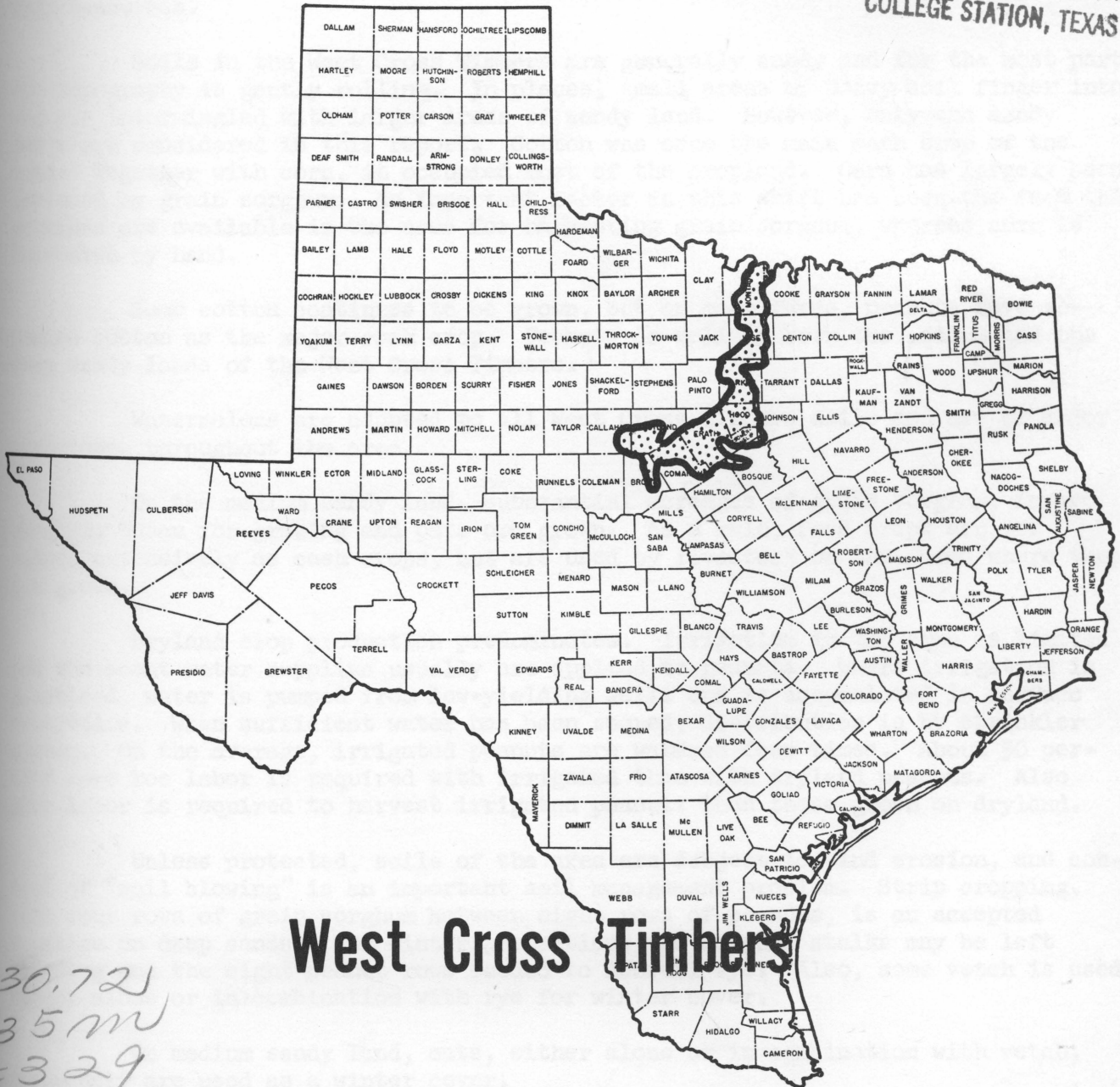


Production and Production Requirements of Crops

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IN COOPERATION WITH THE UNITED STATES DEPARTMENT OF AGRICULTURE



PRODUCTION AND PRODUCTION REQUIREMENTS OF CROPS--WEST CROSS TIMBERS

A. C. Magee and W. F. Hughes*

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.

