paid)	1.57	1.25	.95	1.03	.90	.50						1.27	7.47
Hoing (Hours Used)						(15)	(3)						(18)
Hoing (Wages Paid)						33.75	6.75						40.50
Harvest (Hours Used)													
Harvest (Wages Paid)													
Custom Harvest													
Other Custom Work													
Subtotal Labor & Custom Work													
Other Production Expenses													
Seed				48.00									48.00
Fertilizer and Lime			55.92										55.92
Herbicide		3.00											3.00
Insecticide													
Repairs (Not Including Irr.)													
Tractors	.61	.48	.37	.42	.36	.20						.52	2.96
Equipment	.27	.59	.20	.26	.36	.15						.53	2.37
Rents and Leases													
Fuel, Oil, Lub. (Not Including Irr.)													
Tractors	.83	.66	.66	.68	.49	.27						1.00	4.59
Equipment													
Taxes													
Insurances													
Transportation Freight													
Other Pickup													
Subtotal Other Production Exp.													
Irrigation Costs													
Hours Used													
Wages Paid				.76	1.51	.76	.76	.76	.76				5.30
Repairs (Well Motors & Equipment)				.44	.88	.44	.44	.44	.44				3.08
Fuel, Oil, Lubricants				1.14	2.28	1.14	1.14	1.14	1.14				7.98
Subtotal Irrigation Costs													
Other Pickup	.50	.50	.50	.50	.50	1.50	.50					.50	5.00
Operating Expenses Less Labor	2.21	5.23	57.65	51.06	5.87	3.70	1.70	.90	.90			2.55	
TOTAL OPERATING EXPENSE:	3.78	6.48	58.60	53.23	7.28	38.71	9.59	2.34	2.34			3.82	\$186.17

CROP 7 Watermelons

Table 21.

Months:	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
OPERATING RECEIPTS:													
Number of Units Sold CWT								(200)					(200)
Receipts \$ 2.50/CWT								500.00					500.00
OPERATING EXPENSES:													
Labor (Not Including Irrigation)													
Tractor (Hours Used)	(.25)	(.08)	(.29)	(.36)	(.16)	(.08)	(.16)						(1.38)
Tractor (Wages Paid)	.63	.20	.73	.90	.40	.20	.40						3.46
Hoeing (Hours Used)						(1)	(1)						(2)
Hoeing (Wages Paid)						2.25	2.25						4.50
Harvest (Hours Used)													
Harvest (Wages Paid)													
Custom Harvest								92.00					92.00
Other Custom Work													
Subtotal Labor & Custom Work													
Other Production Expenses													
Seed					1.38								1.38
Fertilizer and Lime					16.92								16.92
Herbicide				4.75									4.75
Insecticide						5.83							5.83
Repairs (Not Including Irr.)													
Tractors	.25	.08	.29	.16	.36	.04	.16						1.34
Equipment	.19		.24	.15	.25		.05						.88
Rents and Leases													
Fuel, Oil, Lub. (Not Including Irr.)													
Tractors	.49	.15	.54	.22	.61	.05	.22						2.28
Equipment													
Taxes													
Insurances													
Transportation Freight													
Other Pickup													
Subtotal Other Production Exp.													
Irrigation Costs													
Hours Used													
Wages Paid					.76	.38	.38						1.52
Repairs (Well Motors & Equipment)					.29	.29	.29						.88
Fuel, Oil, Lubricants					.76	.76	.76						2.28
Subtotal Irrigation Costs													
Other													
Pickup	.50	.50	.50	1.00	.50	.50	.50	1.00					5.00
BeeHive					9.00								9.00
Operating Expenses Less Labor	1.43	.73	1.57	6.28	30.07	7.47	1.98	1.00					
TOTAL OPERATING EXPENSE:	2.06	.93	2.30	7.18	31.23	10.30	5.01	93.00					152.02

CROP 8 Cantaloupes

Table 22.

Months:	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
OPERATING RECEIPTS:													
Number of Units Sold cwt								160					160
Receipts								640.00					\$640.00
OPERATING EXPENSES:													
Labor (Not Including Irrigation)													
Tractor (Hours Used)	(.25)	(.08)	(.29)	(.36)	(.16)	(.08)	(.16)						(1.38)
Tractor (Wages Paid)	.63	.20	.73	.90	.40	.20	.40						3.45
Hoeing (Hours Used)						(1)	(1)						(2)
Hoeing (Wages Paid)						2.25	2.25						4.50
Harvest (Hours Used)													
Harvest (Wages Paid)													
Custom Harvest								73.60					73.60
Other Custom Work													
Subtotal Labor & Custom Work													
Other Production Expenses													
Seed					2.75								2.75
Fertilizer and Lime					16.92								16.92
Herbicide				4.75									4.75
Insecticide & Fungicide						10.43							10.43
Repairs (Not Including Irr.)													
Tractors	.25	.08	.29	.16	.36	.04	.16						1.34
Equipment	.19		.24	.15	.25		.05						.88
Rents and Leases													
Fuel, Oil, Lub. (Not Including Irr.)													
Tractors	.49	.15	.54	.22	.61	.05	.22						2.28
Equipment													
Taxes													
Insurances													
Transportation Freight													
Other Pickup													
Subtotal Other Production Exp.													
Irrigation Costs													
Hours Used													
Wages Paid					.76	1.51	.76						3.03
Repairs (Well Motors & Equipment)					.44	.88	.44						1.76
Fuel, Oil, Lubricants					1.14	2.28	1.14						4.56
Subtotal Irrigation Costs													
Other Pickup & Misc.	.50	.50	.50	1.00	.50	.50	.50	1.00					5.00
Beenive					9.00								9.00
Operating Expenses Less Labor	1.43	.73	1.57	6.28	36.57	9.58	2.51	1.00					
TOTAL OPERATING EXPENSE:	2.06	.93	2.30	7.18	37.73	13.54	5.92	74.60					144.26

CROP 9 Lettuce

Table 23.

Months:	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
OPERATING RECEIPTS:													
Number of Units Sold Carton									500				(500)
Receipts \$ 3.00 / Carton									1500.00				1500.00
OPERATING EXPENSES:													
Labor (Not Including Irrigation)													
Tractor (Hours Used)						(.75)	(1.48)	(.42)					(2.65)
Tractor (Wages Paid)						1.88	3.70	1.05					6.63
Hoeing (Hours Used)								(25)					(25)
Hoeing (Wages Paid)								56.25					56.25
Harvest (Hours Used)													
Harvest (Wages Paid)									750.00				750.00
Custom Harvest													
Other Custom Work													
Subtotal Labor & Custom Work													
Other Production Expenses													
Seed							22.50						22.50
Fertilizer and Lime							50.20						50.20
Herbicide							15.00						15.00
Insecticide								45.00					45.00
Repairs (Not Including Irr.)													
Tractors						.73	1.50	.36					2.59
Equipment						.71	1.21	.25					2.17
Rents and Leases													
Fuel, Oil, Lub. (Not Including Irr.)													
Tractors						1.00	2.20	.61					3.81
Equipment													
Taxes													
Insurances													
Transportation Freight													
Other Pickup													
Subtotal Other Production Exp.													
Irrigation Costs													
Hours Used													
Wages Paid						1.52	3.04	.76					5.30
Repairs (Well Motors & Equipment)						.88	1.76	.44					3.07
Fuel, Oil, Lubricants						2.28	4.56	1.14					7.98
Subtotal Irrigation Costs													
Other					1.25	1.25	1.25	1.25					5.00
Pickup													
Operating Expenses Less Labor And Custom Harvest					3.69	97.02	53.79	2.83					
TOTAL OPERATING EXPENSE:					5.57	102.24	114.13	753.59					975.50

CROP 10 Cotton

Table 24.

Months:	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
OPERATING RECEIPTS:													
Number of Units Sold													
Receipts Lint .40/lb 500 lb.													
Seed \$120 ton .4ton													
											200.00		\$200.00
											48.00		248.00
OPERATING EXPENSES:													
Labor (Not Including Irrigation)													
Tractor (Hours Used)		(.31)	(1.38)		(.42)	(.20)	(.20)					(.45)	(2.96)
Tractor (Wages Paid)		.78	3.45		1.05	.50	.50					1.13	7.41
Hoeing (Hours Used)													
Hoeing (Wages Paid)													
Harvest (Hours Used)													
Harvest (Wages Paid)													
Custom Harvest												56.25	56.25
Other Custom Work													
Subtotal Labor & Custom Work													
Other Production Expenses													
Seed					11.40								11.40
Fertilizer and Lime			26.80										26.80
Herbicide			4.88										4.88
Insecticide						4.50							4.50
Repairs (Not Including Irr.)													
Tractors		.32	1.34		.42	.20	.19					.48	2.95
Equipment		.45	1.06		.37	.15	.06					.48	2.57
Rents and Leases													
Fuel, Oil, Lub. (Not Including Irr.)													
Tractors		.61	1.98		.67	.27	.27					.88	4.68
Equipment													
Taxes													
Insurances					18.17								18.17
Transportation Freight													
Other Pickup													
Subtotal Other Production Exp.													
Irrigation Costs													
Hours Used													
Wages Paid				1.51		.76	.76	.50					3.53
Repairs (Well Motors & Equipment)				.88		.44	.44	.29					2.04
Fuel, Oil, Lubricants				2.28		1.14	1.14	.76					5.32
Subtotal Irrigation Costs													
Other Pickup		.71	.71		.72	.72	.72				.71	.71	5.00
Operating Expenses Less Labor		2.09	36.77	3.16	31.75	7.42	2.82	1.05			.71	2.55	
TOTAL OPERATING EXPENSE:		2.87	40.22	4.67	32.80	8.68	4.07	1.55			56.96	3.68	155.49

CROP 11. Wheat

Table 25.

Months:	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
OPERATING RECEIPTS:													
Number of Units Sold bu.					(37 bu)								
Receipts \$3.75/bu.					138.75								138.75
Grazing .20/lb													40.00
													178.75
OPERATING EXPENSES:													
Labor (Not Including Irrigation)													
Tractor (Hours Used)						(.25)	(.25)	(1.50)					(2.00)
Tractor (Wages Paid)						.63	.62	3.75					5.00
Hoeing (Hours Used)													
Hoeing (Wages Paid)													
Harvest (Hours Used)													
Harvest (Wages Paid)													
Custom Harvest													
Other Custom Work					12.95								12.95
Subtotal Labor & Custom Work													
Other Production Expenses													
Seed								7.00					7.00
Fertilizer and Lime								38.00					38.00
Herbicide													
Insecticide								3.75					3.75
Repairs (Not Including Irr.)													
Tractors						.24	.24	1.48					1.96
Equipment						.24	.24	1.16					1.64
Rents and Leases													
Fuel, Oil, Lub. (Not Including Irr.)													
Tractors						.33	.33	2.48					3.14
Equipment													
Taxes													
Insurances	2.58												2.58
Transportation Freight													
Other Pickup													
Subtotal Other Production Exp.													
Irrigation Costs													
Hours Used													
Wages Paid	.34	.34	.34	.34				.34	.34	.34	.34	.34	3.06
Repairs (Well Motors & Equipment)	.19	.19	.19	.19				.19	.19	.19	.19	.19	1.71
Fuel, Oil, Lubricants	.51	.51	.51	.51				.51	.51	.51	.51	.51	4.55
Subtotal Irrigation Costs													
Other Pickup and Miscellaneous					1.25	1.25	1.25	1.25					5.00
Operating Expenses Less Labor	3.28	.70	.70	.70	1.25	2.06	2.06	55.82	.70	.70	.70	.70	
TOTAL OPERATING EXPENSE:	3.62	1.04	1.04	1.04	14.20	2.69	2.69	59.91	1.04	1.04	1.04	1.04	90.34

CROP 12. Grain Sorghum

Table 26.

