
University of California, Davis
Department of Agricultural and Resource Economics
Sample Costs to Produce Blackeye Beans in the San Joaquin Valley-South, 2026



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UC DAVIS DEPARTMENT OF AGRICULTURAL AND RESOURCE ECONOMICS
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INTRODUCTION

Sample costs to produce blackeye beans (*Vigna unguiculata*) in the southern San Joaquin Valley are shown in this study. The study is intended as a guide only and can be used to make production decisions, determine potential returns, prepare budgets, and evaluate production loans. The practices described here are based on the production practices considered typical for this crop and region but will not apply to every farm situation. Sample costs for labor, materials, equipment, and custom services are based on current figures. A “*Your Costs*” column in Tables 1 and 2 is provided to enter your costs.

For an explanation of calculations used in the study, refer to the section titled Assumptions. For more information, contact Jeremy Murdock or Paul Long, University of California Agriculture and Natural Resources, Department of Agricultural and Resource Economics, at 530-752-4651 or pmlong@ucdavis.edu.

Sample Cost of Production studies are available for many commodities. Current and archived studies can be downloaded from the department website <http://coststudies.ucdavis.edu>.

Costs and Returns Study Program/Acknowledgements. A cost and returns study is a compilation of specific agricultural crop data collected from the region where the study is based. The authors thank the farmer cooperators and industry representatives who provided information, assistance, and expert advice. *The University of California, Division of Agriculture and Natural Resources (UCANR) is an equal opportunity employer.*

ASSUMPTIONS

The assumptions refer to Tables 1 to 7 and pertain to sample costs to produce double-cropped blackeye beans in the southern San Joaquin Valley. The cultural practices described represent production operations and materials considered typical on a well-managed farm in the region. Costs, materials, and practices in this study will not apply to all farms. Timing of and types of cultural practices will vary among growers within the region and from season to season due to variables such as weather, soil, and insect and disease pressure. The study does not represent a specific farm and is intended as a guide only. **The use of trade names and cultural practices in this report does not constitute an endorsement or recommendation by the University of California, nor is any criticism implied by omission of other related products or cultural practices.**

Farm. The hypothetical field and row-crop farm consists of 1,000 non-contiguous acres on which 80 acres of owned land is planted to blackeye beans. Other crops grown on the acres in rotation with blackeye beans include small grains, winter forage, alfalfa hay, cotton, and field corn. Roads, equipment yard, irrigation system, and farmstead are on 20 acres.

Production Cultural Practices and Material Inputs

Land Preparation. Primary tillage, which includes chiseling, disking, land leveling (laser and triplane), and finally listing and shaping of beds, is done in the early to late spring before June. The fields are laser leveled once every ten years to ensure efficient irrigation, and one-tenth of the cost is charged to the current bean crop. The land is chiseled in two directions to open the soil profile and break up any hardpan. The field is disced two times with an offset stubble disc to incorporate wheat straw from the previous crop and to loosen the soil surface, then leveled in two passes with a triplane. After bed listing, a light bed finishing disc is pulled along the beds to incorporate pre-plant herbicide just prior to bed shaping.

Planting. In mid-June following winter forage harvest, the CB46 variety is planted on 38-inch beds into moisture with a 6-row planter at 32 pounds of seed per acre. The purchased seed comes pre-treated with fungicides to protect against seedling diseases. This double-crop planting needs about 100 to 130 days to mature from planting to cutting.

Fertilization. Rhizobium, a nitrogen-fixing bacterium, is added to the seed at planting. No other fertilizer is applied and is seldom required.

Irrigation. The field is furrow irrigated. An irrigation is made in late May or early June prior to planting (pre-irrigation). The next irrigation is made two to four weeks after planting. In this study, the first post-plant irrigation is in early to mid-July followed by irrigations at 10-day intervals beginning late July and continuing until the last irrigation in September. The grower can use well or surface water or a combination of them. Well water is used at a cost of \$20.83 per acre-inch or \$250 per acre-foot. A total of 30 acre-inches per year, including pre-irrigation, is applied to the field. To facilitate cultural operations, drainage ditches at the end of the field are opened and closed, as necessary.