Soils in the West Cross Timbers are generally sandy and for the most part the topography is gently rolling. In places, small areas of heavy soil finger into and are intermingled with larger areas of sandy land. However, only the sandy soils are considered in this report. Cotton was once the main cash crop of the area. Together with corn, it occupied most of the cropland. Corn has largely been replaced by grain sorghum. An important factor in this shift has been the fact that combines are available in the area for harvesting grain sorghum, whereas corn is harvested by hand.

Some cotton continues to be grown, but on most farms, peanuts have replaced cotton as the major cash crop. Peanuts do well on both the medium and the deep sandy lands of the West Cross Timbers.

Watermelons are adapted to all West Cross Timbers soils and are of major importance throughout the area.

On the medium sandy land, substantial acreages of grain sorghum, forage sorghum, Sudan for grazing and oats are grown. As a rule, feed crops are not raised extensively as cash crops, but are used by livestock on the farms where they are grown.

Dryland crop production predominates. Irrigation in the area is limited and the scant water supplies usually are applied to peanuts. Where irrigation is practiced, water is pumped from low-yielding wells and is accumulated in surface reservoirs. When sufficient water has been stored, distribution is by sprinkler system. On the average, irrigated peanuts are watered four times. About 50 percent more hoe labor is required with irrigated than with dryland peanuts. Also more labor is required to harvest irrigated peanuts than those grown on dryland.

Unless protected, soils of the area are subject to wind erosion, and control of "soil blowing" is an important soil management problem. Strip cropping, with four rows of grain sorghum between eight rows of peanuts, is an accepted practice on deep sands. For winter protection, the sorghum stalks may be left standing and the eight peanut rows seeded to Abbruzzi rye. Also, some vetch is used either alone or in combination with rye for winter cover.

On medium sandy land, oats, either alone or in combination with vetch, frequently are used as a winter cover.

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Production and production practices are shown in Tables 1-10. The data are based on farmer experience. In a few instances, farmer experience was supplemented by the experience of crop specialists working in the area.

The rates of fertilization represent the amounts commonly used to obtain the indicated yields. Reporting was simplified by listing the total pounds per acre of the three common elements--nitrogen, phosphorus and potassium. Different kinds of insecticides were used. The total amounts of spray and dust materials are listed, and only those insecticides most commonly used were reported.

The rates of fertilization listed are not necessarily the recommended or optimum rates but represent common farm practices in the area. This applies also to insecticides.

So far as possible, the data are given in physical quantities that represent the usual practices and rates of performance. The actual amounts will vary from year to year with seasonal conditions.

For such items as contract operations, 1957 cost rates are listed. These rates may vary with changes in market price or with adjustments in price relationship.

Compared with other areas of the State, there are many small farms in the West Cross Timbers. Two-row tractor-drawn equipment predominates.

Family labor is used mainly in growing all crops. As a rule, only relatively small amounts of labor are hired. However, contract labor is used to harvest much of the cotton grown in the area. Machine harvesting of cotton is not common.

Many farmers depend on custom combining for harvesting grain sorghum and oats. Hay baling is usually custom work also. In addition, as few farmers own the necessary equipment, those who put up silage usually hire someone with a field cutter at harvesttime. Hauling to the silo may or may not be hired.

Disc harrow (sweeps)	2.00	1.00	1.00	4.0	2.00	2.00
Box	1.00	2.00		2.0	3.00	
Irrigats				4.0	2.75	
Total preharvest		5.50	3.50		10.00	4.25
Harvest						
Plow and rake	1.0	.85	.85	1.0	1.20	1.20
Turn windrows	.5	.15	.15	1.0	.30	.30
Combine and bale	1.0	1.95	1.30	1.0	2.10	1.40
Haul nuts from field	1.0	.40	.20	1.0	.50	.25
Haul hay	1.0	.70	.35	1.0	.80	.40
Haul nuts to market	1.0	.80	.40	1.0	1.50	.75
Total		4.85	3.25		6.40	4.30
Custom contract operations						
Combining	1.0	at \$3.50 per acre		1.0	at 25 cents per bushel	
Bale hay	1.0	at 25 cents per bale		1.0	at 25 cents per bale	
Haul peanuts to market	1.0	at 4 cents per bushel		1.0	at 4 cents per bushel	

1/ 10 bales averaging 80 pounds. 2/ Truck.

