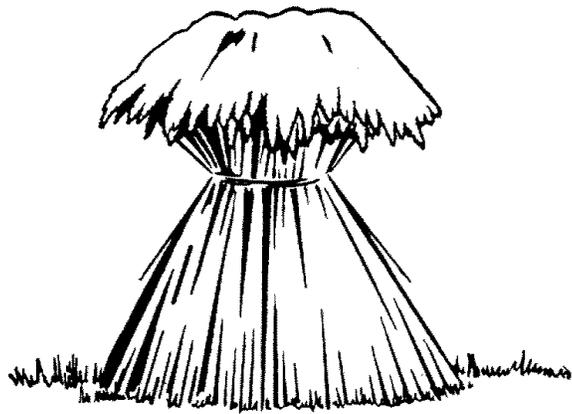

U.C. COOPERATIVE EXTENSION

SAMPLE COST TO ESTABLISH AND PRODUCE

WHEAT



FLOOD IRRIGATED

IMPERIAL COUNTY – 2000

Prepared by:
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For an explanation of calculations used for the study refer to the attached General Assumptions or call the author, Keith S. Mayberry , at the Imperial County Cooperative Extension office, (619)352-9474 or e-mail at ksmayberry@ucdavis.edu.

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University of California and the United States Department of Agriculture cooperating.

FOREWORD

We wish to thank growers, pest control advisors, seed companies, transplant producers, contract harvesters, fertilizer dealers, and equipment companies for providing us with the data necessary to compile this circular. Without them we could not have achieved the accuracy needed for evaluating the dynamic and important vegetable industry in Imperial County.

The information presented herein allows one to get a "ballpark" idea of field crops production costs and practices in the Imperial County. They do not reflect the exact values or practices of any grower or shipper, but are rather an amalgamation of countywide prevailing costs and practices. Exact costs incurred by individual growers depend upon many variables such as weather, land rent, seed, choice of agrichemicals, location, etc. No exact comparison with individual grower practice is possible or intended. The budgets do reflect, however, the prevailing industry trends within the region.

Overhead usually includes secretarial and office expenses, supplies, donations, utilities, transportation, accountants, insurance, safety training, permits, etc. The amount of overhead charged depends upon the crop and the size of the labor crew, payroll, supplies, and supervision needed for culture.

Since all of the inputs used to figure production costs are impossible to document in a single page, we have included extra expense in man-hours or overhead to account for such items as pipe setting, motor grader, water truck, shovel work, etc. Whenever possible we have given the costs of these operations per hour.

Not included in these production costs are expenses resulting from loans, supervision, or return on investments. If these items were taken into account, the budget may need to be increased by 7-15%.

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**2000-2001 FIELD CROPS PREVAILING RATES
IMPERIAL COUNTY**

**HEAVY TRACTOR WORK & LAND
PREPARATION**

<u>OPERATION</u>	<u>\$/ACRE</u>
Plow.....	27.75
Subsoil, 2 nd gear.....	38.75
Subsoil, 3 rd gear.....	32.75
Landplane.....	12.00
Triplane.....	11.00
Chisel ∇ 15".....	24.75
Wil-Rich chisel.....	14.75
Big Ox.....	21.25
Slip plow.....	39.00
Pull/disc borders.....	6.00
Make cross checks (taps).....	6.00
Break border.....	5.75
Disc, stubble.....	21.75
Disc, regular.....	11.50
List 40" beds.....	13.50
Float.....	10.00
Disc, borders.....	11.25
Laser (acre).....	34.00-38.00
Dump (scraper) borders.....	14.00

PREVAILING RATES BY THE HOUR

	<u>\$/HR</u>
Motor grader.....	50.00
Backhoe.....	42.50
Water truck.....	39.00
Wheel tractor.....	32.00
Scraper.....	27.00
Versatile.....	53.00
D-6.....	46.50
D-8.....	65.00
Burn ditches.....	28.00
Buck ends of field.....	30.00
Pipe setting (2 men).....	33.00
Laser.....	70.00
Work ends.....	40.00

**PLANTING, CULTIVATING & LIGHT
TRACTOR WORK**

Power mulch dry.....	23.00
Power mulch with herbicide.....	27.00
Shape 40" beds.....	9.50
Precision plant 40" beds.....	17.50
Plant and shape sugar beet beds.....	14.50
Mulch plant wheat.....	11.25