Months:	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
OPERATING RECEIPTS:													
Number of Units Sold cwt.										65			(65)
Receipts \$4.25/cwt.										276.25			276.25
OPERATING EXPENSES:													
Labor (Not Including Irrigation)													
Tractor (Hours Used)		(.56)	(.88)	(.16)	(.36)	(.20)					(.45)	(.31)	(2.92)
Tractor (Wages Paid)		1.40	2.20	.40	.90	.50					1.13	.78	7.31
Hoeing (Hours Used)													
Hoeing (Wages Paid)													
Harvest (Hours Used)													
Harvest (Wages Paid)													
Custom Harvest										29.25			29.25
Other Custom Work													
Subtotal Labor & Custom Work													
Other Production Expenses													
Seed					4.92								4.92
Fertilizer and Lime			51.40										51.40
Herbicide					4.43								4.43
Insecticide								7.50					7.50
Repairs (Not Including Irr.)													
Tractors		.56	.86	.16	.36	.19					.44	.32	2.89
Equipment		.64	.47	.15	.68	.06					.48	.24	2.72
Rents and Leases													
Fuel, Oil, Lub. (Not Including Irr.)													
Tractors		.94	1.32	.22	.61	.27					.72	.61	4.69
Equipment													
Taxes													
Insurances													
Transportation Freight													
Other Pickup													
Subtotal Other Production Exp.													
Irrigation Costs													
Hours Used													
Wages Paid				1.51		.76	1.51	.76					4.54
Repairs (Well Motors & Equipment)				.88		.44	.88	.44					2.64
Fuel, Oil, Lubricants				2.28		1.14	2.28	1.14					6.84
Subtotal Irrigation Costs													
Other Pickup and Miscellaneous		.63	.63	.62	.63	.62				.62	.62	.63	5.00
Operating Expenses Less Labor		2.82	54.68	4.31	11.63	2.72	3.16	9.08		.62	2.31	1.80	
TOTAL OPERATING EXPENSE:		4.17	56.88	6.22	12.53	3.98	4.67	9.84		29.87	3.39	2.58	134.13

CROP 13. Corn

Table 27.

Months:	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
OPERATING RECEIPTS:													
Number of Units Sold bu.									150				150
Receipts \$2.87/bu.									430.50				430.50
OPERATING EXPENSES:													
Labor (Not Including Irrigation)													
Tractor (Hours Used)		(.56)	(.88)	(.36)	(.36)						(.45)	(.31)	(2.92)
Tractor (Wages Paid)		1.40	2.20	.90	.90						1.13	.78	7.31
Hoing (Hours Used)													
Hoing (Wages Paid)													
Harvest (Hours Used)													
Harvest (Wages Paid)													
Custom Harvest									42.00				42.00
Other Custom Work													
Subtotal Labor & Custom Work													
Other Production Expenses													
Seed				15.50									15.00
Fertilizer and Lime			57.00										57.00
Herbicide				7.65									7.65
Insecticide													
Repairs (Not Including Irr.)													
Tractors		.56	.86	.36	.35						.44	.32	2.89
Equipment		.64	.47	.68	.21						.48	.24	2.72
Rents and Leases													
Fuel, Oil, Lub. (Not Including Irr.)													
Tractors		.94	1.32	.61	.49						.72	.61	4.69
Equipment													
Taxes													
Insurances				8.87									8.87
Transportation Freight													
Other Pickup													
Subtotal Other Production Exp.													
Irrigation Costs													
Hours Used													
Wages Paid				1.51		.76	1.51	.76					4.54
Repairs (Well Motors & Equipment)				.88		.44	.88	.44					2.64
Fuel, Oil, Lubricants				2.28		1.14	2.28	1.14					6.84
Subtotal Irrigation Costs													
Other													
Pickup and Miscellaneous		.72	.72	.71	.72				.71		.71	.71	5.00
		2.86	60.37	37.54	1.77	1.58	3.16	1.58	.71		2.35	1.88	
TOTAL OPERATING EXPENSE:		4.26	62.57	39.95	2.67	2.34	4.67	2.34	42.71		3.48	2.66	167.65

CROP 14 Soybeans

Table 28.

Months:	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
OPERATING RECEIPTS:													
Number of Units Sold													
bu.													
Receipts									(35)				(35)
\$4.75/bu.									166.25				166.25
OPERATING EXPENSES:													
Labor (Not Including Irrigation)													
Tractor (Hours Used)		(.31)	(1.38)	(.16)	(.21)	(.16)	(.20)				(.20)	(.31)	(2.93)
Tractor (Wages Paid)		.78	3.45	.40	.53	.40	.50				.50	.78	7.34
Hoing (Hours Used)													
Hoing (Wages Paid)													
Harvest (Hours Used)													
Harvest (Wages Paid)													
Custom Harvest									12.25				12.25
Other Custom Work													
Subtotal Labor & Custom Work													
Other Production Expenses													
Seed					9.00								9.00
Fertilizer and Lime			10.40										10.40
Herbicide			4.88										4.88
Insecticide													
Repairs (Not Including Irr.)													
Tractors		.32	1.34	.16	.22	.16	.20				.20	.32	2.92
Equipment		.45	1.06	.15	.17	.15	.06				.29	.24	2.57
Rents and Leases													
Fuel, Oil, Lub. (Not Including Irr.)													
Tractors		.61	1.98	.22	.41	.22	.39				.39	.61	4.83
Equipment													
Taxes													
Insurances													
Transportation Freight													
Other Pickup													
Subtotal Other Production Exp.													
Irrigation Costs													
Hours Used													
Wages Paid				1.51		.76	.76	.50					3.53
Repairs (Well Motors & Equipment)				.88		.44	.44	.29					2.04
Fuel, Oil, Lubricants				2.28		1.14	1.14	.76					5.32
Subtotal Irrigation Costs													
Other													
Pickup and Miscellaneous		.50	1.00	.50	.50	.50	.50	.50	.50		.50	.50	5.00
		1.88	20.66	4.19	10.30	2.61	2.73	1.14	.50		1.38	1.67	
TOTAL OPERATING EXPENSE:		2.66	24.11	6.10	10.83	3.77	3.99	1.55	12.75		1.88	2.45	70.08

SECTION C

INPUT COSTS

Table 29. Assumed Prices Paid by Farmers, Texas High Plains II,
Fine-Textured Soils.

Item	Unit	Price or Cost
Seed:		
Corn	lb.	\$.62
Cotton	lb.	.30
Grain Sorghum	lb.	.41
Soybeans	lb.	.15
Wheat	bu.	7.00
Potato	cwt.	8.00
Carrots	lb.	5.00
Onions	box	7.50
Lettuce	lb.	22.50
Watermelons	lb.	2.75
Green Peppers	oz.	1.50
Cabbage	lb.	37.00
Cucumbers	lb.	8.00
Cantaloupes	lb.	2.75
Custom Rates:		
Combining Soybeans (includes haul)	bu.	.35
Combining Wheat (includes haul)	bu.	.35
Combining Grain Sorghum (includes haul)	cwt.	.45
Corn Harvest (includes haul)	bu.	.28
Cotton Stripping	100 lbs.	1.00
Chemical Spraying (aerial)	ac.	2.00
Chemical Spraying (ground)	ac.	1.75
Cotton Ginning	500# bale	31.25
Fuel and Lubricants:		
Diesel Fuel	gal.	.31
Motor Oil (heavy duty detergent)	gal.	2.60
Lubricant	lb.	.50
Fertilizer:		
Anhydrous Ammonia	lb.	.17
Nitrogen (granular)	lb.	.28
Phosphate	lb.	.25
Potash	lb.	.21
Labor:		
Tractor and Machinery	hr.	2.50
Irrigation	hr.	2.00
Hoeing and Vegetable Labor	hr.	2.25

Table 29(continued)

Item	Unit	Price or Cost
Chemicals:		
Treflan	5 gal.	\$ 130.00
Caporal	lb.	3.25
Atrazine	lb.	2.90
Propzaine	lb.	2.95
Dacthal (75% WP)	lb.	1.63
Balan	gal.	10.00
Methyl Parathion	gal.	8.15
Malthion	gal.	15.85
Di-Syston (15% gram)	lb.	.37
Land Lease:		
General	ac.	36.00
Vegetables	ac. ¹	
Hail Insurance: ²		
Wheat	\$100	14.73
Cotton	\$100	18.17
Corn	\$100	14.78
Irish Potatoes	\$100	9.72
Carrots	\$100	21.15
Lettuce	\$100	21.15
Watermelons	\$100	21.15
Green Peppers	\$100	21.15
Cabbage	\$100	21.15
Cucumbers	\$100	21.15
Cantaloupes	\$100	21.15
Interest:		
Capital	\$	.09
Operating	\$	.095
Hired Labor Vegetable Harvest:		
Potato Harvest	cwt.	.48
Potato Hauling and Handling	cwt.	1.75
Onion Harvest	cwt.	.90
Onion Processing	cwt.	.55
Watermelon Harvest	cwt.	.46
Cantaloupe Harvest	cwt.	.46
Lettuce	carton	1.50
Cabbage Harvest and Process	sack	.50

¹ 1/5 of Gross Receipts less 80% of irrigation fixed costs.

² Crop-Hail Insurance Actuarial Association, Rates and Rules for Crop-Hail Insurance (Chicago: 1973), pp. 8-48.

Table 30. Estimated Costs and Requirements Per Acre, Insurance, Corn (General)¹, Cotton (XC10)¹, and Wheat (XC10)¹, per \$100 of Insurance, Texas High Plains II, Fine-Textured Soils

County	Low	High	Mean
<u>CORN</u>			
Castro	13.20	20.20	16.70
Deaf Smith	12.20	15.20	13.70
Hale	13.20	16.20	14.70
Lamb	14.20	14.20	14.20
Floyd	12.20	17.20	14.70
Parmer	12.20	17.20	<u>14.70</u>
Average			14.78
<u>COTTON</u>			
Castro	18.00	24.00	21.00
Deaf Smith	18.00	18.00	18.00
Hale	14.00	20.00	17.00
Lamb	16.00	21.00	18.50
Floyd	11.00	19.00	15.00
Parmer	19.00	19.00	<u>19.00</u>
Average			18.08
<u>WHEAT</u>			
Castro	13.15	20.15	16.65
Deaf Smith	12.15	15.15	13.65
Hale	13.15	16.15	14.65
Floyd	12.15	17.15	14.65
Parmer	12.15	17.15	14.65
Lamb	14.15	14.15	<u>14.15</u>
Average			14.73

¹ XC10 indicates excess over 10% loss, rate reducing provisions on all crops.

