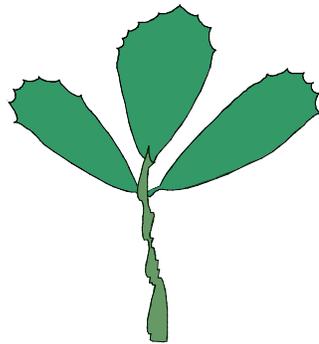

U.C. COOPERATIVE EXTENSION
SAMPLE COST TO ESTABLISH AND PRODUCE

ALFALFA



SEED PRODUCTION
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 ALFALFA SEED CULTURE 2000-2001

Annual acreage, yield, and value of alfalfa seed in
Imperial County for five consecutive years

Year	Acres	Yield/Acre (lbs.)	Value/Acre
1999	24,362	411	\$517
1998	19,781	476	\$747
1997	11,739	530	\$853
1996	13,238	435	\$543
1995	13,423	440	\$546

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

STARTING DATES The most favorable time for starting a good alfalfa seed crop occurs between May 1 and May 15. By early June, the field should be in full bloom. Seed crops made at this time of year have the best chance of avoiding lygus, stink bugs, and alfalfa seed chalcid infestations. Later seed crops (maturing in August and September) are at high risk of being damaged by rain. Seed crops started before May often do not bloom properly due to cold weather, and the amount of seed set may be low.

YIELD Seed yield depends upon weather conditions during seed set as well as the severity of insect damage. Heavy rain can ruin a seed crop in minutes. Seed yield per acre varies from a few hundred pounds to as much as 1,000 pounds.

Often seed is made on fields producing alfalfa hay. Normally there is a lower rent charged against the seed crop on a hay field than one leased for seed alone. If a field were selected for seed only or leased for seed, the rent might be \$140 per acre or more.

VARIETIES A number of nondormant varieties both public and proprietary are grown in Imperial County. Any alfalfa variety may be grown for seed; however, the grower should follow seed market trends before making a decision to grow a seed crop. Some growers produce seed for their own use. Occasionally a small acreage of dormant varieties will be grown by special arrangement if seed demand indicates good potential returns.

IRRIGATION Allow the plants to become slightly water stressed until the bloom period to prevent rank growth. After bloom begins, the plants should be irrigated no more frequently than necessary to prevent wilting and to help produce well-filled seedpods. The flowers of a slightly stressed plant contain a high concentration of nectar and are more attractive to bees.

POLLINATION Bees are the only insect pollinators of any value on alfalfa. In Imperial County, it is necessary to rely on commercial honeybees or commercial solitary bees due to the lack of sufficient wild bees available. At least three colonies of bees per acre are needed to produce high seed yields. Five or more colonies may produce higher seed yields on fields with high seed potential. Since the price of bees is high (\$28/colony), some growers prefer to use fewer bees.

PEST CONTROL Lygus control is necessary throughout the season. Stinkbugs can cause damage to maturing seed and should be controlled. Seed chalcid is best managed by proper cultural practices, as insecticides have not been cost effective. Consult your pest control advisor for information on currently registered insecticides.

As with hay production, Root rot (*Phytophthora* spp.) stem canker (*Rhizoctonia solani*) and anthracnose (*Colletotrichum trifolii*) can be severe problems.

HARVESTING. Mowing and windrowing to dry seed before combining is practiced.

IMPERIAL COUNTY PROJECTED ALFALFA SEED PRODUCTION COSTS 2000-2001

Flat Planted Culture

Mechanical operations at prevailing rates. Labor at \$7.75/hr. (\$5.75 plus SS, unemployment, and fringe benefits)

Typical yield of 400 pounds of clean seed (~570 pounds noncleaned) in 90 days on an established alfalfa hay stand.

OPERATION	Prevailing Rate	MATERIALS		HAND LABOR		COST Per Acre
		Type/Amount	Cost	Hours	Dollars	
<i>SEED PRODUCTION COSTS</i>						
Irrigate 4x		Water 2 ac-ft	29.12	2	15.50	44.62
Insect control 3x	8.00	Insecticides	50.00			74.00
Bees		3 colonies @ 27.00	81.00			81.00
TOTAL GROWING PERIOD COSTS						199.62
Land rent (net acres)						75.00
Cash overhead--		13 % of growing period costs and land rent				35.70
TOTAL PREHARVEST COSTS						310.32
<i>HARVEST COSTS @ 570 pounds / acre</i>						
Windrow 1x	15.00 /acre					15.00
Combine	40.00 /acre					40.00
Hauling	170.00 truck load				~estimate	2.50
Cleaning seed	7.00 /cwt.	570 pounds noncleaned				39.90
Bags	1.00 /cwt.	400 pounds clean				4.00
Seed Research Fee	0.10 /cwt.					0.40
TOTAL HARVEST COSTS						101.80
TOTAL ALL COSTS						412.12

PROJECTED NET GAIN (PER ACRE)

Yield Pounds clean seed/acre	Price/pound (\$)					Breakeven \$ per pound
	0.80	1.00	1.20	1.40	1.60	
200	-230	-190	-150	-110	-70	1.95
300	-161	-101	-41	19	79	1.34
400	-92	-12	68	148	228	1.03
500	-23	77	177	277	377	0.85
600	46	166	286	406	526	0.72