Plant alfalfa (corrugated)..... 16.00

**PLANTING, CULTIVATING & LIGHT
TRACTOR WORK (continued)**

<u>OPERATION</u>	<u>\$/ACRE</u>
Plant bermudagrass (flat).....	12.00
Plant sudangrass.....	10.50
Cultivate 4-row 40" beds.....	13.00
Spike 40" beds.....	9.75
Spike and furrow 4-rows 40-42" beds.....	10.25
Furrow out 40-42" beds.....	9.75
Lilliston 40" beds.....	10.75
Lilliston 40" beds with/herbicides.....	14.50
Inject fertilizer and furrow out 40" beds.....	13.50
Fertilize dry and furrow out 40" beds.....	13.50
Broadcast dry fertilizer >300lb/a.....	7.00
Broadcast dry fertilizer <300lb/a.....	6.00
Ground spray 4-row.....	10.00
Ground spray 8-row.....	9.00
Layby herbicide.....	22.00
Drill with cultipacker.....	15.00
Chop cotton stalks.....	12.00

HARVEST COSTS

	<u>BY UNIT</u>
Combine alfalfa seed.....	40.00/acre
Windrow alfalfa seed.....	15.00/acre
Rake bermudagrass (heavy).....	7.00/acre
Rake bermudagrass (light).....	4.00/acre
Swath bermudagrass (heavy).....	15.00/acre
Swath bermudagrass (light).....	10.00/acre
Swath sudangrass.....	10.00/acre
Rake sudangrass.....	5.00/acre
Crimp sudangrass.....	8.00/acre
Swath alfalfa.....	7.75/acre
Rake alfalfa.....	3.75/acre
Bale (all types of hay).....	0.63/bale
Haul & stack hay.....	0.24/bale
Dig sugar beets.....	2.50/clean ton
Haul sugar beets.....	2.45/clean ton
Combine wheat.....	15/ton + 0.55/cwt over 1 ton
Haul wheat.....	5/ton

IRRIGATION

Sprinkler irrigate flat crops.....	\$125-160.00/acre
Flood irrigate flat crops.....	variable
Irrigate bed-planted crops.....	variable
1ac-ft water.....	14.56

IMPERIAL COUNTY WHEAT CULTURE 2000-2001

Annual acreage, yield, and value of wheat in
Imperial County, CA for five consecutive years

Year	Acres	Yield/Acre (tons)	Value/Acre
1999	44,303	3.06	\$361
1998	83,882	3.30	\$486
1997	93,431	3.22	\$491
1996	110,173	3.01	\$526
1995	67,117	2.75	\$467

(Source: I.C. Agricultural Commissioner's Reports).

PLANTING DATES, RATES AND DEPTH Optimum planting dates for high wheat yields are from December 1 through January 15. Seeding rates range from 100-150 pounds per acre. If the crop is surface irrigated to emergence, plant the seed 0.5 to 1 inch deep.

When wheat is planted in mulch, seed should not be planted deeper than 3-4 inches. On harder ground, an "eagle beak" type planter may be used instead of a conventional disc opener drill planter.

VARIETIES Desert Durum® is a trademark used for locally grown durum wheats that command a premium in the marketplace. Commonly used varieties include "Kronos", "Kofa", and "WPB881". Much of the durum wheat is used for making semolina flour for pasta.

FERTILIZATION Imperial Valley soils usually contain sufficient phosphorus for wheat production. This is especially true if phosphate fertilizer has been applied to other crops in the rotation (i.e., vegetables). In a wheat-sudangrass rotation, phosphate fertilizer, if used, should be applied to the wheat. Wheat generally needs 200-350 pounds of actual nitrogen per acre, depending on the previous crop. Less nitrogen is needed when wheat follows early winter vegetables or alfalfa. For good yield and quality of varieties with a tendency towards yellowberry (soft, bleached kernels), nitrogen fertilizer should be split into 3 applications—at preplant, tillering, and boot stage.

IRRIGATION The pre-mulch irrigation should be heavy. Subsequent irrigations should be sufficient to maintain good growth and avoid plant stress. Yield may be increased by applying the last irrigation as late as the medium dough stage of the maturing wheat berries (kernels), but late irrigation also increases the risk of shattering and lodging.

PEST CONTROL Weeds should be controlled in wheat to increase yield and to reduce the weed population in following crops. Consult your PCA or Weed Science Farm Advisor for herbicides that are available for use.

Aphids are the only insects that may cause serious damage to wheat. Greenbug and the Russian wheat aphid occasionally cause severe damage if not controlled.

Black point or kernel smudge is characterized by dark and shriveled kernels. Germination and market value of the wheat is decreased. Several fungi may be involved including *Alternaria*, *Fusarium* and *Helminthosporium* species. Other diseases include powdery mildew (*Erysiphe graminis*), foot rot (*Fusarium graminearum*), root rot (*Helminthosporium sativum*), and needle nematode (*Longidorus africanus*).

HARVESTING Wheat harvest begins mid-May and continues through mid-June. Harvesting is normally done by commercial harvesting companies. In addition to local companies, there are many custom harvesters who travel from the Midwest.

