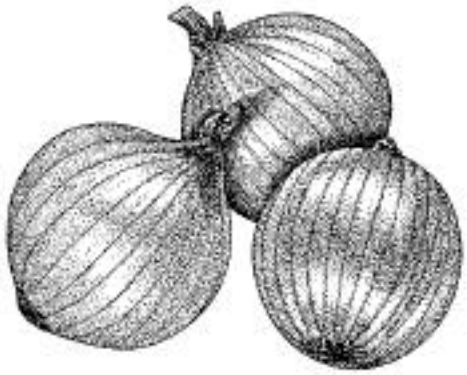
U.C. COOPERATIVE EXTENSION

SAMPLE COST TO ESTABLISH AND PRODUCE

ONIONS



FOR DEHYDRATION

IMPERIAL COUNTY – 2000

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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.

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 cost of production for the dynamic and important vegetable industry in Imperial County.

The information presented herein allows one to get a "ballpark" idea of vegetable 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. 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. For crops that require additional labor or extra operations (i.e. leaf lettuce) we used 17% overhead to account for the additional expenses.

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 management fees, loans, supervision, or return on investments. The crop budgets also do not contain expenses encumbered for cleanup discing, road and ditch maintenance, perimeter weed control. If all the above items were taken into account, the budget may need to be increased by 7-15%.

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2000-2001 VEGETABLE CROPS PREVAILING RATES
IMPERIAL COUNTY

HEAVY TRACTOR WORK & LAND PREPARATION

OPERATION	$/ACRE
Plow	27.75
Subsoil, 2nd gear	38.75
Subsoil, 3rd 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

PLANTING, CULTIVATING & LIGHT TRACTOR WORK

	$/HR
Power mulch dry	23.00
Power mulch with herbicide	27.00
Shape 40" beds	9.50
Precision plant 40" beds	17.50
Cultivate 4-row 40" beds	13.00
Spike 40" beds	9.75
Spike and furrow 4-rows 40" 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

PREVAILING RATES BY THE HOUR

	$/HR
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

IRRIGATION

Sprinkler irrigate	$125-160.00/acre
1 acre-foot of water	14.56
Sprinkler irrigate carrots	155.00

*Note – Cultural rates for specific crop operations listed on crop budgets.

DEHYDRATOR BULB ONION CULTURE 2000-2001

Annual acreage, yield, and value of dehydrator onions in Imperial County, CA (1995-1999)

Year	Acres	Yield/Acre (tons)	Gross Value/Ton
1999	5,524	20.68	$92
1998	5,086	21.04	$87
1997	5,350	19.1	$86
1996	7,259	17.5	$85
1995	6,925	19.3	$80

Source: Imperial County Agricultural Commissioner's Reports 1995-99

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 all the 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 vegetables. 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 within-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 which 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 seeds to germinate, or longer with November plantings. During germination and emergence, seeds 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 are broadcast prior to listing. During the season 150 to 200 lb of 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. All harvesting is done by the contractor. Contracts for acreage vary yearly according to the supplies on hand at the processing plant. Some years, there are large carry overs.

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 2000-2001

Hand labor at $7.75per hour ($5.75 plus SS,unemployment insurance, and transportation, supervision and fringe benefits).
Yield- 20 Tons

OPERATION	Cost	Materials		Hand Labor		Cost
		Type	Cost	Hours	Dollars	Per acre
LAND PREPARATION						
Chisel 15"	24.75					24.75
Disc 2x	11.50					23.00
Landplane 2x	12.00					24.00
Border, cross check & break borders	17.75					17.75
Flood		Water 1 ac/ft	14.56	1	7.75	22.31
Disc 2x	11.50					23.00
Triplane 1x	11.00					11.00
Fertilize (double spread)	8.00	500 lb. 11-52-0	63.75			71.75
List 40" beds	13.50					13.50
TOTAL LAND PREPARATION						**231.06**
GROWING PERIOD						
Power mulch	23.00					23.00
Precision plant	NC	Seed	N/C	1	7.75	7.75
Herbicide 1x	12.00	Prefar	24.00			36.00
Sprinkler irrigate	155.00					155.00
Cultivate 2x	13.00					26.00
Spike 2x	9.75					19.50
Fertilize & furrow out 2x	13.50	250 lb. N @ .35	87.50			114.50
Weed control 2x	12.00	Buctril, Goal, Prism	21.00			45.00
Hand weed				9	69.75	69.75
Irrigate 12x		Water 4 1/2 ac/ft	65.52	13	100.75	166.27
Insect control 3x	9.50	Insecticides	60.00			88.50
Disease control 4x	9.50	Fungicides	105.00			143.00
TOTAL GROWING PERIOD						**894.27**
GROWING PERIOD & LAND PREPARATION COSTS						1125.33
Land Rent (net acres)						200.00
Cash Overhead-----	13 % of preharvest costs & land rent					172.29
TOTAL PREHARVEST COSTS						**1497.62**

HARVEST COSTS None -- contracted @~ 90.00 / ton return to grower

PROJECTED PROFIT OR LOSS PER ACRE

		Tons/acre					Break-even
		14.00	16.00	18.00	20.00	22.00	tons/acre
$/Ton	92.00	-210	-26	158	342	526	16.28