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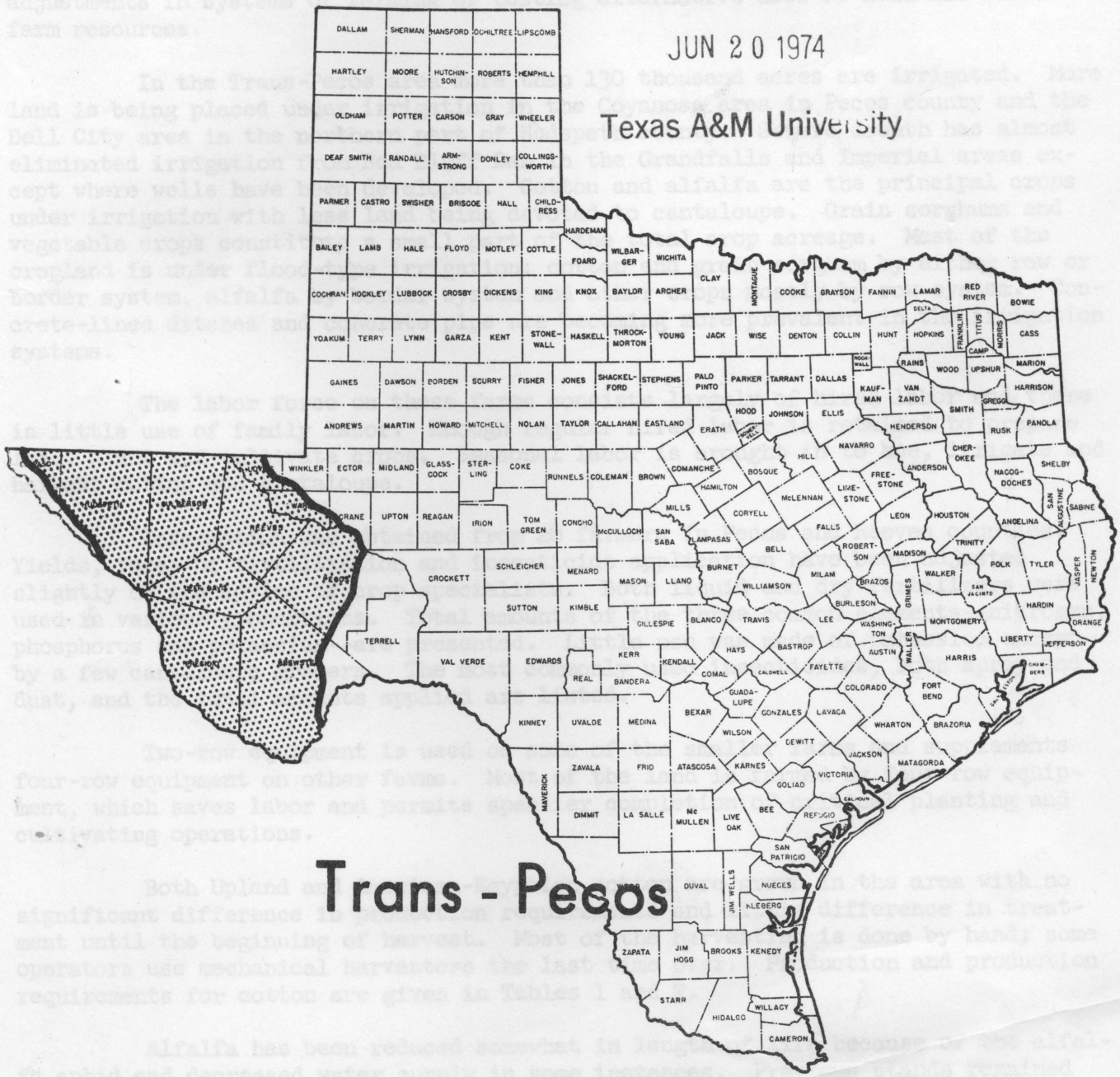
Production and Production Requirements of Crops



Trans - Pecos

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TEXAS AGRICULTURAL EXPERIMENT STATION

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PRODUCTION AND PRODUCTION REQUIREMENTS OF CROPS--TRANS-PECOS

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This is one in a series of reports on production and production requirements of crops in the various types-of-farming areas of Texas. It provides some of the information necessary for analyzing farm management problems and for planning adjustments in systems of farming or testing alternative uses of land and other farm resources.