Pest Management. The pesticides and rates mentioned in this cost study are listed in *UC Integrated Pest Management Guidelines, Dry Beans*. For information on other pesticides available, pest identification, monitoring, and management, visit the UC IPM website at <https://ipm.ucanr.edu/agriculture/dry-beans>. For information on pesticide use permits, contact the local county agricultural commissioner's office. **Pesticides mentioned in this study are used to calculate rates and costs. Although the pesticides mentioned are commonly used by growers, many other pesticides are available. Check with your Pest Control Adviser (PCA), field crops Farm Advisor, and/or the UC IPM website for current recommendations.** Adjuvants are recommended for use with

many pesticides for effective control, but adjuvants, their costs, and their availability are not included in this study. Pesticide costs may vary by location, brand, and grower volume. Pesticide costs in this study are taken from a single dealer and shown as full retail.

Weeds. Prior to planting as a part of land preparation, Dual II Magnum and Treflan are applied with a boom attached to the front of a finish disc on shaped beds to complete the herbicide incorporation. The field is cultivated with a 6-row cultivator before and after the first irrigation, once in late June and once in July. After the first irrigation, before the crop canopy closes, Arrow 2EC is applied by ground to control newly emerged grass weeds.

Insects. Lygus bugs (*Lygus hesperus*) are the main insect pest in blackeyes. The lygus bugs can reduce yields and affect maturity and seed quality. To control lygus, Bifenture EC is sprayed by air (helicopter) in late July at early bloom, and in August with Orthene 97 (CA). In some years, spider mites may need to be treated in some fields, but such treatment is not shown as a cost in this study.

Diseases. Seeds are treated at the warehouse with Dynasty, Apron XL, and Cruiser fungicides to protect against seedling diseases, and dye is added to warn about the presence of pesticides. This treatment is included in the seed cost. Fusarium wilt (*Fusarium oxysporum f. sp. tracheiphilum*) is a major disease of blackeyes and is controlled by planting resistant varieties.

Harvest. The crop is custom cut in early to mid-October and custom threshed (harvested) 18 days later. The beans are cut below ground with bean knives attached to the belly of the tractor and then windrowed. Six rows are cut in one pass, turning each pair of rows into each other. A merger is later used to bring the cut plants from all six rows into one windrow. After two to three weeks of drying, when the plants are dry and the beans are around 12% moisture, the beans are threshed with a bean harvester, dumped into bulk trucks, and delivered to the warehouse. Custom harvest costs are charged on field weight and/or per acre. Cutting and windrowing costs \$60 per acre. Threshing costs \$25 per acre plus \$3 per hundredweight (cwt). Hauling costs are estimated at \$0.65/cwt.

Yield. Field weight includes trash, dirt, stones, and immature and broken beans. The field weight in this study is 35 cwt per acre. After cleaning, assuming a 9% cleanout, the net yield is 32 cwt/acre (rounded) of U.S. No. 1 beans. These yields apply to the Southern San Joaquin Valley growing area and are higher than statewide average yields from USDA, NASS. The 2025 ANR publication Blackeye Bean Production in California, second edition, indicates yields about 30% lower, which may apply in the Northern San Joaquin Valley and the Sacramento Valley.

Warehouse. The warehouse charges \$6.12/cwt field weight to clean the beans, \$1.70/cwt to fumigate, and \$0.04/cwt to grade. Lot size varies but is considered to be a set of doubles (semi-truck and trailer pulling a second trailer) or 6 bobtails (short semi-trucks). A set of doubles is calculated to be 500 cwt, and the grading cost in this study was converted to cost per hundredweight. After cleaning, charges are based on clean weight. Insurance costs are paid by the grower until beans are cleaned by the warehouse. Warehouse charge for insurance is \$0.60/cwt. Storage for up to one-year costs \$0.95/cwt, and bagging is paid by the buyer, but most purchases are bulk.

Returns. Based on 2025 markets for U.S. No. 1 grade blackeyes, an estimated price of \$55/cwt clean seed is used to calculate returns. Table 4 shows a range of yields over a range of returns for No. 1 beans. Visual quality is important in blackeye marketing, and sales are based on USDA grades. See *United States Standards for Beans*, a publication of the U.S. Department of Agriculture, Federal Grain Inspection Service.

Assessments/Fees. The California Dry Bean Advisory Board (CDBAB) assesses growers \$0.37/cwt, and the Blackeye Council assesses \$0.09 per clean hundredweight. Curly top virus assessment is \$0.0088/cwt. The

CDBAB, Council, and Curly Top virus assessments provide funds for marketing and research.

