Cooperative Extension
UNIVERSITY OF CALIFORNIA

BN-SJ-92

COUNTY OF SAN JOAQUIN
420 South Wilson Way
Stockton, California 95205
Telephone (209) 468-2085

1992 CULTURE AND COSTS TO PRODUCE GARBANZO BEANS

Mick Canevari
San Joaquin County

Soil Requirements - Fertile, well-drained soils, light to medium texture. Heavy clay soils need to be carefully managed for irrigation and winter rainfall drainage.

Planting Dates - November to February, depending on location and soil type under winter conditions. This time frame also avoids aphid flights that vector viruses.

Harvest Dates - Late June to mid July. Harvesting has been very successful with a standard grain combine and direct harvest of dry standing bean plants. Cutting, windrowing and harvesting as used with other dry bean types has also worked well. This method can facilitate an earlier harvest. Bean plants must be dry before cutting or darkening and discoloration of seed will occur.

Varieties - UC 27 is the variety we most commonly use in the central valley. UC 15 is a sister line to 27 and designated as a more coastal variety. Both varieties are public varieties developed by University of California Davis.

Seeding Rate - 60-80 lb/acre depending on seed size. Three to four plants per foot of bed is an ideal population. Plant seeds 1-2" deep into pre-irrigated moist soil. Seeds should be treated with fungicide, and apply an inoculant of rhizobium bacteria at planting. This will insure proper nitrogen fixation of nodules during the winter and spring months.

Fertilizer - The current practice is to apply only a starter fertilizer before planting. Example: 30 gal. 4-10-10 or comparable mix. Phosphorus is particularly important to a winter growing legume. The addition of nitrogen fertilizers have not been used since it is believed that enough is produced by the plant itself when seed is treated with rhysobia bacteria at planting. Further research needs to be done in this area.

Weed Control - Weeds can be a serious problem to this crop. Garbanzos grow very slowly during the winter months thus making them a poor competitor to winter weeds. Current herbicides registered for use include: Treflan, Prowl, Dual and Lasso applied preplant incorporated. Poast is also registered for postemergence grass control if needed. Goal herbicide applied pre-emergence is pending registration in California but is not currently registered for use. It is strongly suggested to avoid planting garbanzo in a field heavily populated with winter weeds such as mustard, radish, cheeseweed, and sowthistle. These weeds and others are not controlled by the herbicides available. Spring germination of nightshade sp. can be a serious problem and must be managed with cultivations or hand hoeing.

Insects - Insects have not been a serious problem to date. However, one should be aware of aphid flights in the spring since they are vectors of virus. Currently there are no threshold levels established for treatment of aphid. Pod boring insects, such as worms, should be monitored during pod filling.

Irrigation - A preplant irrigation is recommended in early fall to fill the soil profile. Garbanzo beans are deep rooted and need deep soil moisture for maximum root extension and development. One irrigation in the spring may be required if winter rainfall is insufficient. In very light sandy soils an irrigation can be expected. Caution should be taken not to flood beans since injury or plant death may occur. If an irrigation is required it is best to apply water early at the pre-blossom or early blossom stage of growth.

Disease - We have only limited experience for garbanzo culture in the central valley. The diseases known to be a potential problem include: pythium, or damping off disease at germination, and white mold (*sclerotinia sclerotiorum*) during prolonged wet and humid conditions in the spring. In the 1991-92 growing season one field in the delta area was severely injured due to ashy stem blight (*macrophomina phaseoli*). This disease is most serious during periods of high moisture and high temperatures when irrigating.

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1992 SAMPLE COSTS TO PRODUCE GARBANZO BEANS IN SAN JOAQUIN COUNTY

Operation	Hours per Acre	Cash and Labor Cost per Acre				
		Labor	Fuel and Repairs	Materials Kind and Quantity	Cost	Total
Cultural Costs						
Plow (or chisel), 1x	0.33	$1.81	$ 5.28			$ 7.09
Disc, 2x	0.26	1.43	4.16			5.59
Triplane, 2x	0.24	1.32	3.84			5.16
Fertilize (preplant)				30 gal 4-10-10	$25.00	25.00
& custom (list)				Applic. & list beds	20.00	20.00
Incorp. herbicide WD rolling cultivate, 2x	0.32	1.76	3.68			5.44
				3 pt Prowl	15.50	15.50
Ditch prep., 2x	0.16	.80	2.56			3.36
Irrigate (pre) 2x	2.3	10.50		1.0 ft/A @ $20.00	20.00	30.50
Plant	0.25	1.38	5.75	Seed 80# @ .53 lb	42.40	49.53
				Inoculant 6 lb/A @ 1.25	7.50	7.50
Cultivate, WD 1x	0.33	1.82	3.80			5.62
Misc. downtime, etc.	0.50	2.75				2.75
TOTAL CULTURAL COSTS		**$23.57**	**$29.07**		**$130.40**	**$183.04**
Harvest Costs						
Thresh, custom;				$2.00/cwt or		
hauling, custom				$40.00 acre minimum	40.00	40.00
Warehousing, tenant's share - 75%=13.5 cwt cleaning and sacking (clean beans), storage, fumigate, handling				$4.00/cwt	54.00	54.00
TOTAL HARVEST COSTS					**$94.00**	**$94.00**
Cash Overhead						
Misc., office, etc.						$23.20
Taxes on equipment						2.80
Rent		(20% of uncleaned crop, delivered, 4.5 cwt @ $ 35.00)				157.50
TOTAL CASH OVERHEAD						**$183.50**
TOTAL CASH COST						**$460.54**

1992 SAMPLE COSTS TO PRODUCE GARBANZO BEANS IN SAN JOAQUIN COUNTY
(continued)

Operation	Per Acre			Total
Management (add, if wanted)	5% of 18 cwt @ $35		$31.50	
Investment				
		Annual Cost		
	Per Acre	Depreciation	Interest 12%	
Irrigation system	$1.50	$.22	$.09	
3 tractors	130.00	10.83	7.80	
Buildings	10.00	.50	.60	
Equipment	160.00	16.00	9.60	
Total	$301.50	$27.55	$18.09	$45.64
TOTAL COST PER ACRE				**$506.18**

COST PER CWT @ 22 CWT YIELD (CLEANED)	$25.13
COST PER CWT @ 18 CWT YIELD (CLEANED)	28.13
COST PER CWT @ 14 CWT YIELD (CLEANED)	32.77

Cost based on 18 cwt/Yield

Labor: Irrigator $4.50/hr

Tractor $5.50/hr

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