Table 1. Peanut production and production practices, per acre, on deep sand

	<u>Dryland</u>			<u>Irrigated</u>		
Normal yield						
Nuts, pounds		600		1,030		
Hay, pounds ^{1/}		800		2,000		
Seed per acre (shelled), pounds		25		40		
Peanuts, (shelled) pounds		25		40		
Rye, pounds		40		40		
Average value of seed, cents per pound		10		17		
Peanuts, bought 100 percent		25		25		
Rye, bought 100 percent		4				
Sacks for nuts, number		10		17		
Fertilizer, pounds						
	<u>N</u>	<u>P₂O₅</u>	<u>K₂O</u>	<u>N</u>	<u>P₂O₅</u>	<u>K₂O</u>
	12	24	12	15	50	15
Usual planting period	Times Hours May - June					
Usual harvesting period	over Man Tractor August - November					
	<u>Labor and power inputs, two-row equipment</u>					
	<u>Times</u>	<u>Hours</u>		<u>Times</u>	<u>Hours</u>	
Operation	over	Man	Tractor	over	Man	Tractor
Preharvest	1.0	.50	.50	1.0	.50	.50
Cut stalks or disk	.33	.20	.20	1.1	.65	.65
Drill rye	.67	.35	.35	1.0	.50	.50
Disk or chisel rye	.67	.40	.40	1.0	.60	.60
Bed	1.00	.50	.50	1.0	.50	.50
Plant	1.10	.65	.65	1.1	.65	.65
Cultivate (rotary hoe)	1.00	.40	.40			
Cultivate (sweeps)	2.00	1.00	1.00	4.0	2.00	2.00
Hoe	1.00	2.00		2.0	3.00	
Irrigate				4.0	2.75	
Total preharvest		5.50	3.50		10.00	4.25
Harvest						
Flow and rake	1.0	.85	.85	1.0	1.20	1.20
Turn windrows	.5	.15	.15	1.0	.30	.30
Combine and bale	1.0	1.95	1.30	1.0	2.10	1.40
Haul nuts from field	1.0	.40	.20	1.0	.50	.25
Haul hay	1.0	.70	.35	1.0	.80	.40
Haul nuts to market	1.0	.80	.40 ^{2/}	1.0	1.50	.75 ^{2/}
Total		4.85	3.25		6.40	4.30
Common contract operations						
Combining	1.0 at \$3.50 per acre			1.0 at 25 cents per bushel		
Bale hay	1.0 at 25 cents per bale			1.0 at 25 cents per bale		
Haul peanuts to market	1.0 at 4 cents per bushel			1.0 at 4 cents per bushel		

^{1/} 10 bales averaging 80 pounds.

^{2/} Truck.