Pickup/ATV. Costs for a 1/2-ton pickup and ATV are included in the study. The pickup and ATV may be used by the irrigator, field foreman, or the grower. The pickup travels 9,000 miles per year (1,500 miles for the beans) and the ATV 3,000 miles per year (500 miles for the beans). The miles are not based on any actual data, but the assumptions are used to calculate a vehicle cost for this study.

Labor, Equipment, and Interest

Labor. Hourly wages for workers are \$22.00 for machine operators and \$18.00 per hour for non-machine labor. Adding 46% for the employer's share of federal and state payroll taxes, insurance, and other benefits gives the labor rates shown of \$32.12 and \$26.28 per hour for machine labor and non-machine labor, respectively. The cost is based on the average industry rate as of May 2025. Labor costs for operations involving machinery is 20% higher than the operation time given in Table 1 to account for the extra labor involved in equipment setup, moving, maintenance, work breaks, and field repair.

Wages for management are not included as a cash cost. Any return above total costs is considered a return to management and risk. However, growers wanting to account for management may wish to add an expense in the "Your Cost" column. The manager makes all production decisions, including cultural practices, pest management recommendations, and labor.

Equipment Operating Costs. Repair costs are based on purchase price, annual hours of use, total hours of life, and repair coefficients formulated by the American Society of Agricultural and Biological Engineers (ASABE). Fuel and lubrication costs are also determined by ASABE equations based on maximum power takeoff (PTO) horsepower and fuel type. Prices for on-farm delivery of diesel and gasoline are \$4.10 and \$3.70 per gallon, respectively. The costs are based on the August 2025 monthly data from the Energy Information Administration (EIA). The cost includes a 13.0% sales tax on diesel fuel and 2.25% sales tax on gasoline. Included in the cost per gallon is federal and state excise tax, \$0.36 on diesel fuel and \$0.42 on gasoline, which are refundable for on-farm use when filing for income tax. Federal highway tax and local district sales taxes are not included. The fuel, lube, and repair cost per acre for each operation in Table 1 is determined by multiplying the total hourly operating cost in Table 6 for each piece of equipment used for the selected operation by the hours per acre. Tractor time is 10% higher than implement time for a given operation to account for setup, travel, and downtime.

Interest on Operating Capital. Interest on operating capital is based on cash operating costs and is calculated monthly until harvest at a nominal rate of 8.25% per year. A nominal interest rate is the typical market cost of borrowed funds. The interest cost of post-harvest operations is discounted back to the last harvest month using a negative interest charge. The rate will vary depending upon numerous factors, but the rate in this study is considered a typical lending rate by a farm lending agency as of May 2025.

Risk. The risks associated with crop production should not be underestimated. While this study makes every effort to model a production system based on typical, real-world practices, it cannot fully represent financial, agronomic, and market risks, which affect profitability and economic viability of agricultural production. Moreover, Table 4 reflects a ranging analysis of returns based on various assumptions which are hypothetical in nature. *It is important to realize that actual results may differ from the returns contained in this study.* Any returns above total costs are considered returns on risk and investment to farm management (or farm owners).

Cash Overhead

Cash overhead consists of various cash expenses paid out during the year that are assigned to the whole farm, not to a particular operation. The field in this study is double cropped; therefore, approximately one-half of the overhead costs are allocated to the other crop.

Property Taxes. Counties charge a base property tax rate of 1% on the assessed value of the property. In some counties, special assessment districts exist and charge additional taxes on property, including equipment, buildings, and improvements. For this study, county taxes are calculated as 0.50% of the average value of the property. Average value equals new cost-plus salvage value divided by 2 on a per-acre basis.

The Williamson Act. The Williamson Act is a California Land Conservation Act that has helped preserve agricultural and open space lands since 1965. Local governments and landowners enter into voluntary contracts to restrict enrolled lands to agricultural and open space uses in exchange for property tax reductions. The impact of the Williamson Act (<https://www.conservation.ca.gov/dlrp/wa>) on property taxes will vary from year to year and property to property.

Insurance. Insurance for farm investments varies depending on the assets included and the amount of coverage.

Property Insurance. This provides coverage for property loss and is charged at 0.843% of the average value of the assets over their useful life.

Liability insurance. A standard farm liability insurance policy will help cover the expenses for which an employer becomes legally obligated to pay for bodily injury claims on the property and damages to another person's property as a result of a covered accident. Common liability expenses covered under the policy include attorney fees and court costs, medical expenses for people injured on the property, and injury or damage to another's property. In this study, liability insurance costs \$1,623 per year for the entire farm.