Table 31. Assumed Prices Received by Farmers, Texas High Plains II,
Fine-Textured Soils

Crop	Unit	Price
Cotton	1b. lint	\$.40
Cottonseed	ton	120.00
Wheat	bu.	3.75
Grain Sorghum	cwt.	4.25
Corn for Grain	bu.	2.40
Soybeans	bu.	4.75
Carrots (Cleaned)	ton	30.00
Onions (Graded)	50# bag	3.00
Irish Potatoes	cwt.	6.00
Cantaloupes	cwt.	4.00
Watermelons	1b.	.025
Lettuce	carton	3.00
Cabbage	sack	2.00
Pickling Cucumbers	cwt.	3.50
Green Peppers	lbs.	.04

Table 32. New Cost, Estimated Years Until Obsolete, Typical Years of Use, Hours of Use to Wear-Out, Annual Use in Hours, Trade in Value, Total Depreciation, Total Repairs for Years of Use, Annual Repair Cost, and TAR % of Farm Machinery. Texas High Plains II, Typical Management

Machinery Item and Size	Item No.	New Cost <u>1/</u>	Estimated Years Until Obsolete <u>2/</u>	Estimated Typical Years of Use <u>3/</u>	Estimated Hours of Use to Wear-Out <u>2/ 4/</u>
Tractor 120 HP	1	\$19,750	15	5	12,000
Tractor 85 HP	2	14,800	15	8	12,000
Rolling Cultivator 6R	3	2,750	12	8	12,000
Oneway 15'	4	2,600	15	10	2,500
4-Bottom Moldboard	5	3,200	15	8	2,500
Chisel 13'	6	2,250	20	8	2,500
Float 40 x 12	7	3,200	20	10	2,500
Flex Planter 6R	8	1,700	15	5	1,200
Lister Planter 6R	9	2,700	15	8	1,200
Tandem Disc 14'	10	2,850	15	8	2,500
Double Offset Disc 14'	11	4,300	15	8	2,500
Grain Drill 20 x 8	12	2,350	20	10	1,200
Sandfighter 9R	13	395	20	10	2,500
Tool Bar 4 x 7 x 22	14	850	25	12	2,500
Herbicide Sprayer 8R	15	550	10	10	2,000
Shredder 4R	16	2,800	12	8	2,000
Rod Weeder 6R	17	560	20	10	2,500
Blade 8'	18	725	20	10	2,500

1/ Area farm machinery dealers and area producers.

2/ R. A. Kepner, Farm Machinery Costs and Use (St. Joseph, Michigan: American Society of Agricultural Engineers, 1965; reprint edition, St. Joseph, Agricultural Engineers Yearbook, 1972), p. 252.

3/ Texas Agricultural Extension Service, 1972 Crop Budgets, Texas A&M 1972.

4/ Agricultural Engineers Yearbook, 1972, "Agricultural Machinery Management Data", (St. Joseph, Michigan: American Society of Agricultural Engineers, 1972), pp. 299-306.

Table 32(continued)

Machinery Item and Size	Item No.	Esti. Annual Use in Hours	Trade in Value	Total Depre. Over Years of Use	Total Accum. Repairs for Years of Use	Annual Repair Cost	TAR % No.
		<u>3/</u>	<u>5/</u>	<u>6/</u>	<u>7/</u>	<u>8/</u>	
Tractor 120 HP	1	1,000	\$8143.35	\$11,606.65	\$6374.29	\$1274.86	2
Tractor 85 HP	2	1,000	4751.83	10,048.17	9667.32	1208.41	2
Rolling Culti- vator 6R	3	200	549.51	2,200.49	1844.73	203.59	7
Oneway 15'	4	150	406.91	2,193.09	1603.68	160.37	7
4-Bottom Mold- board	5	200	639.43	2,560.57	2146.56	268.32	7
Chisel 13'	6	200	449.55	1,800.45	1509.30	188.66	7
Float 40 x 12	7	100	500.81	2,699.19	537.41	53.74	3
Flex Planter 6R	8	200	490.07	1,209.93	618.97	123.79	7
Lister Planter 6R	9	125	539.52	2,160.48	983.12	122.09	7
Tandem Disc 14'	10	200	569.43	2,280.57	1911.81	238.98	7
Double Offset Disc 14'	11	200	859.14	3,440.86	2884.44	360.56	7
Grain Drill 20 x 8	12	120	367.79	1,982.21	1093.78	109.38	7
Sandfighter 9R	13	100	61.82	333.18	66.34	6.63	3
Tool Bar 4 x 7 x 22	14	166	104.19	745.81	762.08	63.51	7
Herbicide Sprayer	15	200	0	550.00	551.77	55.18	5
Shredder 4R	16	125	559.50	2,240.50	642.67	80.33	3
Rod Weeder 6R	17	240	161.44	398.56	258.44	51.69	7
Blade 8'	18	200	113.47	611.53	321.32	32.13	3

5/ New Cost (Estimated Typical Years of Use) (Estimated Annual Use in Hours) (New Cost)/Estimated Hours of Use to Wear-Out.

6/ New Cost - Trade in Value

7/ Repair and Maintenance Cost include Daily Servicing and Lubrication of all Machines. Based on formulas in "Agricultural Machinery Management Data", Agricultural Engineers Yearbook, 1972.

8/ Total Annual Repairs/Years of Use.

Table 33. Estimated Machinery and Equipment Cost Per Hour of Use, Texas High Plains II, Fine-Textured Soils.

Item	Item No.	New Cost	Trade in Value	Estimated Typical Years of Use	Estimated Total Hours of Use	Fixed Costs Per Hour	Fuel, Oil, Lub., Rep., Per Hour
Tractor 120 HP	1	\$19,750	\$8143.35	5	5,000	\$3.58	\$3.71
Tractor 85 HP	2	14,800	4751.83	8	8,000	2.14	2.87
Rolling Cultivator 6R	3	2,750	549.51	8	1,600	2.12	1.15
Oneway	4	2,600	406.91	10	1,500	2.36	1.07
4-Bottom Moldboard	5	3,200	639.43	8	1,600	2.46	1.34
Chisel 13'	6	2,250	449.55	8	1,600	1.73	0.94
Float 40 x 12	7	3,200	500.81	10	1,000	4.36	0.54
Flex Planter 6R	8	1,700	490.07	5	1,000	1.70	0.62
Lister Planter 6R	9	2,700	539.52	8	1,000	3.33	.98
Tandem Disc 14'	10	2,850	569.43	8	1,600	2.19	1.19
Double Offset Disc 14'	11	4,300	859.14	8	1,600	3.31	1.80
Grain Drill 20 x 8	12	2,350	367.79	10	1,200	2.67	0.91
Sandfighter 9R	13	395	61.82	10	1,000	0.54	0.07
Tool Bar 4 x 7 x 22	14	850	104.19	12	2,000	0.63	0.38
Herbicide Sprayer 8R	15	550	0	10	2,000	0.40	0.28
Shredder 4R	16	2,800	559.50	8	1,000	3.45	0.64
Rod Weeder 6R	17	560	161.44	5	1,200	0.47	0.22
Blade 8'	18	725	113.47	10	2,000	0.49	0.16

Table 34. Assumed Yields Per Acre For Typical Management (Irrigated),
Texas High Plains II, Fine-Textured Soils.

Crop	Unit	Amount	Source
Cotton	lbs.	500	1
Cottonseed	ton	.4	1
Corn for Grain	bu.	110	1
Grain Sorghum	cwt.	65	1
Soybeans	bu.	35	1
Wheat for Grain	bu.	37	1
Wheat for Grain	lb. gain	200	1
Wheat for Grazing	lb. gain	460	1
Carrots	tons	8.0	2
Onions	50# bag	500.0	2
Irish Potatoes	cwt.	200	2
Cantaloupes	cwt.	160	2
Green Peppers	cwt.	150	2
Watermelons	cwt.	200	2
Cucumbers (Pickling)	cwt.	200	2
Lettuce	carton	500	2
Cabbage	sack	550	2

Table 35.

IRRIGATION WORK SHEET

<u>Item Number</u>	<u>Description</u>
A	Well
B	Motor
C	Pump
D	Underground Distribution System
E	Gated Pipe and Shutoff Valves
F	Natural Gas Line

PRELIMINARY CALCULATIONS

Well Depth	265
Depth to Static Water Level	180
Present Saturated Zone (in feet) (PT)	100
Initial Well Capacity (gpm) (IC)	600
Initial Saturated Zone (in feet) (IT)	
Present gpm = $Q = IC \times \left(\frac{PT}{IT}\right)^2 =$	

REPLACEMENT COST CALCULATIONS

Well Cost (Item B)	
Well depth x <u> </u> \$15 /ft. =	3,975.00
(includes casing)	
<u> </u> 80 yds of gravel @ <u> </u> \$10 /yd =	800.00
Perforation cost = <u> </u> 2.00 /ft x <u> </u> 100 ft. =	200.00
Slush pit =	75.00
<u> </u> 25 hrs baling x <u> </u> \$30.00 /hr =	750.00
Total Well Cost	5,800.00
Number of acres per well	84.62

<u>New Cost Item</u>		
B	=	1,000.00
C (includes column pipe)	=	5,500.00
D <u> </u> 1,531 ft. x <u> </u> \$2.00 /ft	=	3,827.50
E <u> </u> 12 joints x <u> </u> \$44.50 /jt	=	534.00
F <u> </u> 1320 ft/ x <u> </u> \$0.75 /ft.	=	990.00

Calculation of bhp = X_0

$$X = \frac{QP}{3960q} =$$

Where P = lift expressed in feet, and q = efficiency of pump (water horsepower $\frac{1}{/}$ / brake horsepower)

1/ 1 WHP will lift 1 cubic foot of water per second a vertical distance of 8.8 feet

Table 35(continued)

OWNERSHIP COSTS CALCULATIONS

a) New Cost	(a) <u>5,800.00</u>	(b) <u>1,000.00</u>	(c) <u>5,500.00</u>
	(d) <u>3,827.50</u>	(e) <u>534.00</u>	(f) <u>990.00</u>
b) Trade in Value	<u>0</u>		
c) Planned years of use	(a) <u>20</u>	(b) <u>5</u>	(c) <u>14</u> (d) <u>20</u>
	(e) <u>5</u>	(f) <u>20</u>	
d) Interest rate	<u>9%</u>		
e) Annual use	(a) <u>2,000</u>	(b) <u>2,000</u>	(c) <u>2,000</u> (d) <u>2,000</u> (e) <u>2,000</u>
	(f) <u>2,000</u>		

	ITEM		
	A	B	C
1. Depreciable value a _____ - b _____ = \$ _____	<u>5800.00</u>	<u>1000.00</u>	<u>5500.00</u>
<u>Straight Line Method</u>			
2. Annual Depreciation (Line 1 _____ ÷ c _____)	<u>290.00</u>	<u>200.00</u>	<u>393.00</u>
3. Interest on Average Investment			
[(a _____ + b _____) ÷ 2] x d _____	<u>261.00</u>	<u>45.00</u>	<u>248.00</u>
4. Ownership cost per year (sum lines 2 & 3)	<u>551.00</u>	<u>245.00</u>	<u>641.00</u>
5. Ownership cost per hour (line 4 ÷ e)	<u>0.276</u>	<u>0.123</u>	<u>0.32</u>

	ITEM		
	D	E	F
1. Depreciable value a _____ - b _____ = \$ _____	<u>827.50</u>	<u>534.00</u>	<u>990.00</u>
<u>Straight Line Method</u>			
2. Annual Depreciation (Line 1 _____ ÷ c _____)	<u>191.38</u>	<u>106.80</u>	<u>49.50</u>
3. Interest on Average Investment			
[(a _____ + b _____) ÷ 2] x d _____	<u>172.24</u>	<u>24.03</u>	<u>44.55</u>
4. Ownership cost per year (sum lines 2 & 3)	<u>363.62</u>	<u>130.83</u>	<u>94.05</u>
5. Ownership cost per hour (line 4 ÷ e)	<u>0.181</u>	<u>0.065</u>	<u>0.047</u>

OPERATING COSTS CALCULATIONS: 2/ITEM A

Average repair cost per hour (K)

$$K = \frac{LN}{M} = \underline{\quad .12 \quad}$$

L = new cost and

N = the following percentage factors

M = number of hours to wear out

2/ Average repair cost per hour ($K = \frac{LN}{M}$)

$$\text{Item: A. } \frac{5800(.10)}{43,000} = 0.013. \quad \text{B. } \frac{1000(1.26)}{10,000} = 0.126$$

Engine Oil Consumption (1 quart every 12 hours plus oil change every 150 hours. Filter changed every other oil change). 240 quarts oil per year x \$0.443 per qt. = \$106.32

6.5 filters per year x \$7.65 per filter = 49.73

Oil and filter cost per year = 156.05

$$\frac{156.05}{2000} = \$0.078 \text{ per hour. } 0.126 + 0.078 = 0.204 \text{ per hour.}$$

Table 35(continued)

<u>ITEM</u>	<u>N</u>
Automobile Motor	126
Well	10
Pump	27
Gas Line	43
Gated Pipe and Shutoff Valves	20
Underground Distribution System	39

Fuel Requirement per hour of operation (cu. ft.)

$$F = a_i x_0 = 949$$

a_i = natural gas constant of 13 and x_0 = bhp

Fuel cost per hour of operation

$$G = FH = .431 \text{ } \underline{3/}$$

Where H = cost per unit of natural gas consumed.