Flood Irrigated WHEAT PRODUCTION COSTS 2000-2001
Flood Irrigated to Emergence

Mechanical operations at prevailing rates. Labor at \$7.75 /hr. (\$5.75 plus SS, unemployment, and fringe benefits).
 Yield--3 tons per acre. Days to maturity 90-170 days.

OPERATION	Prevailing Rate	MATERIALS		HAND LABOR		COST Per Acre
		Type/Amount	Cost	Hours	Dollars	
<i>LAND PREPARATION</i>						
Stubble disc 1x	21.75					21.75
Disc 2x	11.50					23.00
Inject fertilizer	11.00	125 lb N @ .165	20.63			31.63
List borders	11.25					11.25
Float	10.00					10.00
TOTAL LAND PREPARATION COSTS						97.63
<i>GROWING PERIOD</i>						
Drill with cultipacker	15.00	150 lb seed @ .18	27.00			42.00
Irrigate 5-7x		3 ac-ft	43.68	4	31.00	74.68
Fertilize 2x (water-run)		160 lb N @ .165/lb	28.80			28.80
Weed control	7.50	Herbicide	9.75			17.25
Work ends	5.00					5.00
TOTAL GROWING PERIOD COSTS						167.73
GROWING PERIOD & LAND PREPARATION COSTS						265.36
Land rent (net acres)						125.00
Cash overhead--		12 % of growing period, land prep & land rent				46.84
TOTAL PREHARVEST COSTS						437.20
<i>HARVEST COSTS</i>						
Combine		3 tons @ \$15/ac + 0.55/ cwt over 1 ton				37.00
Haul		3 tons @ 5.00 /ton				15.00
Wheat Commission Assessment		0.035 cents/cwt				1.74
TOTAL HARVEST COSTS						53.74
TOTAL ALL COSTS						490.94

PROJECTED NET GAIN (\$/PER ACRE)

CWT (per acre)	Price/cwt (\$)					Break-even (\$/cwt)
	6.00	7.00	8.00	9.00	10.00	
40	-234	-194	-154	-114	-74	11.86
50	-183	-133	-83	-33	17	9.65
60	-131	-71	-11	49	109	8.18
70	-79	-9	61	131	201	7.13
80	-28	52	132	212	292	6.34

**IMPERIAL COUNTY WHEAT PRODUCTION COSTS 2000-2001
(mulch planted)**

Mechanical operations at prevailing rates. Labor at \$7.75 /hr. (\$5.75 plus SS, unemployment, and fringe benefits)
Yield--3.0 tons per acre. Days to maturity 90-170 days.

OPERATION	Prevailing Rate	MATERIALS		HAND LABOF		COST
		Type/Amount	Cost	Hours	Dollars Per Acre	
<i>LAND PREPARATION</i>						
Stubble disc 1x	21.75					21.75
Disc 2x	11.50					23.00
Inject fertilizer	11.00	125 lb N @ .165	13.50			24.50
List borders	11.25					11.25
Float	10.00					10.00
TOTAL LAND PREPARATION COSTS						90.50
<i>GROWING PERIOD</i>						
Preplant much irrigation		0.5 ac-ft	7.28	1	7.75	15.03
Mulch soil for planting	10.00					10.00
Drill into mulch	11.75	150 lb seed @ 0.20	30.00			41.75
Plant borders	4.00					4.00
Irrigate 5-7x		2.5 ac-ft	36.40	4	31.00	67.40
Fertilize 2x (water-run)		160 lb N @ .165/lb	26.40			26.40
Work ends	5.00					5.00
TOTAL GROWING PERIOD COSTS						169.58
GROWING PERIOD & LAND PREPARATION COSTS						260.08
Land rent (net acres)						125.00
Cash overhead--	12 % of growing period & land rent					46.21
TOTAL PREHARVEST COSTS						431.29
<i>HARVEST COSTS</i>						
Combine		3 tons @ \$15/ac + 0.55/ cwt over 1 ton				37.00
Haul		3 tons@ 5.00 /ton				15.00
Wheat Commission						
Assessment	0.035 /cwt					2.10
TOTAL HARVEST COSTS						54.10
TOTAL ALL COSTS						485.39

PROJECTED NET GAIN (\$/ ACRE)

CWT (per acre)	Price/cwt (\$)					Break-even (\$/cwt)
	6.00	7.00	8.00	9.00	10.00	
40	-229	-189	-149	-109	-69	11.72
50	-177	-127	-77	-27	23	9.54
60	-125	-65	-5	55	115	8.09
70	-74	-4	66	136	206	7.05
80	-22	58	138	218	298	6.28