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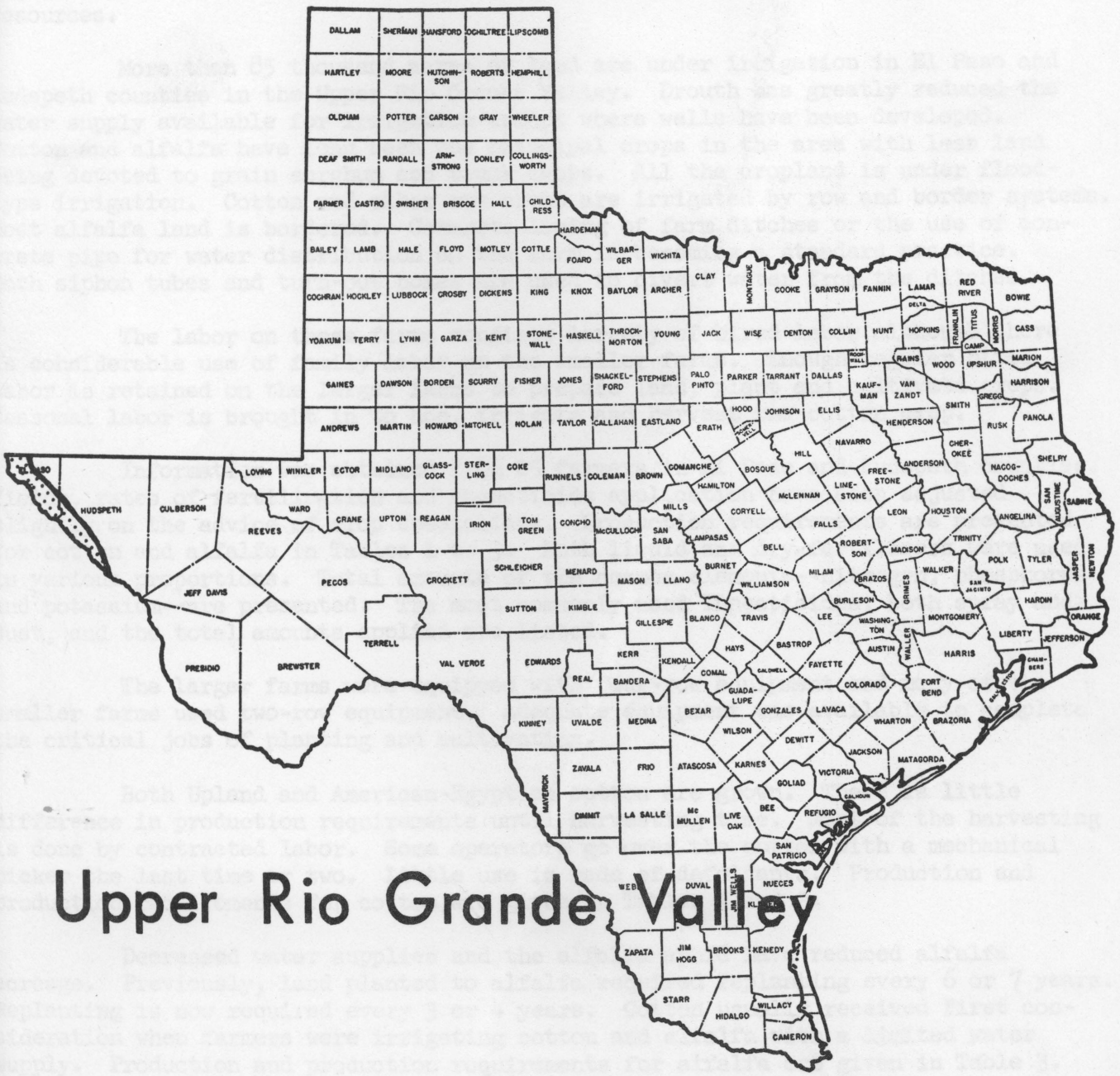
Production and Production Requirements of Crops



Upper Rio Grande Valley

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TEXAS AGRICULTURAL EXPERIMENT STATION

R. D. LEWIS, DIRECTOR, COLLEGE STATION, TEXAS

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PRODUCTION AND PRODUCTION REQUIREMENTS OF CROPS--UPPER RIO GRANDE VALLEY

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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.

More than 85 thousand acres of land are under irrigation in El Paso and Hudspeth counties in the Upper Rio Grande Valley. Drouth has greatly reduced the water supply available for irrigation except where wells have been developed. Cotton and alfalfa have long been the principal crops in the area with less land being devoted to grain sorghum and truck crops. All the cropland is under flood-type irrigation. Cotton and other row crops are irrigated by row and border systems. Most alfalfa land is bordered. Concrete lining of farm ditches or the use of concrete pipe for water distribution on the farm is becoming a standard practice. Both siphon tubes and turn-out boxes are used to divert water from the ditches.

The labor on these farms consists largely of hired labor although there is considerable use of family labor on the smaller farms. Enough regular hired labor is retained on the larger farms to prepare land, plant and cultivate crops. Seasonal labor is brought in to hoe, irrigate and harvest the cotton crop.

Information was obtained from 25 farmers in El Paso and Hudspeth counties. Yields, rates of fertilization and insecticide application have been adjusted slightly on the advice of crop specialists. Production requirements are presented for cotton and alfalfa in Tables 1 to 3. Both liquid and dry fertilizers were used in various proportions. Total amounts of the common elements--nitrogen, phosphorus and potassium--are presented. The most commonly used insecticides, both spray and dust, and the total amounts applied are listed.