First 2000 cu. ft. or less per month,	\$2.28
Next 8000 cu. ft. or less per month,	\$.8752/MCF
Next 40,000 cu. ft. or less per month,	\$.8012/MCF
Next 50,000 cu. ft. or less per month,	\$.4982/MCF
Next 4,000,000 cu. ft. or less per month,	\$.4582/MCF
Next 500,000 cu. ft. or less per month,	\$.4182/MCF
Next 1,000,000 cu. ft. or less per month,	\$.3982/MCF

Total Operating Costs Item B (K + G) 0.635

$$K = \frac{LN}{M} = \frac{\text{ITEM A}}{0.01} \quad \frac{\text{ITEM C}}{0.05} \quad \frac{\text{ITEM D}}{0.03} \quad \frac{\text{ITEM E}}{0.01} \quad \frac{\text{ITEM F}}{0.01}$$

TOTAL COSTS CALCULATIONS (per hour)

<u>ITEM</u>	
A	<u>0.29</u>
B	<u>0.758</u>
C	<u>0.37</u>
D	<u>0.21</u>
E	<u>0.08</u>
F	<u>0.06</u>

CONVERSION OF COST PER HOUR TO COST PER ACRE INCH

$$\frac{\text{Current GPM}}{453 \text{ GPM}} = X \text{ acre inches per hour}$$

3/ Fuel cost per hour was determined at \$0.544. The costs are calculated without the fuel adjustment factor.

Table 35(continued)

$$\frac{\text{Cost per-Hour (C)}}{X \text{ acre inches}} = \frac{Y}{1 \text{ acre inch}}$$

$$Y = \frac{C}{X} = \underline{\hspace{10em}}$$

ACRE INCH COSTS ^{4/}

<u>ITEM</u>	<u>FIXED</u>	<u>VARIABLE</u>	<u>TOTAL</u>
A	0.104	0.005	0.109
B	0.092	0.479	0.571
C	0.12	0.019	0.139
D	0.068	0.012	0.080
E	0.025	0.004	0.029
F	0.018	0.004	0.022

LABOR REQUIREMENTS PER ACRE INCH (Z) (one hour of labor is required for every six hours of pumping time)

$$\frac{1 \text{ Hour}}{W} = \frac{Z}{1 \text{ acre inch}}$$

Where W = 6 hours times acre inches
previously determined (X)

$$Z = 1/W = \underline{0.126}$$

^{4/} All items except engine were assumed to retain only half the useful life. Costs were determined by assuming 50% of all fixed costs except engine.

Table 36. Estimated Fixed Costs and Fuel Oil, Lubrication, and Repair Costs Per Acre Inch, Texas High Plains II, Fine-Textured Soils.

Item	Fixed Cost Per Acre Inch	Oil, Lubrication Repairs Per Acre Inch
Well	.104	.005
Pump	.120	.019
Motor	.092	.479
Underground Dist.	.068	.012
Gated Pipe and Shutoff Valves	.025	.004
Natural Gas Line	<u>.018</u>	<u>.004</u>
Total Irrigation Cost Per Acre Inch	.427	.526

SECTION D

Table 37. Machinery Cost Worksheet

Machine	<u>Tractor 120 H.P.</u>	Fuel	<u>Diesel</u>	Machine No.	<u>1</u>
a) New Cost	<u>19,750</u>	d) Interest rate	<u>.09</u>		
b) Trade-in Value	<u>1/ 8143.35</u>	e) Annual use	<u>1000</u>	hours	
c) Planned years of use	<u>5</u>				
A. OWNERSHIP COSTS					Subtotal
1.	Depreciable value a <u>19,750</u> - b <u>8143.35</u> \$ <u>11,606.65</u>				
	<u>Straight Line Method</u>				
2.	Annual Depreciation (Line 1 <u>11,606.65</u> ÷ c <u>5</u>)				\$ <u>2,321.33</u>
3.	Interest on Average Investment				
	[(a <u>19750</u> + b <u>8143.35</u>) ÷ 2] x d <u>.09</u>				\$ <u>1,255.20</u>
4.	Ownership cost per year (sum lines 2 and 3)				\$ <u>3,576.53</u>
5.	Ownership cost per hour (line 4 ÷ e)				\$ <u>3.53</u>
B. OPERATING COSTS					
6.	Accumulated repairs (TAR) <u>1/</u> for years of use.				\$ <u>6,374.29</u>
7.	Average repair cost per year [(line 6) ÷ c]				\$ <u>1,274.86</u>
8.	Average repair cost per hour [(line 7) ÷ e]				\$ <u>1.27</u>
9.	Tractor fuel consumption per hour (.06 ^{2/} x P10 HP)				
	Fuel <u>7.2</u> gal/hr x \$ <u>.31</u> per gal. = \$ <u>2.33</u> per hr.				
10.	Tractor oil consumption (based on one quart every 20 hrs. plus oil change every 100 hrs.)				
	oil <u>42.5</u> gals. per year x \$ <u>2.60</u> per gal.				
	\$ <u>110.50</u> ÷ <u>1000</u> hours = \$ <u>0.11</u> per hour.				
11.	Fuel and oil cost per hour				\$ <u>2.44</u>
12.	Operating cost per hour (line 8 + line 11)				\$ <u>3.71</u>
C. TOTAL COST PER HOUR					
13.	Total cost per hour (line 5 + line 12)				\$ <u>7.29</u>

^{1/} See "Agriculture Machinery Management Data," 1972 Agricultural Engineers Yearbook (St. Joseph, Michigan: ASAE, 1972), pp. 299-306.

<u>Equation No.</u>	<u>Trade-in %</u>	<u>Equation No.</u>	<u>TAR %</u>
1. Tractors	% = 68 (0.920) ⁿ	1	TAR% = 0.100(x) ^{1.5}
2. Group 1 Implements	% = 64 (0.885) ⁿ	2	TAR% = 0.120(x) ^{1.5}
3. Group 2 Implements	% = 60 (0.885) ⁿ	3	TAR% = 0.096(x) ^{1.4}
4. Group 3 Implements	% = 56 (0.885) ⁿ	4	TAR% = 0.127(x) ^{1.4}
		5	TAR% = 0.159(x) ^{1.4}
		6	TAR% = 0.191(x) ^{1.4}
		7	TAR% = 0.301(x) ^{1.3}

n = Est. years use + 1

TAR is the accumulated repair cost to date divided by the list price, expressed as a percentage, and x is 100 times the ratio of the accumulated hours of use to the wear-out life. The trade-in value is the new cost times the trade-in percentage.

^{2/} Estimated from data given in reference 1.

Table 38. Machinery Cost Worksheet

Machine Tractor 85 H. P. Fuel Diesel Machine No. 2

a) New Cost 14,800 d) Interest rate .09
 b) Trade-in Value 1/ 4751.83 e) Annual use 1000 hours
 c) Planned years of use 8

A. OWNERSHIP COSTS Subtotal

1. Depreciable value a 14800 - b 4751.83 = \$ 10,048.17
Straight Line Method

2. Annual Depreciation (Line 1 10048.17 ÷ c 8) \$ 1256.02

3. Interest on Average Investment
 [(a 14800 + b 4751.83) ÷ 2] x d .09 \$ 879.83

4. Ownership cost per year (sum lines 2 and 3) \$ 2135.85

5. Ownership cost per hour (line 4 ÷ e) \$ 2.14

B. OPERATING COSTS

6. Accumulated repairs (TAR) 1/ for years of use. \$ 9667.32

7. Average repair cost per year [(line 6) ÷ c] \$ 1208.41

8. Average repair cost per hour [(line 7) ÷ e] \$ 1.21

9. Tractor fuel consumption per hour (.06^{2/} x P10 HP)
 Fuel 5.1 gal/hr x \$.31 per gal. = \$ 1.58 per hr.

10. Tractor oil consumption (based on one quart every 20 hrs. plus
 oil change every 100 hrs.)
 oil 30.0 gals. per year x \$ 2.60 per gal.
 \$ 78 ÷ 1000 hours = \$.08 per hour.

11. Fuel and oil cost per hour \$ 1.66

12. Operating cost per hour (line 8 + line 11) \$ 2.87

C. TOTAL COST PER HOUR

13. Total cost per hour (line 5 + line 12) \$ 5.01

1/ See "Agriculture Machinery Management Data," 1972 Agricultural Engineers Yearbook (St. Joseph, Michigan: ASAE, 1972), pp. 299-306.

<u>Equation No.</u>	<u>Trade-in %</u>	<u>Equation No.</u>	<u>TAR %</u>
1. Tractors	% = 68 (0.920) ⁿ	1	TAR% = 0.100(x) ^{1.5}
2. Group 1 Implements	% = 64 (0.885) ⁿ	2	TAR% = 0.120(x) ^{1.5}
3. Group 2 Implements	% = 60 (0.885) ⁿ	3	TAR% = 0.096(x) ^{1.4}
4. Group 3 Implements	% = 56 (0.885) ⁿ	4	TAR% = 0.127(x) ^{1.4}
		5	TAR% = 0.159(x) ^{1.4}
		6	TAR% = 0.191(x) ^{1.4}
		7	TAR% = 0.301(x) ^{1.3}

n = Est. years use + 1

TAR is the accumulated repair cost to date divided by the list price, expressed as a percentage, and x is 100 times the ratio of the accumulated hours of use to the wear-out life. The trade-in value is the new cost times the trade-in percentage.

2/ Estimated from data given in reference 1.