Table 2. Peanut production and production practices, per acre, medium sandy land

	Dryland			Irrigated		
Normal yield						
Nuts, pounds	600			1,030		
Hay, pounds	800			2,000		
Seed per acre (shelled), pounds	25			40		
Average value of seed, cents per pound	25			25		
Sacks for nuts, number	10			17		
Fertilizer, pounds						
	N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O
	12	24	12	15	50	15
Usual planting period				March - April		
Usual harvesting period				August - November		
	Labor and power inputs, two-row equipment					
	Times over	Hours		Times over	Hours	
		Man	Tractor		Man	Tractor
Preharvest						
Cut stalks or disk	.5	.30	.30			
Layoff rows	1.0	.35	.35	1.0	.35	.35
Bed	1.0	.50	.50	1.0	.50	.50
Cultivate beds	1.0	.50	.50	1.0	.50	.50
Plant	1.1	.65	.65	1.1	.65	.65
Cultivate (rotary hoe)	2.0	.80	.80	1.0	.40	.40
Cultivate (sweeps)	1.5	.75	.75	4.0	2.00	2.00
Hoe	1.0	2.00		2.0	3.00	
Irrigate preharvest				4.0	2.75	
Total preharvest		5.85	3.85		10.15	4.40
Harvest						
Plow and rake	1.0	.85	.85	1.0	1.20	1.20
Turn windrows	.5	.15	.15	1.0	.30	.30
Combine and bale	1.0	1.95	1.30	1.0	2.10	1.40
Haul nuts from field	1.0	.40	.20	1.0	.50	.25
Haul hay	1.0	.70	.35	1.0	.80	.40
Haul nuts to market	1.0	.80	.40 ^{2/}	1.0	1.50	.75 ^{2/}
Total		4.85	3.25		6.40	4.30
Common contract operations						
Combining	1.0	at \$3.50 per acre		1.0	at 25 cents per bushel	
Bale hay	1.0	at 25 cents per bale		1.0	at 25 cents per bale	

1/ Ten bales average 80 pounds.

2/ Truck.

Table 3. Corn production and production practices, per acre

	<u>Dryland</u>		
Normal yield, bushels	1, 20		
Seed per acre, pounds	7		
Average value of seed, cents per pound	20		
Bought, 100 percent	16		
Fertilizer, pounds	<u>N</u>	<u>P₂O₅</u>	<u>K₂O</u>
	12	24	12
Usual planting period	May - June		
Usual planting period	March - April		
Usual harvesting period	August - October		
	<u>Labor and power inputs</u>		
	<u>Times</u>	<u>Hours</u>	
	<u>over</u>	<u>Man</u>	<u>Tractor</u>
Operation			
Preharvest			
Cut stalks or disk	1.0	.30	.30
Layoff rows	1.0	.18	.18
Bed	1.0	.50	.50
Cultivate beds (rotary hoe)	1.0	.17	.17
Plant (sweeps)	1.1	.55	.55
Cultivate (rotary hoe)	1.0	.40	.40
Cultivate (sweeps)	1.5	.75	.75
Total preharvest		2.85	2.85
Harvest			
Snap and haul	1.0	6.00	2.00
Contract operations			
Combining	1.0	at \$3.00 per acre	

Table 4. Grain sorghum production and production requirements, per acre

	Dryland		
Normal yield, pounds	1,100		
Seed per acre, pounds	6		
Average value of seed, cents per pound	20		
Fertilizer, pounds	N	P ₂ O ₅	K ₂ O
	12	24	12
Usual planting period	May - June		
Usual harvesting period	August - September		
	<u>Labor and power inputs</u>		
	Times over	Man	Tractor
Preharvest			
Cut stalks or disk	.5	.30	.30
Layoff rows	.5	.18	.18
Bed	1.0	.50	.50
Cultivate beds	1.0	.50	.50
Plant	1.2	.60	.60
Cultivate (rotary hoe)	1.0	.40	.40
Cultivate (sweeps)	1.0	.50	.50
Total preharvest		2.98	2.98
Harvest			
Combine	1.0	.60	.60
Haul grain	1.0	.60	.60
Total		1.20	1.20
Common contract operations			
Combining	1.0 at \$3.00 per acre		
Total preharvest		8.53	3.53
Harvest			
Strip by hand	2.5	15.00	
Haul and gin	1.0	1.50	1.50
Total		16.50	1.50
Common contract operations			
Hand snapping	2.5 at \$2 per hundredweight		
Hand at \$10 per gallon.			

