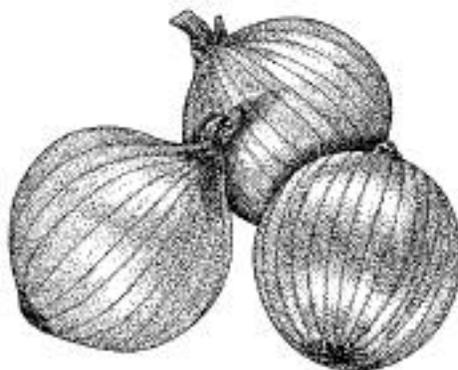


U.C. COOPERATIVE EXTENSION
SAMPLE COST TO ESTABLISH AND PRODUCE

ONIONS



FOR DEHYDRATION

IMPERIAL COUNTY – 2003

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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, chemical applicators and dealers, custom farm operators, fertilizer dealers, seed companies, contract harvesters, equipment companies, and the Imperial County Agricultural Commissioners office for providing us with the data necessary to compile this circular. Without them we could not have achieved the accuracy needed for evaluating the cost of production for the field crop industry in Imperial County.

The information presented herein allows one to get a "ballpark" idea of field crop production costs and practices in the Imperial County. They do not reflect the exact values or practices of any one grower, but are rather an average 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, time of planting, 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, general farm supplies, communications, utilities, farm shop, transportation, moving farm equipment, accountants, insurance, safety training, permits, etc. In most of the crop guidelines contained in this circular we used 13 % of the total of land preparation, growing costs and land rent to estimate overhead.

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, bird and rodent control, etc. Whenever possible we have given the costs of these operations per hour listed on the cultural operations page.

Not included in these production costs are expenses resulting from management fees, loans, providing supervision, or return on investments. The crop budgets also do not contain expenses encumbered for road and ditch maintenance, and perimeter weed control. If all the above items were taken into account, the budget may need to be increased by 7-15%.

Where applicable we have used terminology that is commonly used in the agricultural industry. These terms are compiled in a glossary at the end of the circular. We feel that an understanding of these terms will be useful to entry-level growers, bankers, students and visitors.

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**2002-2003 Field/Vegetable Prevailing Rate for Field Operations
IMPERIAL COUNTY**

**HEAVY TRACTOR WORK & LAND
PREPARATION**

<u>OPERATION</u>	<u>\$/ACRE</u>
Plow.....	30.50
Subsoil, 2 nd gear.....	39.00
Landplane	12.75
Triplane	11.25
Chisel 15".....	25.00
Wil-Rich chisel.....	16.00
Big Ox	24.00
Slip plow.....	41.00
Pull/disc borders	6.75
Make cross checks (taps).....	6.25
Break border	6.00
Disc, stubble	21.00
Disc, regular.....	12.50
Corrugate	11.00
Disc, regular with ring roller.....	13.50
List 30" beds 12-row	15.00
List 40" beds 8-row	15.00
Float.....	10.00
Disc, borders.....	7.00
Dump (scraper) borders	14.50

LIGHT TRACTOR WORK

Power mulch dry.....	25.00
Power mulch with herbicide	28.00
Shape 30" 6 row	10.75
Shape 40" 4 row	10.75
Plant 30" beds nonprecision	20.00
Plant 40" beds nonprecision	18.00
Precision plant 30" beds	22.00
Precision plant 40" beds	20.00
Mulch plant wheat	19.50
Plant alfalfa (corrugated).....	17.50
Plant bermudagrass (flat).....	13.75
Plant sudangrass.....	14.75
Cultivate 30" beds 4-row	16.00
Cultivate 40" beds 4-row	14.00
Spike 30" beds 4-row.....	13.25
Spike 40" beds 4-row.....	11.25
Spike and furrow out 30" 4-row	14.00
Spike and furrow out 40" 4-row	12.00
Furrow out 30" beds 4-row.....	13.25
Furrow out 40" beds 4-row.....	11.25
Lilliston 30" beds 6-row	13.00
Lilliston 40" beds 4-row	13.00
Lilliston 30" beds with/herbicides 6-row.....	15.00