Table 39. Machinery Cost Worksheet

Machine Rolling Cultivator-6R Fuel Machine No. 3

- a) New Cost 2,750 d) Interest rate .09
 b) Trade-in Value 1/ 549.51 e) Annual use 200 hours
 c) Planned years of use 8

A. OWNERSHIP COSTS

Subtotal

1. Depreciable value a 2,750 - b 549.51 = \$ 2200.49
Straight Line Method
 2. Annual Depreciation (Line 1 2200.49 ÷ c 8) \$ 275.06
 3. Interest on Average Investment
 [(a 2750 + b 549.51) ÷ 2] x d .09 \$ 148.48
 4. Ownership cost per year (sum lines 2 and 3) \$ 423.54
 5. Ownership cost per hour (line 4 ÷ e) \$ 2.12

B. OPERATING COSTS

6. Accumulated repairs (TAR) 1/ for years of use. \$ 1,844.73
 7. Average repair cost per year [(line 6) ÷ c] \$ 230.59
 8. Average repair cost per hour [(line 7) ÷ e] \$ 1.15
 9. Tractor fuel consumption per hour (.06^{2/} x PTO HP)
 Fuel _____ gal/hr x \$ _____ per gal. = \$ _____ per hr.
 10. Tractor oil consumption (based on one quart every 20 hrs. plus
 oil change every 100 hrs.)
 oil _____ gals. per year x \$ _____ per gal.
 \$ _____ ÷ _____ hours = \$ _____ per hour.
 11. Fuel and oil cost per hour \$ 0
 12. Operating cost per hour (line 8 + line 11) \$ 1.15

C. TOTAL COST PER HOUR

13. Total cost per hour (line 5 + line 12) \$ 3.27

^{1/} See "Agriculture Machinery Management Data," 1972 Agricultural Engineers Yearbook (St. Joseph, Michigan: ASAE, 1972), pp. 299-306.

Equation No.	Trade-in %	Equation No.	TAR %
1. Tractors	% = 68 (0.920) ⁿ	1	TAR% = 0.100(x) ^{1.5}
2. Group 1 Implements	% = 64 (0.885) ⁿ	2	TAR% = 0.120(x) ^{1.5}
3. Group 2 Implements	% = 60 (0.885) ⁿ	3	TAR% = 0.096(x) ^{1.4}
4. Group 3 Implements	% = 56 (0.885) ⁿ	4	TAR% = 0.127(x) ^{1.4}
		5	TAR% = 0.159(x) ^{1.4}
		6	TAR% = 0.191(x) ^{1.4}
		7	TAR% = 0.301(x) ^{1.3}

TAR is the accumulated repair cost to date divided by the list price, expressed as a percentage, and x is 100 times the ratio of the accumulated hours of use to the wear-out life. The trade-in value is the new cost times the trade-in percentage.

^{2/} Estimated from data given in reference 1.

Table 40. Machinery Cost Worksheet

Machine Oneway 15' Fuel --- Machine No. 4

a) New Cost 2,600 d) Interest rate .09
 b) Trade-in Value 1/ 406.91 e) Annual use 150 hours
 c) Planned years of use 10

A. OWNERSHIP COSTS Subtotal

1. Depreciable value a 2600 - b 406.91 = \$ 2193.09
Straight Line Method

2. Annual Depreciation (Line 1 2193.09 ÷ c 10) \$ 219.31

3. Interest on Average Investment
 [(a 2600 + b 406.91) ÷ 2] x d .09 \$ 135.31

4. Ownership cost per year (sum lines 2 and 3) \$ 354.62

5. Ownership cost per hour (line 4 ÷ e) \$ 2.36

B. OPERATING COSTS

6. Accumulated repairs (TAR) 1/ for years of use. \$ 1,603.68

7. Average repair cost per year [(line 6) ÷ c] \$ 160.37

8. Average repair cost per hour [(line 7) ÷ e] \$ 1.07

9. Tractor fuel consumption per hour (.06^{2/} x P10 HP)
 Fuel _____ gal/hr x \$ _____ per gal. = \$ _____ per hr.

10. Tractor oil consumption (based on one quart every 20 hrs. plus
 oil change every 100 hrs.)
 oil _____ gals. per year x \$ _____ per gal.
 \$ _____ ÷ _____ hours = \$ _____ per hour.

11. Fuel and oil cost per hour \$ -0-

12. Operating cost per hour (line 8 + line 11) \$ 1.07

C. TOTAL COST PER HOUR

13. Total cost per hour (line 5 + line 12) \$ 3.43

^{1/} See "Agriculture Machinery Management Data," 1972 Agricultural Engineers Yearbook (St. Joseph, Michigan: ASAE, 1972), pp. 299-306.

<u>Equation No.</u>	<u>Trade-in %</u>	<u>Equation No.</u>	<u>TAR %</u>
1. Tractors	% = 68 (0.920) ⁿ	1	TAR% = 0.100(x) ^{1.5}
2. Group 1 Implements	% = 64 (0.885) ⁿ	2	TAR% = 0.120(x) ^{1.5}
3. Group 2 Implements	% = 60 (0.885) ⁿ	3	TAR% = 0.096(x) ^{1.4}
4. Group 3 Implements	% = 56 (0.885) ⁿ	4	TAR% = 0.127(x) ^{1.4}
		5	TAR% = 0.159(x) ^{1.4}
		6	TAR% = 0.191(x) ^{1.4}
		7	TAR% = 0.301(x) ^{1.3}

n = Est. years use + 1

TAR is the accumulated repair cost to date divided by the list price, expressed as a percentage, and x is 100 times the ratio of the accumulated hours of use to the wear-out life. The trade-in value is the new cost times the trade-in percentage.

^{2/} Estimated from data given in reference 1.

Table 41. Machinery Cost Worksheet

Machine 4 Bottom Moldboard Fuel ---- Machine No. 5

- a) New Cost 3200 d) Interest rate .09
 b) Trade-in Value 1/ 639.43 e) Annual use 200 hours
 c) Planned years of use 8

A. OWNERSHIP COSTS

Subtotal

1. Depreciable value a 3200 - b 639.43 = \$ 2560.57
Straight Line Method
 2. Annual Depreciation (Line 1 + c 8) \$ 320.07
 3. Interest on Average Investment
 [(a + b) + 2] x d \$ 172.77
 4. Ownership cost per year (sum lines 2 and 3) \$ 492.84
 5. Ownership cost per hour (line 4 + e) \$ 2.46

B. OPERATING COSTS

6. Accumulated repairs (TAR) 1/ for years of use. \$ 2,146.56
 7. Average repair cost per year [(line 6) + c] \$ 268.32
 8. Average repair cost per hour [(line 7) 2/ e] \$ 1.34
 9. Tractor fuel consumption per hour (.06 2/ x PTO HP)
 Fuel gal/hr x \$ per gal. = \$ per hr.
 10. Tractor oil consumption (based on one quart every 20 hrs. plus
 oil change every 100 hrs.)
 oil gals. per year x \$ per gal.
 \$ + hours = \$ per hour.
 11. Fuel and oil cost per hour \$ -0-
 12. Operating cost per hour (line 8 + line 11) \$ 1.34

C. TOTAL COST PER HOUR

13. Total cost per hour (line 5 + line 12) \$ 3.80

1/ See "Agriculture Machinery Management Data," 1972 Agricultural Engineers Yearbook (St. Joseph, Michigan: ASAE, 1972), pp. 299-306.

<u>Equation No.</u>	<u>Trade-in %</u>	<u>Equation No.</u>	<u>TAR %</u>
1. Tractors	% = 68 (0.920) ⁿ	1	TAR% = 0.100(x) ^{1.5}
2. Group 1 Implements	% = 64 (0.885) ⁿ	2	TAR% = 0.120(x) ^{1.5}
3. Group 2 Implements	% = 60 (0.885) ⁿ	3	TAR% = 0.096(x) ^{1.4}
4. Group 3 Implements	% = 56 (0.885) ⁿ	4	TAR% = 0.127(x) ^{1.4}
		5	TAR% = 0.159(x) ^{1.4}
		6	TAR% = 0.191(x) ^{1.4}
		7	TAR% = 0.301(x) ^{1.3}

n = Est. years use + 1

TAR is the accumulated repair cost to date divided by the list price, expressed as a percentage, and x is 100 times the ratio of the accumulated hours of use to the wear-out life. The trade-in value is the new cost times the trade-in percentage.

2/ Estimated from data given in reference 1.

Table 42. Machinery Cost Worksheet

Machine Chisel 13' Fuel ---- Machine No. 6

a) New Cost 2250 d) Interest rate .09
 b) Trade-in Value 1/ 449.55 e) Annual use 200 hours
 c) Planned years of use 8

A. OWNERSHIP COSTS

Subtotal

1. Depreciable value a 2250 - b 449.55 = \$ 1800.45
Straight Line Method
2. Annual Depreciation (Line 1 1800.45 ÷ c 8) \$ 225.06
3. Interest on Average Investment
 [(a 2250 + b 449.55) ÷ 2] x d .09 \$ 121.48
4. Ownership cost per year (sum lines 2 and 3) \$ 346.54
5. Ownership cost per hour (line 4 ÷ e) \$ 1.73

B. OPERATING COSTS

6. Accumulated repairs (TAR) 1/ for years of use. \$ 1,509.30
7. Average repair cost per year [(line 6) ÷ c] \$ 188.66
8. Average repair cost per hour [(line 7) ÷ e] \$ 0.94
9. Tractor fuel consumption per hour (.06²⁷ x PTO HP)
 Fuel _____ gal/hr x \$ _____ per gal. = \$ _____ per hr.
10. Tractor oil consumption (based on one quart every 20 hrs. plus
 oil change every 100 hrs.)
 oil _____ gals. per year x \$ _____ per gal.
 \$ _____ ÷ _____ hours = \$ _____ per hour.
11. Fuel and oil cost per hour \$ -0-
12. Operating cost per hour (line 8 + line 11) \$ 0.94

C. TOTAL COST PER HOUR

13. Total cost per hour (line 5 + line 12) \$ 3.67

1/ See "Agriculture Machinery Management Data," 1972 Agricultural Engineers Yearbook (St. Joseph, Michigan: ASAE, 1972), pp. 299-306.

<u>Equation No.</u>	<u>Trade-in %</u>	<u>Equation No.</u>	<u>TAR %</u>
1. Tractors	% = 68 (0.920) ⁿ	1	TAR% = 0.100(x) ^{1.5}
2. Group 1 Implements	% = 64 (0.885) ⁿ	2	TAR% = 0.120(x) ^{1.5}
3. Group 2 Implements	% = 60 (0.885) ⁿ	3	TAR% = 0.096(x) ^{1.4}
4. Group 3 Implements	% = 56 (0.885) ⁿ	4	TAR% = 0.127(x) ^{1.4}
		5	TAR% = 0.159(x) ^{1.4}
		6	TAR% = 0.191(x) ^{1.4}
		7	TAR% = 0.301(x) ^{1.3}

n = Est. years use + 1

TAR is the accumulated repair cost to date divided by the list price, expressed as a percentage, and x is 100 times the ratio of the accumulated hours of use to the wear-out life. The trade-in value is the new cost times the trade-in percentage.

2/ Estimated from data given in reference 1.

Table 43. Machinery Cost Worksheet

Machine Float 40 x 12 Fuel ----- Machine No. 7

- a) New Cost 3200 d) Interest rate .09
 b) Trade-in Value 1/ 500.81 e) Annual use 100 hours
 c) Planned years of use 10

A. OWNERSHIP COSTS

Subtotal

1. Depreciable value a 3200 - b 500.81 = \$ 2,699.19
Straight Line Method
 2. Annual Depreciation (Line 1 ÷ c 10) \$ 269.92
 3. Interest on Average Investment
 [(a 3200 + b 500.81) ÷ 2] x d .09 \$ 166.54
 4. Ownership cost per year (sum lines 2 and 3) \$ 436.46
 5. Ownership cost per hour (line 4 ÷ e) \$ 4.36

B. OPERATING COSTS

6. Accumulated repairs (TAR) 1/ for years of use. \$ 537.41
 7. Average repair cost per year [(line 6) ÷ c] \$ 53.74
 8. Average repair cost per hour [(line 7) ÷ e] \$ 0.54
 9. Tractor fuel consumption per hour (.06^{2/} x PTO HP)
 Fuel gal/hr x \$ per gal. = \$ per hr.
 10. Tractor oil consumption (based on one quart every 20 hrs. plus
 oil change every 100 hrs.)
 oil gals. per year x \$ per gal.
 \$ ÷ hours = \$ per hour.
 11. Fuel and oil cost per hour \$ -0-
 12. Operating cost per hour (line 8 + line 11) \$ 0.54

C. TOTAL COST PER HOUR

13. Total cost per hour (line 5 + line 12) \$ 4.90

1/ See "Agriculture Machinery Management Data," 1972 Agricultural Engineers Yearbook (St. Joseph, Michigan: ASAE, 1972), pp. 299-306.