The larger farms were equipped with four-row equipment and many of the smaller farms used two-row equipment. Adequate equipment was available to complete the critical jobs of planting and cultivating.

Both Upland and American-Egyptian cotton are grown. There is little difference in production requirements until harvesting time. Most of the harvesting is done by contracted labor. Some operators go over the cotton with a mechanical picker the last time or two. Little use is made of defoliants. Production and production requirements for cotton are given in Tables 1 and 2.

Decreased water supplies and the alfalfa aphid have reduced alfalfa acreage. Previously, land planted to alfalfa required replanting every 6 or 7 years. Replanting is now required every 3 or 4 years. Cotton usually received first consideration when farmers were irrigating cotton and alfalfa with a limited water supply. Production and production requirements for alfalfa are given in Table 3.

Small acreages of lettuce, tomatoes, cantaloupe, corn, sesbania and other crops are grown in the area. No attempt was made to obtain information on these crops because of the small acreage involved.

Most of the data are presented in physical quantities and represent usual 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--Upper Rio Grande Valley

Variety	1517-C		
Normal yield, lint, pounds	1106		
Seed per acre, pounds	25		
Average price of seed dollars per 100 pounds	12.50		
Insecticides			
Dust, pounds[1]	75		
Spray, pints[1]	12		
Fertilizer, pounds	N 90	P_2O_5 40	K_2O 0
Usual planting period	April - May		
Usual harvesting period	September - December		

	Labor and power inputs per acre					
	Two-row tractor			Four-row tractor		
		Total hours			Total hours	
Operation	X Over	Man	Tractor	X Over	Man	Tractor
Cut stalks and disk	1	.50	.50	1	.45	.45
Flat break	1	1.67	1.67	1	1.25	1.25
Disk	1	.67	.67	1	.50	.50
Drag or float	2	1.11	1.11	2	1.11	1.11
List	1	.55	.55	1	.35	.35
Flow borders[2]	1	.28	.28	1	.28	.28
Harrow	2	.74	.74	2	.74	.74
Plant	1	.67	.67	1	.40	.40
Cultivate	6	3.54	3.54	6	2.07	2.07
Poison[3]	2	.34	.34	2	.34	.34
Hoe	4	28.40		4	28.40	
Irrigate	7	14.30		7	14.30	
Total preharvest		52.77	10.07		50.19	7.49
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 at	$ .60 per acre.				
Airplane spraying	2 at	$1.25 per acre.				

1/ 2-10-40 at $10.80 per 100 pounds, toxaphene (2) and DDT (1) at $3.15 per gallon.
2/ Reported by one-third of growers.
3/ Early ground application.

Table 2. American-Egyptian cotton production--Upper Rio Grande Valley

Variety	S-1		
Normal yield, lint, pounds	612		
Seed per acre, pounds	20		
Average price of seed dollars per 100 pounds	12.00		
Insecticides			
Dust, pounds[1]	75		
Spray, pints[1]	12		
	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 tractor X Over	Two-row tractor Total hours Man	Two-row tractor Total hours Tractor	Four-row tractor X Over	Four-row tractor Total hours Man	Four-row tractor Total hours Tractor
Cut stalks and disk	1	.50	.50	1	.45	.45
Flat break	1	1.67	1.67	1	1.25	1.25
Disk	1	.67	.67	1	.50	.50
Drag or float	2	1.11	1.11	2	1.11	1.11
List	1	.55	.55	1	.35	.35
Plow borders[2]	1	.28	.28	1	.28	.28
Harrow	2	.74	.74	2	.74	.74
Plant	1	.67	.67	1	.40	.40
Cultivate	6	3.54	3.54	6	2.07	2.07
Poison[3]	2	.34	.34	2	.34	.34
Hoe	4	28.40		4	28.40	
Irrigate	7	14.30		7	14.30	
Total preharvest		52.77	10.07		50.19	7.49

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 at	$ .60 per acre
Airplane spraying	2 at	$1.25 per acre

1/ 2-10-40 at $10.80 per 100 pounds, toxaphene (2) and DDT (1) at $3.15 per gallon.
2/ Reported by one-third of growers.
3/ Early ground application.

Table 3. Alfalfa production--Upper Rio Grande Valley

Variety	Hairy Peruvian		
Normal yield, tons	4.2		
Seed per acre, pounds	30		
Average price of seed cents per pound	30		
Spray materials, pints[1]	1		
	N	P_2O_5	K_2O
Fertilizer, in seedbed, pounds	0	68	0
Top dress each year, pounds	0	90	0
Usual planting period	February - March and August - September		
Usual harvesting period	May - September		

Operation	X Over	Labor and power inputs per acre Every 3 years Total hours Man	Tractor
Disk	1	.50	.50
Flat break	1	1.67	1.67
Disk	1	.45	.45
Drag or float	2	1.11	1.11
Plow borders	2	.56	.56
Irrigate	1	2.00	
Planting and fertilizing	1	.50	.50
Total to establish stand		6.79	4.79
		Annual inputs	
Irrigate	10	14.28	
Fertilize	1	.50	.50
Chisel	1	.67	.67
Mowing[2]	5	2.50	2.50
Raking[2]	5	3.35	3.35
Baling[2]	5	4.60	4.60
Total annual input		25.90	11.62

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

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