Lilliston 40" beds with/herbicides 4 -row.....	15.00
Inject fertilizer & furrow out 30" beds 4-row	15.00
Inject fertilizer & furrow out 40" beds 4-row	13.00
Fertilize dry & furrow out 30" beds.....	17.00
Fertilize dry & furrow out 40" beds.....	15.00
Flat inject fertilizer NH ₃	15.00
Broadcast dry fertilizer	7.00
Ground spray 40" 8-row	12.00
Ground spray 30" 8-row	14.00
Chop cotton stalks.....	13.75

HARVEST COSTS Field Crops

	<u>BY UNIT</u>
Combine alfalfa seed	41.75/acre
Windrow alfalfa seed	17.50/acre
Rake bermudagrass	5.00/acre
Swath bermudagrass	13.50/acre
Swath sudangrass.....	11.25/acre
Rake sudangrass.....	5.25/acre
Swath alfalfa	8.00/acre
Rake alfalfa.....	4.50/acre
Bale (all types of hay- small bale)	0.65/bale
Haul & stack hay – small bale	0.25/bale
Bale (large bale 4X4).....	10.00/bale
Bale (large bale Jr. 3X4).....	9.00/bale
Stack & load large bale.....	6.00/bale
Dig sugar beets	2.60/clean ton
Haul sugar beets.....	2.45/clean ton
Combine wheat 15 per acre + 0.55 /cwt over 1 ton	
Haul wheat.....	5.50/ton
Combine bermudagrass seed 1 st time	40.00/acre
Combine bermudagrass seed 2 st time	25.00/acre
Haul bermudagrass seed (local).....	175/load
Haul bermudagrass seed (Yuma).....	300/load

MISCELLANEOUS OPERATIONS BY THE HOUR

Motor grader.....	48.00
Backhoe	45.00
Water truck	40.00
Wheel tractor	35.00
Scraper.....	36.00
Versatile.....	56.00
D-6.....	56.00
D-8.....	70.00
Buck ends of field.....	28.00
Pipe setting (2 men)	37.00
Laser	88.00
Work ends (disc out rotobucks).....	35.00

DEHYDRATOR BULB ONION CULTURE 2002-2003

Annual acreage, yield, and value of dehydrator onions in
Imperial County, CA (1997-2001)

Year	Acres	Yield/Acre (tons)	Gross Value/Ton
2001	5,508	13.85	\$103
2000	5,436	19.50	\$94
1999	5,524	20.68	\$92
1998	5,086	21.04	\$87
1997	5,350	19.10	\$86

Source: Imperial County Agricultural Commissioner's Reports 1997-2001

PLANTING-HARVESTING DATES Since dehydrator onions are grown under contract, the dehydrators recommend the planting date to the grower and supply the seed. Planting dates may differ with variety, but normally dehydrator onions will be planted between October 5 and November 10. Harvesting starts in May and continues until the entire crop is harvested.

VARIETIES Most dehydrator onions are "White Creole" derivatives selected for a high soluble solids content. The dehydrators provide seed for the grower.

PLANTING INFORMATION Germination of onion seed is normally lower than many other vegetable seed. Therefore, growers should work closely with seed companies to insure that the seed meets their needs and adjust seeding rates accordingly. The normal range for germination is between 70 to 85 percent

Some dehydrators supply the onion planter and the grower supplies the field labor for planting. Under good conditions, roughly 2½ acres can be planted per hour.

Seed should be sown about ¾ inch deep. Dehydrator onions are normally planted on 40-inch beds with 6 seed lines per bed. Seed spacing down the row is roughly 2½ to 3 inches and between lines is 2½ to 3 inches. A 3 to 4 inch space is left in the middle of the bed for salt accumulation.

SOILS Medium-textured sandy loams are preferred. Onions are shallow-rooted and need a friable soil that retains moisture well, especially after cultivation. Avoid salty, hard crusting, or weed-infested soils. Onions may be grown on sandy soils provided that moisture is made available whenever needed.

IRRIGATION Onions are generally sprinkled to emergence. It may take 10 days for the seed to germinate, or longer with November plantings. During germination and emergence, seed must not be allowed to dry out and the soil surface should be moist.

Onions should never suffer from lack of water. Stressing them for water before maturity may cause splitting and lower yields. Weather and soil conditions determine the number of irrigations required to grow a crop; usually 7 to 12 irrigations per season. The last irrigation is often scheduled for late March or early April.