In the Trans-Pecos area more than 130 thousand acres are irrigated. More land is being placed under irrigation in the Coyanosa area in Pecos county and the Dell City area in the northern part of Hudspeth county. Severe drouth has almost eliminated irrigation from Red Bluff Dam in the Grandfalls and Imperial areas except where wells have been developed. Cotton and alfalfa are the principal crops under irrigation with less land being devoted to cantaloupe. Grain sorghums and vegetable crops constitute a small part of the total crop acreage. Most of the cropland is under flood-type irrigation: cotton and grain sorghum by either row or border system, alfalfa by border system and other crops mostly by row system. Concrete-lined ditches and concrete pipe are becoming more prevalent in the irrigation systems.

The labor force on these farms consists largely of hired labor and there is little use of family labor. Enough regular hired labor is retained to prepare land, plant and cultivate crops. Seasonal labor is brought in to hoe, irrigate and harvest cotton and cantaloupe.

Information was obtained from 28 farmers in Pecos and Reeves counties. Yields, rates of fertilization and insecticide application have been adjusted slightly on the advice of crop specialists. Both liquid and dry fertilizers were used in various proportions. Total amounts of the three common elements--nitrogen, phosphorus and potassium--are presented. Little use was made of potassium except by a few cantaloupe growers. The most commonly used insecticides, both spray and dust, and the total amounts applied are listed.

Two-row equipment is used on some of the smaller farms and supplements four-row equipment on other farms. Most of the land is farmed by four-row equipment, which saves labor and permits speedier completion of critical planting and cultivating operations.

Both Upland and American-Egyptian cotton are grown in the area with no significant difference in production requirements and little difference in treatment until the beginning of harvest. Most of the harvesting is done by hand; some operators use mechanical harvesters the last time over. Production and production requirements for cotton are given in Tables 1 and 2.

Alfalfa has been reduced somewhat in length of life because of the alfalfa aphid and decreased water supply in some instances. Previous stands remained for 5 or 6 years. Now replanting is necessary every 3 or 4 years. Since cotton is the money crop, limited water supplies sometimes are diverted from alfalfa. Production and production requirements for alfalfa are given in Table 3.

The acreage planted to cantaloupe has varied considerably through the years. Turning the vines to prevent the cantaloupe from cracking requires large amounts of labor; however, this operation depends on weather conditions and is not necessary every year. Production and production requirements for cantaloupe are given in Table 4.

Alternatives to cotton and alfalfa are being sought as evidenced by acreages being planted to onions, watermelon, carrots, lettuce and other truck crops. No attempt was made to secure production requirements on these crops because of the small acreage involved.

Most of the data are presented in physical quantities and represent usual or normal practices and rates of performance. Actual amounts will vary slightly from year to year with seasonal conditions. The normal amounts will change slowly through time with technological change.

Table 1. Upland cotton production and production requirements

Variety	1517-C
Normal yield	
Lint per acre, pounds	1,300
Seed per acre, pounds	20
Average price of seed dollars per 100 pounds	12.00
Insecticides	
Dust, pounds[1]	90
Spray, pints[1]	4

Fertilizer, pounds	N	P_2O_5	K_2O
	90	40	0

Usual planting period	April - May
Usual harvesting period	September - December

	Labor and power inputs per acre					
	Two-row			Four-row		
		Total hours			Total hours	
Operation	X Over	Man	Tractor	X Over	Man	Tractor
Cut stalks and disk	1.0	.40	.40	1.0	.35	.35
Flat break	1.0	2.50	2.50	1.0	1.67	1.67
Disk	1.0	.67	.67	1.0	.50	.50
Drag or float	1.0	.50	.50	1.0	.50	.50
List	1.0	.50	.50	1.0	.31	.31
Plow borders[2]	1.0	.36	.36	1.0	.36	.36
Harrow	2.0	.80	.80	2.0	.67	.67
Planting	1.0	.67	.67	1.0	.40	.40
Cultivate	6.0	4.02	4.02	6.0	2.40	2.40
Poison[3]	2.0	.34	.34	2.0	.25	.25
Hoe	3.0	21.30		3.0	21.30	
Irrigate	8.0	16.00		8.0	16.00	
Total hours preharvest		48.06	10.76		44.71	7.41

Contract operations		
Harvest		
Pick and haul		$2.05 per 100 pounds (1517-C)
Machine pick and haul		$2.00 per 100 pounds
Airplane dusting	6.0 at	$.45 per acre
Airplane spraying	2.0 at	$1.25 per acre

1/ 2-10-40 at $7.75 per 100 pounds; endrin $7.75 per gallon.
2/ Reported by one-third of growers.
3/ Early ground application.