Table 5. Cotton production and production practices, per acre

	For bundles		Dryland		Irrigation	
Normal yield	4,000		12,000			
Lint, pounds			150			
Seed, pounds	8		240			
Seed per acre (fuzzy), pounds			20			
Value of seed (dollars per 100 pounds)	3		10.00			
Bought, 20 percent			5.00			
Homegrown, 80 percent						
Insecticide						
Spray, pints per application ^{1/}			1.5			
Fertilizer, pounds						
	N	P ₂ O ₅	K ₂ O		P ₂ O ₅	K ₂ O
	12	24	12	12	24	12
Usual planting period	April - May					
Usual harvesting period	August - November					
	Labor and power inputs		Two-row equipment			
	Times	Hours	Times	Hours		
	over	Man Tractor	Man	Tractor		
Cut stalks or disk	.5	.30	.5	.30		
Layoff rows	.5	.18	.5	.18		
Operation beds	1.0	.50	1.0	.50		
Preharvest (rotary hoe)	1.2	.60	1.2	.60		
Cut stalks or disk	1.0	.40	1.0	.40		
Layoff rows	1.0	.50	1.0	.50		
Bed		1.0		.50		
Cultivate beds		1.0		.50		
Plant		1.2		.65		
Cultivate (rotary hoe)		1.0		.40		
Cultivate (sweeps)	1.0	.75	2.0	.50		
Poison	1.0	3.00	2.0	.50		
Hoe	1.0	5.00	1.0	5.00		
Total preharvest		8.75		8.53	3.53	
Harvest						
Snap by hand		2.5		15.00	1.40	
Haul and gin		1.0		1.50	1.50	
Total				16.50	1.50	
Common contract operations						
Hand snapping				2.5 at \$2 per hundredweight		

^{1/} Endrin at \$10 per gallon.

1.0 at \$7-10 per acre
1.0 at \$2.50 per hour

Table 6. Forage sorghum (row crop) production and production practices, per acre

	Dryland					
	For bundles			For silage		
Normal yield, pounds	4,000			12,000		
Seed per acre, pounds	8			8		
Average value of seed, cents per pound	9			9		
Bought, 100 percent	9			9		
Binder twine, pounds	3			5		
Fertilizer, pounds	N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O
	12	24	12	12	24	12
Usual planting period	April - June					
Usual harvesting period	July - September					

Operation	Labor and power inputs, two-row equipment					
	Times over	Hours		Times over	Hours	
		Man	Tractor		Man	Tractor
Preharvest						
Cut stalks or disk	.5	.30	.30	.5	.30	.30
Layoff rows	.5	.18	.18	.5	.18	.18
Bed	1.0	.50	.50	1.0	.50	.50
Cultivate beds	1.0	.50	.50	1.0	.50	.50
Plant	1.2	.60	.60	1.2	.60	.60
Cultivate (rotary hoe)	1.0	.40	.40	1.0	.40	.40
Cultivate (sweeps)	1.0	.50	.50	1.0	.50	.50
Total preharvest		2.98	2.98		2.98	2.98
Harvest						
For bundles						
Bind	1.0	.75	.75			
Shock	1.0	3.00	3.00			
Haul and stack	1.0	5.00	1.67			
Total		8.75	5.42			
For silage						
Cut in field				1.0	1.40	1.40
Haul to silo				1.0	2.80	2.80
Pack				1.0	1.40	1.40
Total					5.60	5.60
Common contract operations						
Bind	1.0 at \$3.50 per acre					
Cut silage in field	1.0 at \$7-10 per acre					
Haul to silo	1.0 at \$2.50 per hour ^{1/}					
1. Truck and operator.						

Table 7. Sudan pasture production and production practices, per acre

	<u>Dryland</u>		
Normal yield (grazing days), number			75
Seed per acre, pounds			10
Average value of seed, cents per pound			2
Bought, 100 percent			12 5
Fertilizer, pounds	<u>N</u>	<u>P₂O₅</u>	<u>K₂O</u>
	12	24	12
Usual planting period	April - May		
Usual harvesting period	June - October		
	<u>Labor and power inputs</u>		
	<u>Two-row equipment</u>		
	<u>Times</u>	<u>Hours</u>	
Operation	<u>over</u>	<u>Man</u>	<u>Tractor</u>
Cut stalks or disk	.5	.30	.30
Layoff rows	.5	.18	.18
Bed	1.0	.50	.50
Cultivate beds	1.0	.50	.50
Plant	1.2	.60	.60
Cultivate (rotary hoe)	1.0	.40	.40
Cultivate (sweeps)	1.0	.50	.50
Total		2.98	2.98
	1.0	.22	.22
Total preharvest		1.40	1.40
Harvest			
Combining	1.0	.60	.60
Bale cuts	1.0	.50	.50
Total		1.10	1.10
Some contract operations			
Combining		1.0 at \$3 per acre	