<u>Equation No.</u>	<u>Trade-in %</u>	<u>Equation No.</u>	<u>TAR %</u>
1. Tractors	% = 68 (0.920) ⁿ	1	TAR% = 0.100(x) ^{1.5}
2. Group 1 Implements	% = 64 (0.885) ⁿ	2	TAR% = 0.120(x) ^{1.5}
3. Group 2 Implements	% = 60 (0.885) ⁿ	3	TAR% = 0.096(x) ^{1.4}
4. Group 3 Implements	% = 56 (0.885) ⁿ	4	TAR% = 0.127(x) ^{1.4}
		5	TAR% = 0.159(x) ^{1.4}
		6	TAR% = 0.191(x) ^{1.4}
		7	TAR% = 0.301(x) ^{1.3}

n = Est. years use + 1

TAR is the accumulated repair cost to date divided by the list price, expressed as a percentage, and x is 100 times the ratio of the accumulated hours of use to the wear-out life. The trade-in value is the new cost times the trade-in percentage.

2/ Estimated from data given in reference 1.

Table 44. Machinery Cost Worksheet

Machine Flex Planter 6 Row Fuel Machine No. 8

- a) New Cost 1700 d) Interest rate .09
 b) Trade-in Value 1/ 490.07 e) Annual use 200 hours
 c) Planned years of use 5

A. OWNERSHIP COSTS

Subtotal

1. Depreciable value a 1700 - b 490.07 = \$ 1,209.93
Straight Line Method
 2. Annual Depreciation (Line 1 1209.95 ÷ c 5) \$ 241.99
 3. Interest on Average Investment
 [(a 1700 + b 490.07) ÷ 2] x d .09 \$ 98.55
 4. Ownership cost per year (sum lines 2 and 3) \$ 340.54
 5. Ownership cost per hour (line 4 ÷ e) \$ 1.70

B. OPERATING COSTS

6. Accumulated repairs (TAR) 1/ for years of use. \$ 618.97
 7. Average repair cost per year [(line 6) ÷ c] \$ 123.79
 8. Average repair cost per hour [(line 7) ÷ e] \$ 0.62
 9. Tractor fuel consumption per hour (.06^{2/} x P10 HP)
 Fuel gal/hr x \$ per gal. = \$ per hr.
 10. Tractor oil consumption (based on one quart every 20 hrs. plus
 oil change every 100 hrs.)
 oil gals. per year x \$ per gal.
 \$ ÷ hours = \$ per hour.
 11. Fuel and oil cost per hour \$ -0-
 12. Operating cost per hour (line 8 + line 11) \$ 0.62

C. TOTAL COST PER HOUR

13. Total cost per hour (line 5 + line 12) \$ 2.32

1/ See "Agriculture Machinery Management Data," 1972 Agricultural Engineers Yearbook (St. Joseph, Michigan: ASAE, 1972), pp. 299-306.

<u>Equation No.</u>	<u>Trade-in %</u>	<u>Equation No.</u>	<u>TAR %</u>
1. Tractors	% = 68 (0.920) ⁿ	1	TAR% = 0.100(x) ^{1.5}
2. Group 1 Implements	% = 64 (0.885) ⁿ	2	TAR% = 0.120(x) ^{1.5}
3. Group 2 Implements	% = 60 (0.885) ⁿ	3	TAR% = 0.096(x) ^{1.4}
4. Group 3 Implements	% = 56 (0.885) ⁿ	4	TAR% = 0.127(x) ^{1.4}
		5	TAR% = 0.159(x) ^{1.4}
		6	TAR% = 0.191(x) ^{1.4}
		7	TAR% = 0.301(x) ^{1.3}

TAR is the accumulated repair cost to date divided by the list price, expressed as a percentage, and x is 100 times the ratio of the accumulated hours of use to the wear-out life. The trade-in value is the new cost times the trade-in percentage.

2/ Estimated from data given in reference 1.

Table 45. Machinery Cost Worksheet

Machine Lister Planter 6 RowFuel Machine No. 9

- a) New Cost 2700 d) Interest rate .09
 b) Trade-in Value $\frac{1}{539.52}$ e) Annual use 125 hours
 c) Planned years of use 8

A. OWNERSHIP COSTS

Subtotal

1. Depreciable value a 2700 - b 539.52 \$ 2,160.48
Straight Line Method
 2. Annual Depreciation (Line 1 2160.48 ÷ c 8) \$ 270.06
 3. Interest on Average Investment
 $[(a \text{ 2700 + b 539.52) ÷ 2] \times d \text{ .09}$ \$ 145.78
 4. Ownership cost per year (sum lines 2 and 3) \$ 415.84
 5. Ownership cost per hour (line 4 ÷ e) \$ 3.33

B. OPERATING COSTS

6. Accumulated repairs (TAR) $\frac{1}{}$ for years of use. \$ 983.12
 7. Average repair cost per year [(line 6) ÷ c] \$ 122.09
 8. Average repair cost per hour [(line 7) $\frac{2}{}$ ÷ e] \$.98
 9. Tractor fuel consumption per hour (.06 $\frac{2}{}$ x P10 HP)
 Fuel _____ gal/hr x \$ _____ per gal. = \$ _____ per hr.
 10. Tractor oil consumption (based on one quart every 20 hrs. plus
 oil change every 100 hrs.)
 oil _____ gals. per year x \$ _____ per gal.
 $\$ \frac{2}{}$ ÷ _____ hours = \$ _____ per hour.
 11. Fuel and oil cost per hour \$ -0-
 12. Operating cost per hour (line 8 + line 11) \$.98

C. TOTAL COST PER HOUR

13. Total cost per hour (line 5 + line 12) \$ 4.31

^{1/} See "Agriculture Machinery Management Data," 1972 Agricultural Engineers Yearbook (St. Joseph, Michigan: ASAE, 1972), pp. 299-306.

<u>Equation No.</u>	<u>Trade-in %</u>	<u>Equation No.</u>	<u>TAR %</u>
1. Tractors	% = 68 (0.920) ⁿ	1	TAR% = 0.100(x) ^{1.5}
2. Group 1 Implements	% = 64 (0.885) ⁿ	2	TAR% = 0.120(x) ^{1.5}
3. Group 2 Implements	% = 60 (0.885) ⁿ	3	TAR% = 0.096(x) ^{1.4}
4. Group 3 Implements	% = 56 (0.885) ⁿ	4	TAR% = 0.127(x) ^{1.4}
		5	TAR% = 0.159(x) ^{1.4}
		6	TAR% = 0.191(x) ^{1.4}
		7	TAR% = 0.301(x) ^{1.3}

n = Est. years use + 1

TAR is the accumulated repair cost to date divided by the list price, expressed as a percentage, and x is 100 times the ratio of the accumulated hours of use to the wear-out life. The trade-in value is the new cost times the trade-in percentage.

^{2/} Estimated from data given in reference 1.

Table 46. Machinery Cost Worksheet

Machine Tandem Disc. 14' Fuel ---- Machine No. 10

a) New Cost 2850 d) Interest rate .09
 b) Trade-in Value 1/ 569.43 e) Annual use 200 hours
 c) Planned years of use 8

A. OWNERSHIP COSTS Subtotal

1. Depreciable value a 2850 - b 569.43 = \$ 2280.57
Straight Line Method
 2. Annual Depreciation (Line 1 2280.57 ÷ c 8) \$ 285.07
 3. Interest on Average Investment
 [(a 2850 + b 569.43) ÷ 2] x d .09 \$ 153.87
 4. Ownership cost per year (sum lines 2 and 3) \$ 438.94
 5. Ownership cost per hour (line 4 ÷ e) \$ 2.19

B. OPERATING COSTS

6. Accumulated repairs (TAR) 1/ for years of use. \$ 1,911.81
 7. Average repair cost per year [(line 6) ÷ c] \$ 238.98
 8. Average repair cost per hour [(line 7) ÷ e] \$ 1.19
 9. Tractor fuel consumption per hour (.06^{2/} x PTO HP)
 Fuel _____ gal/hr x \$ _____ per gal. = \$ _____ per hr.
 10. Tractor oil consumption (based on one quart every 20 hrs. plus
 oil change every 100 hrs.)
 oil _____ gals. per year x \$ _____ per gal.
 \$ _____ ÷ _____ hours = \$ _____ per hour.
 11. Fuel and oil cost per hour \$ -0-
 12. Operating cost per hour (line 8 + line 11) \$ 1.19

C. TOTAL COST PER HOUR

13. Total cost per hour (line 5 + line 12) \$ 3.38

1/ See "Agriculture Machinery Management Data," 1972 Agricultural Engineers Yearbook (St. Joseph, Michigan: ASAE, 1972), pp. 299-306.

<u>Equation No.</u>	<u>Trade-in %</u>	<u>Equation No.</u>	<u>TAR %</u>
1. Tractors	% = 68 (0.920) ⁿ	1	TAR% = 0.100(x) ^{1.5}
2. Group 1 Implements	% = 64 (0.885) ⁿ	2	TAR% = 0.120(x) ^{1.5}
3. Group 2 Implements	% = 60 (0.885) ⁿ	3	TAR% = 0.096(x) ^{1.4}
4. Group 3 Implements	% = 56 (0.885) ⁿ	4	TAR% = 0.127(x) ^{1.4}
		5	TAR% = 0.159(x) ^{1.4}
n = Est. years use + 1		6	TAR% = 0.191(x) ^{1.4}
		7	TAR% = 0.301(x) ^{1.3}

TAR is the accumulated repair cost to date divided by the list price, expressed as a percentage, and x is 100 times the ratio of the accumulated hours of use to the wear-out life. The trade-in value is the new cost times the trade-in percentage.

2/ Estimated from data given in reference 1.

Table 47. Machinery Cost Worksheet

Machine Double Offset Disc. 14' Fuel ----- Machine No. 11

a) New Cost 4300 d) Interest rate .09
 b) Trade-in Value 1/ 859.14 e) Annual use 200 hours
 c) Planned years of use 8

A. OWNERSHIP COSTS Subtotal

1. Depreciable value a 4300 - b 859.14 = \$ 3,440.86
Straight Line Method

2. Annual Depreciation (Line 1 3440.86 ÷ c 8) \$ 430.11

3. Interest on Average Investment \$ 232.16
 [(a 3440.86 + b 859.14) ÷ 2] x d .09

4. Ownership cost per year (sum lines 2 and 3) \$ 662.27

5. Ownership cost per hour (line 4 ÷ e) \$ 3.31

B. OPERATING COSTS

6. Accumulated repairs (TAR) 1/ for years of use. \$ 2,884.44

7. Average repair cost per year [(line 6) ÷ c] \$ 360.56

8. Average repair cost per hour [(line 7) ÷ e] \$ 1.80

9. Tractor fuel consumption per hour (.06^{2/} x PTO HP)
 Fuel _____ gal/hr x \$ _____ per gal. = \$ _____ per hr.

10. Tractor oil consumption (based on one quart every 20 hrs. plus
 oil change every 100 hrs.)
 oil _____ gals. per year x \$ _____ per gal.
 \$ _____ ÷ _____ hours = \$ _____ per hour.