FERTILIZER Generally 300 to 500 pounds of 11-52-0 ammoniated phosphate are broadcast prior to listing. During the season 150 to 200 pounds of actual nitrogen are applied during the growing season. Late applications of nitrogen tend to cause re-greening and may add to bulb splitting.

PEST AND DISEASE CONTROL Mites, thrips, armyworms, leafminers, and maggots are the major insect pests of onions. Fields should be checked regularly for these pests.

Downy mildew (*Peronospora destructor*) and *Stemphylium* leaf blight (*Stemphylium vesicarium*) are the major fungal pests of onions. These diseases can be very destructive if left unchecked. Pink root (*Phoma terrestris*) is a soil-borne disease affecting onions; crop rotation and resistant varieties should be used to suppress the problem.

Nematodes can cause damage in onions, however, this problem rarely occurs in late fall planting period because temperatures do not favor nematode activity.

Hand weeding is often very destructive to the onion stand, but may be used one time to remove larger volunteer weeds that were not controlled with herbicide or cultivation. Herbicide use is essential to maximize onion yield. Chemigation looks promising as a method of applying one class of herbicide to keep equipment traffic in the field to a minimum. Follow the label directions closely to achieve the best weed control and least crop injury.

HARVESTING Dehydrator onions are machine-topped, undercut, and covered with a fine layer of soil to "cure" before harvesting. The onions are then mechanically dug up and lifted to a sorter to remove clods and excess debris before being loaded on trucks for shipment to the processing plant. The contractor does all harvesting. Contracts for acreage vary yearly according to the supplies on hand at the processing plant. Some years, there is large carry over.

Prices per ton may vary slightly among contractors. Some have a sliding scale; others give a premium on certain bulb sizes. These factors affect the price per ton on any given field. Only the grower and dehydrator can provide exact data.

For more information see "Dehydrator Bulb Onion Production in California", DANR Publication 7239 available from the Imperial County Cooperative Extension Office or for a free download from the Internet go to <http://anrcatalog.ucdavis.edu/specials.ihtml>

DEHYDRATOR ONIONS PROJECTED PRODUCTION COSTS 2002-2003

Hand labor at \$9.25per hour (\$6.75 plus SS, unemployment insurance, transportation, supervision, workman's compensation, and fringe benefits).

Yield- 20 Tons

OPERATION	Cost	Materials		Hand Labor		Cost Per acre
		Type	Cost	Hours	Dollars	
LAND PREPARATION						
Chisel 15"	25.00					25.00
Disc 2x	12.50					25.00
Triplane 1x	11.25					11.25
Border, cross check & break borders	19.00					19.00
Flood		Water 1 ac/ft	16.00	1	9.25	25.25
Disc 2x	12.50					25.00
Triplane 1x	11.25					11.25
Fertilize, spread	7.00	500 lb. 11-52-0	58.75			65.75
List 40" beds	15.00					15.00
TOTAL LAND PREPARATION						222.50
GROWING PERIOD						
Power mulch	25.00					25.00
Precision plant	NC	Seed	N/C	1	9.25	9.25
Herbicide, planting	12.50	Dacthal	65.00			77.50
Sprinkler irrigate	185.00					185.00
Cultivate 2x	13.00					26.00
Spike 2x	11.25					22.50
Fertilize & furrow out 2x	13.00	250 lb. N @ .32	80.00			106.00
Weed control 2x	12.50	Herbicides	42.00			67.00
Hand weed				9	83.25	83.25
Irrigate 12x		Water 4 1/2 ac/ft	72.00	13	120.25	192.25
Insect control 3x	10.00	Insecticides	60.00			90.00
Disease control 4x	10.00	Fungicides	42.00			82.00
TOTAL GROWING PERIOD						965.75
GROWING PERIOD & LAND PREPARATION COSTS						1188.25
Land Rent (net acres)						200.00
Cash Overhead-----		13 % of preharvest costs & land rent				180.47
TOTAL PREHARVEST COSTS						1568.72

HARVEST COSTS None -- contracted @~ 95.00 / ton return to grower

		PROJECTED PROFIT OR LOSS PER ACRE					Break-even tons/acre
		Tons/acre					
		14.00	16.00	18.00	20.00	22.00	
\$/Ton	95.00	-239	-49	141	331	521	16.51