Table 2. American-Egyptian cotton production and production requirements

Variety	S-1		
Normal yield			
Lint per acre, pounds	590		
Seed per acre, pounds	25		
Average price of seed dollars per 100 pounds	10.00		
Insecticides			
Dust, pounds[1]	90		
Spray, pints[1]	4		
	N	P_2O_5	K_2O
Fertilizer, pounds	90	40	0
Usual planting period	April - May		
Usual harvesting period	September - December		

Labor and power inputs per acre

Operation	Two-row X Over	Two-row Total hours Man	Two-row Total hours Tractor	Four-row X Over	Four-row Total hours Man	Four-row Total hours Tractor
Cut stalks and disk	1.0	.40	.40	1.0	.35	.35
Flat break	1.0	2.50	2.50	1.0	1.67	1.67
Disk	1.0	.67	.67	1.0	.50	.50
Drag or float	1.0	.50	.50	1.0	.50	.50
List	1.0	.50	.50	1.0	.31	.31
Plow borders[2]	1.0	.36	.36	1.0	.36	.36
Harrow	2.0	.80	.80	2.0	.67	.67
Planting	1.0	.67	.67	1.0	.40	.40
Cultivate	6.0	4.02	4.02	6.0	2.40	2.40
Poison[3]	2.0	.34	.34	2.0	.25	.25
Hoe	3.0	21.30		3.0	21.30	
Irrigate	8.0	16.00		8.0	16.00	
Total hours preharvest		48.06	10.76		44.71	7.41

Contract operations	
Harvest	
Pick and haul	$3.07 per 100 pounds (S-1)
Machine pick and haul	$2.00 per 100 pounds
Airplane dusting	6.0 at $ .45 per acre
Airplane spraying	2.0 at $1.25 per acre

1/ 2-10-40 at $7.75 per 100 pounds; endrin $7.75 per gallon.
2/ Reported by one-third of growers.
3/ Early ground application.

Table 3. Alfalfa production and production requirements

Variety	Buffalo		
Normal yield, tons	4.0		
Seed per acre, pounds	20		
Average price of seed cents per pound	25		
Spray materials, pints[1]	.5		
	N	P_2O_5	K_2O
Fertilizer, pounds			
In seedbed	0	90	0
Top dress each year	0	90	0
Usual planting period	September		
Usual harvesting period	May - September		

	Labor and power inputs per acre		
	Every 3 years		
		Total hours	
Operation	X Over	Man	Tractor
Disk	1.0	.50	.50
Flat break	1.0	1.67	1.67
Disk	1.0	.35	.35
Drag or float	2.0	1.00	1.00
Plow borders	2.0	.72	.72
Irrigate	1.0	2.00	2.00
Planting and fertilizing	1.0	.50	.50
Total to establish stand		6.74	6.74
		Annual inputs	
Irrigate	8.0	10.00	
Fertilize	1.0	.40	.40
Mowing[2]	4.0	2.00	2.00
Raking[2]	4.0	2.68	2.68
Baling[2]	4.0	3.68	3.68
Total annual input		18.76	8.76

1/ Parathion at $5.66 per gallon; Malathion at $7.51 per gallon.
2/ Also contracted at 25 cents per bale.

Table 4. Cantaloupe production and production requirements

Variety	Mildew Resistant "45"		
Normal yield, 60-pound crates	150		
Seed per acre, pounds	3		
Average price of seed dollars per pound	1.50		
Insecticides			
Dust, pounds[1]	15		
Spray, pints[1]	2		
	N	P_2O_5	K_2O
Fertilizer, pounds	170	60	0
Usual planting period	March and May		
Usual harvesting period	July--September		

Labor and power inputs per acre

Operation	Four-row X Over	Total hours Man	Total hours Tractor
Flat break	1.0	1.67	1.67
Disk	2.0	1.00	1.00
Drag or float	1.0	.50	.50
List	1.0	.50	.50
Plow borders	1.0	.40	.40
Plant	1.0	1.34	.67
Cultivate	8.0	4.96	4.96
Hoe	3.0	1.50	
Turn vines	2.0	60.00	
Irrigate	12.0	24.00	
Total hours preharvest		95.87	9.70
Harvesting		135.00	
Total		230.87	9.70
Contract operations			
Airplane dusting	1.0 at $ .45 per acre		
Airplane spraying	2.0 at $1.25 per acre		

1/ 2-10-40 at $7.75 per 100 pounds; parathion at $5.66 per gallon.