11. Fuel and oil cost per hour \$ -0-

12. Operating cost per hour (line 8 + line 11) \$ 1.80

C. TOTAL COST PER HOUR

13. Total cost per hour (line 5 + line 12) \$ 5.11

^{1/} See "Agriculture Machinery Management Data," 1972 Agricultural Engineers Yearbook (St. Joseph, Michigan: ASAE, 1972), pp. 299-306.

<u>Equation No.</u>	<u>Trade-in %</u>	<u>Equation No.</u>	<u>TAR %</u>
1. Tractors	% = 68 (0.920) ⁿ	1	TAR% = 0.100(x) ^{1.5}
2. Group 1 Implements	% = 64 (0.885) ⁿ	2	TAR% = 0.120(x) ^{1.5}
3. Group 2 Implements	% = 60 (0.885) ⁿ	3	TAR% = 0.096(x) ^{1.4}
4. Group 3 Implements	% = 56 (0.885) ⁿ	4	TAR% = 0.127(x) ^{1.4}
		5	TAR% = 0.159(x) ^{1.4}
		6	TAR% = 0.191(x) ^{1.4}
		7	TAR% = 0.301(x) ^{1.3}

n = Est. years use + 1

TAR is the accumulated repair cost to date divided by the list price, expressed as a percentage, and x is 100 times the ratio of the accumulated hours of use to the wear-out life. The trade-in value is the new cost times the trade-in percentage.

^{2/} Estimated from data given in reference 1.

Table 48. Machinery Cost Worksheet

Machine Grain Drill 20 x 8 Fuel ---- Machine No. 12

a) New Cost 2350 d) Interest rate .09
 b) Trade-in Value 1/ 367.79 e) Annual use 120 hours
 c) Planned years of use 10

A. OWNERSHIP COSTS Subtotal

1. Depreciable value a 2350 - b 367.79 = \$ 1,982.21
Straight Line Method

2. Annual Depreciation (Line 1 1982.21 ÷ c 10) \$ 198.22

3. Interest on Average Investment \$ 122.30
 [(a 2350 + b 367.79) ÷ 2] x d .09

4. Ownership cost per year (sum lines 2 and 3) \$ 320.52

5. Ownership cost per hour (line 4 ÷ e) \$ 2.67

B. OPERATING COSTS

6. Accumulated repairs (TAR) 1/ for years of use. \$ 1,093.78

7. Average repair cost per year [(line 6) ÷ c] \$ 109.38

8. Average repair cost per hour [(line 7) ÷ e] \$ 0.91

9. Tractor fuel consumption per hour (.06^{2/} x P10 HP)
 Fuel _____ gal/hr x \$ _____ per gal. = \$ _____ per hr.

10. Tractor oil consumption (based on one quart every 20 hrs. plus
 oil change every 100 hrs.)
 oil _____ gals. per year x \$ _____ per gal.
 \$ _____ ÷ _____ hours = \$ _____ per hour.

11. Fuel and oil cost per hour \$ -0-

12. Operating cost per hour (line 8 + line 11) \$ 0.91

C. TOTAL COST PER HOUR

13. Total cost per hour (line 5 + line 12) \$ 3.58

1/ See "Agriculture Machinery Management Data," 1972 Agricultural Engineers Yearbook (St. Joseph, Michigan: ASAE, 1972), pp. 299-306.

<u>Equation No.</u>	<u>Trade-in %</u>	<u>Equation No.</u>	<u>TAR %</u>
1. Tractors	% = 68 (0.920) ⁿ	1	TAR% = 0.100(x) ^{1.5}
2. Group 1 Implements	% = 64 (0.885) ⁿ	2	TAR% = 0.120(x) ^{1.5}
3. Group 2 Implements	% = 60 (0.885) ⁿ	3	TAR% = 0.096(x) ^{1.4}
4. Group 3 Implements	% = 56 (0.885) ⁿ	4	TAR% = 0.127(x) ^{1.4}
		5	TAR% = 0.159(x) ^{1.4}
		6	TAR% = 0.191(x) ^{1.4}
		7	TAR% = 0.301(x) ^{1.3}

n = Est. years use + 1

TAR is the accumulated repair cost to date divided by the list price, expressed as a percentage, and x is 100 times the ratio of the accumulated hours of use to the wear-out life. The trade-in value is the new cost times the trade-in percentage.

2/ Estimated from data given in reference 1.

Table 49. Machinery Cost Worksheet

Machine Sandfighter 9R Fuel ---- Machine No. 13

- a) New Cost 395 d) Interest rate .09
 b) Trade-in Value 1/ 61.82 e) Annual use 100 hours
 c) Planned years of use 10

A. OWNERSHIP COSTS	Subtotal
1. Depreciable value a <u>395</u> - b <u>61.82</u> = \$ <u>333.18</u> <u>Straight Line Method</u>	
2. Annual Depreciation (Line 1 <u>333.18</u> ÷ c <u>10</u>)	\$ <u>33.32</u>
3. Interest on Average Investment [(a <u>395</u> + b <u>61.82</u>) ÷ 2] x d <u>.09</u>	\$ <u>20.56</u>
4. Ownership cost per year (sum lines 2 and 3)	\$ <u>53.88</u>
5. Ownership cost per hour (line 4 ÷ e)	\$ <u>0.54</u>

B. OPERATING COSTS

6. Accumulated repairs (TAR) <u>1/</u> for years of use.	\$ <u>66.34</u>
7. Average repair cost per year [(line 6) ÷ c]	\$ <u>6.63</u>
8. Average repair cost per hour [(line 7) ÷ e]	\$ <u>0.07</u>
9. Tractor fuel consumption per hour (<u>.06^{2/}</u> x PTO HP) Fuel _____ gal/hr x \$ _____ per gal. = \$ _____ per hr.	
10. Tractor oil consumption (based on one quart every 20 hrs. plus oil change every 100 hrs.) oil _____ gals. per year x \$ _____ per gal. \$ _____ ÷ _____ hours = \$ _____ per hour.	
11. Fuel and oil cost per hour	\$ <u>-0-</u>
12. Operating cost per hour (line 8 + line 11)	\$ <u>0.07</u>

C. TOTAL COST PER HOUR

13. Total cost per hour (line 5 + line 12)	\$ <u>0.61</u>
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1/ See "Agriculture Machinery Management Data," 1972 Agricultural Engineers Yearbook (St. Joseph, Michigan: ASAE, 1972), pp. 299-306.

<u>Equation No.</u>	<u>Trade-in %</u>	<u>Equation No.</u>	<u>TAR %</u>
1. Tractors	% = 68 (0.920) ⁿ	1	TAR% = 0.100(x) ^{1.5}
2. Group 1 Implements	% = 64 (0.885) ⁿ	2	TAR% = 0.120(x) ^{1.5}
3. Group 2 Implements	% = 60 (0.885) ⁿ	3	TAR% = 0.096(x) ^{1.4}
4. Group 3 Implements	% = 56 (0.885) ⁿ	4	TAR% = 0.127(x) ^{1.4}
		5	TAR% = 0.159(x) ^{1.4}
n = Est. years use + 1		6	TAR% = 0.191(x) ^{1.4}
		7	TAR% = 0.301(x) ^{1.3}

TAR is the accumulated repair cost to date divided by the list price, expressed as a percentage, and x is 100 times the ratio of the accumulated hours of use to the wear-out life. The trade-in value is the new cost times the trade-in percentage.

2/ Estimated from data given in reference 1.

Table 50. Machinery Cost Worksheet

Machine	<u>Tool Bar</u>	Fuel	<u>----</u>	Machine No.	<u>14</u>
a) New Cost	<u>850</u>	d) Interest rate	<u>.09</u>		
b) Trade-in Value	<u>1/ 104.19</u>	e) Annual use	<u>166</u>	hours	
c) Planned years of use	<u>12</u>				
A. OWNERSHIP COSTS				Subtotal	
1.	Depreciable value a <u>850</u> - b <u>104.19</u> = \$ <u>745.81</u>				
	<u>Straight Line Method</u>				
2.	Annual Depreciation (Line 1 <u>745.81</u> ÷ c <u>12</u>)			\$ <u>62.15</u>	
3.	Interest on Average Investment				
	[(a <u>850</u> + b <u>104.19</u>) ÷ 2] x d <u>.09</u>			\$ <u>42.94</u>	
4.	Ownership cost per year (sum lines 2 and 3)			\$ <u>105.09</u>	
5.	Ownership cost per hour (line 4 ÷ e)			\$ <u>0.63</u>	
B. OPERATING COSTS					
6.	Accumulated repairs (TAR) <u>1/</u> for years of use.			\$ <u>762.08</u>	
7.	Average repair cost per year [(line 6) ÷ c]			\$ <u>63.51</u>	
8.	Average repair cost per hour [(line 7) ^{2/} ÷ e]			\$ <u>0.38</u>	
9.	Tractor fuel consumption per hour (.06 ^{2/} x P10 HP)				
	Fuel _____ gal/hr x \$ _____ per gal. = \$ _____ per hr.				
10.	Tractor oil consumption (based on one quart every 20 hrs. plus oil change every 100 hrs.)				
	oil _____ gals. per year x \$ _____ per gal.				
	\$ _____ ÷ _____ hours = \$ _____ per hour.				
11.	Fuel and oil cost per hour			\$ <u>-0-</u>	
12.	Operating cost per hour (line 8 + line 11)			\$ <u>0.38</u>	
C. TOTAL COST PER HOUR					
13.	Total cost per hour (line 5 + line 12)			\$ <u>1.01</u>	

^{1/} See "Agriculture Machinery Management Data," 1972 Agricultural Engineers Yearbook (St. Joseph, Michigan: ASAE, 1972), pp. 299-306.

<u>Equation No.</u>	<u>Trade-in %</u>	<u>Equation No.</u>	<u>TAR %</u>
1. Tractors	% = 68 (0.920) ⁿ	1	TAR% = 0.100(x) ^{1.5}
2. Group 1 Implements	% = 64 (0.885) ⁿ	2	TAR% = 0.120(x) ^{1.5}
3. Group 2 Implements	% = 60 (0.885) ⁿ	3	TAR% = 0.096(x) ^{1.4}
4. Group 3 Implements	% = 56 (0.885) ⁿ	4	TAR% = 0.127(x) ^{1.4}
		5	TAR% = 0.159(x) ^{1.4}
		6	TAR% = 0.191(x) ^{1.4}
		7	TAR% = 0.301(x) ^{1.3}

n = Est. years use + 1

TAR is the accumulated repair cost to date divided by the list price, expressed as a percentage, and x is 100 times the ratio of the accumulated hours of use to the wear-out life. The trade-in value is the new cost times the trade-in percentage.

^{2/} Estimated from data given in reference 1.