Table 8. Oats or oats-vetch production and production requirements, per acre

	Dryland		
Normal yield	Dryland		
Harvested for grain, bushels	25		
Grazed entirely (grazing days), number	65		
Seed per acre, pounds	1.5		
Oats, bushels	2		
Vetch (when added), pounds	12		
Average value of seed (dollars per bushel)			
Bought, 20 percent	1.50		
Homegrown, 80 percent	.75		
Vetch, cents per pound	N	P ₂ O ₅	K ₂ O
	12	20	0
Fertilizer, pounds	N	P ₂ O ₅	K ₂ O
	16	20	0
Usual planting period	October - November		
Usual harvesting period	May - June		
	Labor and power inputs		
	Two-row equipment		
	Times over	Hours	
		Man	Tractor
Operation			
Preharvest			
Cut stalks	.5	.30	.30
Disk	1.0	.60	.60
Drill	1.0	.50	.50
Total preharvest	2.0	1.40	1.40
Harvest			
Combining	1.0	.60	.60
Haul oats	1.0	.50	.50
Total	2.0	1.10	1.10
Common contract operations	1.0 at \$3 per acre		
Combining			

Table 10. Watermelon production and production practices, per acre

Table 9. Watermelon production and production practices, per acre

	<u>Dryland</u>		
Normal yield, pounds	10,000		
Seed per acre, pounds	12	1.5	
Average value of seed, dollars per pound	2.25		
Bought, 100 percent	2		
Insecticides			
Spray, pints ^{1/}	0	2	0
Dusts, pounds ^{2/}	30		
Fertilizer, pounds	<u>N</u>	<u>P₂O₅</u>	<u>K₂O</u>
	12	24	12
Usual planting period	April		
Usual harvesting period	July		
	<u>Labor and power inputs</u>		
	<u>Two-row equipment</u>		
	<u>Times</u>	<u>Hours</u>	
Operation	<u>over</u>	<u>Man</u>	<u>Tractor</u>
Preharvest			
Disk	1.0	.60	.60
Bed and fertilize	1.0	.50	.50
Cultivate beds	1.0	.50	.50
Plant	1.0	.20	.20
Cultivate	2.5	1.00	1.00
Spray	2.0	.20	.20
Dust	2.0	.20	.20
Thin and prune	2.0	<u>3.00</u>	<u> </u>
Total preharvest		6.20	3.20
Total harvest		12.00	2.00

^{1/} Parathion at \$12 per gallon.

^{2/} Parathion at \$8.50 per cwt.

Table 10. Vetch seed production and production practices, per acre

	<u>Dryland</u>		
Normal yield, pounds	200		
Seed per acre, pounds	10		
Average value of seed, cents per pound	12		
Homegrown, 100 percent			
Sacks, number	2		
Fertilizer, pounds	$\frac{N}{0}$	$\frac{P_2O_5}{30}$	$\frac{K_2O}{0}$
Usual planting period	October		
Usual harvesting period	May		
	<u>Labor and power inputs</u>		
	<u>Two-row equipment</u>		
	<u>Times</u>	<u>Hours</u>	
Operation	<u>over</u>	<u>Man</u>	<u>Tractor</u>
Preharvest			
Disk	1.0	.60	.60
Drill and distribute fertilizer	1.0	<u>1.00</u>	<u>.50</u>
Total preharvest		1.60	1.10
Harvest			
Combine	1.0	1.20	.60
Haul seed	1.0	<u>.20</u>	<u>.10</u>
Total		1.40	.70

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