Table 51. Machinery Cost Worksheet

Machine Herbicide Sprayer 8R Fuel Machine No. 15

- a) New Cost 550 d) Interest rate .09
 b) Trade-in Value $1/$ 0 e) Annual use 200 hours
 c) Planned years of use 10

A. OWNERSHIP COSTS

Subtotal

1. Depreciable value a 550 - b 0 = \$ 550
Straight Line Method
 2. Annual Depreciation (Line 1 550 ÷ c 10) \$ 55.00
 3. Interest on Average Investment
 [(a 550 + b 0) ÷ 2] x d .09 \$ 24.75
 4. Ownership cost per year (sum lines 2 and 3) \$ 79.75
 5. Ownership cost per hour (line 4 ÷ e) \$ 0.40

B. OPERATING COSTS

6. Accumulated repairs (TAR) $1/$ for years of use. \$ 551.77
 7. Average repair cost per year [(line 6) ÷ c] \$ 55.18
 8. Average repair cost per hour [(line 7) $2/$ e] \$ 0.28
 9. Tractor fuel consumption per hour (.06 $2/$ x P10 HP)
 Fuel _____ gal/hr x \$ _____ per gal. = \$ _____ per hr.
 10. Tractor oil consumption (based on one quart every 20 hrs. plus
 oil change every 100 hrs.)
 oil _____ gals. per year x \$ _____ per gal.
 \$ _____ ÷ _____ hours = \$ _____ per hour.
 11. Fuel and oil cost per hour \$ -0-
 12. Operating cost per hour (line 8 + line 11) \$ 0.28

C. TOTAL COST PER HOUR

13. Total cost per hour (line 5 + line 12) \$ 0.68

$1/$ See "Agriculture Machinery Management Data," 1972 Agricultural Engineers Yearbook (St. Joseph, Michigan: ASAE, 1972), pp. 299-306.

<u>Equation No.</u>	<u>Trade-in %</u>	<u>Equation No.</u>	<u>TAR %</u>
1. Tractors	% = 68 (0.920) ⁿ	1	TAR% = 0.100(x) ^{1.5}
2. Group 1 Implements	% = 64 (0.885) ⁿ	2	TAR% = 0.120(x) ^{1.5}
3. Group 2 Implements	% = 60 (0.885) ⁿ	3	TAR% = 0.096(x) ^{1.4}
4. Group 3 Implements	% = 56 (0.885) ⁿ	4	TAR% = 0.127(x) ^{1.4}
		5	TAR% = 0.159(x) ^{1.4}
		6	TAR% = 0.191(x) ^{1.4}
		7	TAR% = 0.301(x) ^{1.3}

n = Est. years use + 1

TAR is the accumulated repair cost to date divided by the list price, expressed as a percentage, and x is 100 times the ratio of the accumulated hours of use to the wear-out life. The trade-in value is the new cost times the trade-in percentage.

$2/$ Estimated from data given in reference 1.

Table 52. Machinery Cost Worksheet

Machine	<u>Shredder</u>	Fuel	<u>----</u>	Machine No.	<u>16</u>
a)	New Cost <u>2800</u>	d)	Interest rate <u>.09</u>		
b)	Trade-in Value <u>1/ 559.50</u>	e)	Annual use <u>125</u>	hours	
c)	Planned years of use <u>8</u>				
A. OWNERSHIP COSTS				Subtotal	
1.	Depreciable value a <u>2800</u> - b <u>559.50</u> = \$ <u>2,240.50</u>				
	<u>Straight Line Method</u>				
2.	Annual Depreciation (Line 1 <u>2,240.50</u> ÷ c <u>8</u>)				\$ <u>280.06</u>
3.	Interest on Average Investment [(a <u>2800</u> + b <u>559.50</u>) ÷ 2] x d <u>.09</u>				\$ <u>151.18</u>
4.	Ownership cost per year (sum lines 2 and 3)				\$ <u>431.24</u>
5.	Ownership cost per hour (line 4 ÷ e)				\$ <u>3.45</u>
B. OPERATING COSTS					
6.	Accumulated repairs (TAR) <u>1/</u> for years of use.				\$ <u>642.67</u>
7.	Average repair cost per year [(line 6) ÷ c]				\$ <u>80.33</u>
8.	Average repair cost per hour [(line 7) <u>2/</u> e]				\$ <u>0.64</u>
9.	Tractor fuel consumption per hour (.06 <u>2/</u> x PTO HP) Fuel _____ gal/hr x \$ _____ per gal. = \$ _____ per hr.				
10.	Tractor oil consumption (based on one quart every 20 hrs. plus oil change every 100 hrs.) oil _____ gals. per year x \$ _____ per gal. \$ _____ ÷ _____ hours = \$ _____ per hour.				
11.	Fuel and oil cost per hour				\$ <u>-0-</u>
12.	Operating cost per hour (line 8 + line 11)				\$ <u>0.64</u>
C. TOTAL COST PER HOUR					
13.	Total cost per hour (line 5 + line 12)				\$ <u>4.09</u>

1/ See "Agriculture Machinery Management Data," 1972 Agricultural Engineers Yearbook (St. Joseph, Michigan: ASAE, 1972), pp. 299-306.

<u>Equation No.</u>	<u>Trade-in %</u>	<u>Equation No.</u>	<u>TAR %</u>
1. Tractors	% = 68 (0.920) ⁿ	1	TAR% = 0.100(x) ^{1.5}
2. Group 1 Implements	% = 64 (0.885) ⁿ	2	TAR% = 0.120(x) ^{1.5}
3. Group 2 Implements	% = 60 (0.885) ⁿ	3	TAR% = 0.096(x) ^{1.4}
4. Group 3 Implements	% = 56 (0.885) ⁿ	4	TAR% = 0.127(x) ^{1.4}
		5	TAR% = 0.159(x) ^{1.4}
		6	TAR% = 0.191(x) ^{1.4}
		7	TAR% = 0.301(x) ^{1.3}

n = Est. years use + 1

TAR is the accumulated repair cost to date divided by the list price, expressed as a percentage, and x is 100 times the ratio of the accumulated hours of use to the wear-out life. The trade-in value is the new cost times the trade-in percentage.

2/ Estimated from data given in reference 1.

Table 53. Machinery Cost Worksheet

Machine	<u>Rod Weeder 6R</u>	Fuel	<u>----</u>	Machine No.	<u>17</u>
a) New Cost	<u>560</u>	d) Interest rate	<u>.09</u>		
b) Trade-in Value	<u>1/ 161.44</u>	e) Annual use	<u>240</u>	hours	
c) Planned years of use	<u>5</u>				
A. OWNERSHIP COSTS				Subtotal	
1.	Depreciable value a _____ - b _____ = \$ <u>398.56</u>				
	<u>Straight Line Method</u>				
2.	Annual Depreciation (Line 1 _____ ÷ c <u>5</u>)			\$ <u>79.71</u>	
3.	Interest on Average Investment				
	[(a _____ + b _____) ÷ 2] x d <u>.09</u>			\$ <u>32.46</u>	
4.	Ownership cost per year (sum lines 2 and 3)			\$ <u>112.17</u>	
5.	Ownership cost per hour (line 4 ÷ e)			\$ <u>0.47</u>	
B. OPERATING COSTS					
6.	Accumulated repairs (TAR) ^{1/} for years of use.			\$ <u>258.44</u>	
7.	Average repair cost per year [(line 6) ÷ c]			\$ <u>51.69</u>	
8.	Average repair cost per hour [(line 7) ÷ e]			\$ <u>0.22</u>	
9.	Tractor fuel consumption per hour (.06 ^{2/} x P10 HP)				
	Fuel _____ gal/hr x \$ _____ per gal. = \$ _____ per hr.				
10.	Tractor oil consumption (based on one quart every 20 hrs. plus oil change every 100 hrs.)				
	oil _____ gals. per year x \$ _____ per gal.				
	\$ _____ ÷ _____ hours = \$ _____ per hour.				
11.	Fuel and oil cost per hour			\$ <u>-0-</u>	
12.	Operating cost per hour (line 8 + line 11)			\$ <u>0.22</u>	
C. TOTAL COST PER HOUR					
13.	Total cost per hour (line 5 + line 12)			\$ <u>0.69</u>	

^{1/} See "Agriculture Machinery Management Data," 1972 Agricultural Engineers Yearbook (St. Joseph, Michigan: ASAE, 1972), pp. 299-306.

<u>Equation No.</u>	<u>Trade-in %</u>	<u>Equation No.</u>	<u>TAR %</u>
1. Tractors	% = 68 (0.920) ⁿ	1	TAR% = 0.100(x) ^{1.5}
2. Group 1 Implements	% = 64 (0.885) ⁿ	2	TAR% = 0.120(x) ^{1.5}
3. Group 2 Implements	% = 60 (0.885) ⁿ	3	TAR% = 0.096(x) ^{1.4}
4. Group 3 Implements	% = 56 (0.885) ⁿ	4	TAR% = 0.127(x) ^{1.4}
		5	TAR% = 0.159(x) ^{1.4}
		6	TAR% = 0.191(x) ^{1.4}
		7	TAR% = 0.301(x) ^{1.3}

n = Est. years use + 1

TAR is the accumulated repair cost to date divided by the list price, expressed as a percentage, and x is 100 times the ratio of the accumulated hours of use to the wear-out life. The trade-in value is the new cost times the trade-in percentage.

^{2/} Estimated from data given in reference 1.

Table 54. Machinery Cost Worksheet

Machine Blade 8 Ft. Fuel ---- Machine No. 18

a) New Cost 725 d) Interest rate .09
 b) Trade-in Value 1/ 113.47 e) Annual use 200 hours
 c) Planned years of use 10

A. OWNERSHIP COSTS

Subtotal

1. Depreciable value a 725 - b 113.47 = \$ 611.53
Straight Line Method
2. Annual Depreciation (Line 1 611.53 ÷ c 10) \$ 16.15
3. Interest on Average Investment
 [(a 725 + b 113.47) ÷ 2] x d .09 \$ 37.73
4. Ownership cost per year (sum lines 2 and 3) \$ 92.88
5. Ownership cost per hour (line 4 ÷ e) \$ 0.49

B. OPERATING COSTS

6. Accumulated repairs (TAR) 1/ for years of use. \$ 321.32
7. Average repair cost per year [(line 6) ÷ c] \$ 32.13
8. Average repair cost per hour [(line 7) ÷ e] \$ 0.16
9. Tractor fuel consumption per hour (.06²⁷ x P10 HP)
 Fuel _____ gal/hr x \$ _____ per gal. = \$ _____ per hr.
10. Tractor oil consumption (based on one quart every 20 hrs. plus
 oil change every 100 hrs.)
 oil _____ gals. per year x \$ _____ per gal.
 \$ _____ ÷ _____ hours = \$ _____ per hour.
11. Fuel and oil cost per hour \$ -0-
12. Operating cost per hour (line 8 + line 11) \$ 0.16

C. TOTAL COST PER HOUR

13. Total cost per hour (line 5 + line 12) \$ 0.65

1/ See "Agriculture Machinery Management Data," 1972 Agricultural Engineers Yearbook (St. Joseph, Michigan: ASAE, 1972), pp. 299-306.

<u>Equation No.</u>	<u>Trade-in %</u>	<u>Equation No.</u>	<u>TAR %</u>
1. Tractors	% = 68 (0.920) ⁿ	1	TAR% = 0.100(x) ^{1.5}
2. Group 1 Implements	% = 64 (0.885) ⁿ	2	TAR% = 0.120(x) ^{1.5}
3. Group 2 Implements	% = 60 (0.885) ⁿ	3	TAR% = 0.096(x) ^{1.4}
4. Group 3 Implements	% = 56 (0.885) ⁿ	4	TAR% = 0.127(x) ^{1.4}
		5	TAR% = 0.159(x) ^{1.4}
		6	TAR% = 0.191(x) ^{1.4}
		7	TAR% = 0.301(x) ^{1.3}

n = Est. years use + 1

TAR is the accumulated repair cost to date divided by the list price, expressed as a percentage, and x is 100 times the ratio of the accumulated hours of use to the wear-out life. The trade-in value is the new cost times the trade-in percentage.

2/ Estimated from data given in reference 1.