Crop Insurance. This is available to blackeye bean growers for any unavoidable loss of production, damage, or inferior quality resulting from adverse weather conditions, such as cool, wet weather, freezing, frost, hail, rain, wind, and damage from birds, drought, earthquakes, and fire. Coverage levels are from 50-85% of the approved average yield as established by verifiable production records from the field. A substantial number of growers purchase crop insurance in this region. Crop insurance is not mandatory. With a harvest window in September, it may not be necessary to purchase crop insurance, but growers who are harvesting in October may purchase it due to uncertain weather concerns. In this study, crop insurance is not included. A blackeye bean insurance program is administered by the Risk Management Agency of the USDA (<https://www.rma.usda.gov/policy-procedure/bulletins-memos/product-management-bulletin/pm-26-001-2025-crop-year-dry-bean-dry>)

Office Expenses. Office and business expenses for 1,000 acres are estimated at \$75 per producing acre. In this study, office expenses are \$37.50 per acre, half of the annual acre cost. These expenses include office supplies, telephones, computers, internet access, accounting, and miscellaneous cash overhead expenses. Costs are estimated and not based on any specific data.

Regulatory Compliance and Administrative Costs. Compliance and administrative costs are estimated to be \$12.50 per acre. This includes expenses such as managing paperwork for regulatory compliance of water quality programs such as waste discharge requirements. This would also include farm evaluation and nitrogen management plan reporting, as well as miscellaneous administrative costs that accompany the compliance paperwork. These tasks can be performed by the grower or are contracted to a consultant.

Investment Repairs. Annual repairs on investments or capital recovery items that require maintenance are calculated as 2% of the purchase price.

Non-Cash Overhead

Non-Cash overhead is calculated as the capital recovery cost for equipment and other farm investments. Because the field is double cropped, approximately one-half of the Capital Recovery costs are allocated to the other crop.

Capital Recovery Costs. Capital recovery cost is the annual depreciation and interest costs for a capital investment. It is the amount of money required each year to recover the difference between the purchase price and salvage value (unrecovered capital). It is equivalent to the annual payment on a loan for the investment with the down payment equal to the discounted salvage value. This is a more complex method of calculating ownership costs than straight-line depreciation and opportunity costs, but more accurately represents the annual costs of ownership because it takes the time value of money into account (Boehlje and Eidman). The formula for the calculation of the annual capital recovery costs is $((\text{Purchase Price} - \text{Salvage Value}) \times (\text{Capital Recovery Factor})) + (\text{Salvage Value} \times \text{Interest Rate})$.

Salvage Value. Salvage value is an estimate of the remaining value of an investment at the end of its useful life. For farm machinery (tractors and implements), the remaining value is a percentage of the current cost of the investment (Boehlje and Eidman). The percent remaining value is calculated from equations developed by the American Society of Agricultural and Biological Engineers (ASABE) based on equipment type and years of life. The life in years is estimated by dividing the wear-out life, as given by ASABE, by the annual hours of use in the operation. For other investments including irrigation systems, buildings, and miscellaneous equipment, the value at the end of its useful life is zero. The salvage value for land is the purchase price because land does not depreciate. The purchase price and salvage value for equipment and investments are shown in Table 5.

Capital Recovery Factor. The capital recovery factor is the amortization factor or annual payment whose present value at compound interest is 1. The amortization factor is a table value that corresponds to the interest rate used and the life of the machine.

Interest Rate. An interest rate of 7.5% is used to calculate capital recovery. The rate will vary depending upon loan amount and other lending agency conditions but is the basic suggested rate by a farm lending agency as of May 2025.

Irrigation system. Water cost varies across the San Joaquin Valley depending on the irrigation district and well characteristics. The farm has three wells, and each is 600 feet deep. Each well has a 150-horsepower electric pump that pumps from a 215-foot depth. The delivery system is an underground cement pipeline with alfalfa valves. A canal also runs through the ranch and is connected to the delivery system by gravity feed. The cost of the irrigation system includes refurbishment of the wells and the value of the delivery system. The cost of \$200 per acre is an estimate that is not based on any irrigation company data.

Land. The price of the land includes an already developed well and irrigation system. Land suitable for bean production will vary widely in value across the region. Prices range from \$15,000 to \$30,000 per acre. For the purpose of this study, we value the land at \$25,000 per acre. (2025 Trends & Leases).

Building. The metal buildings are on a cement slab and comprise 2,400 square feet.

Storage Shed. A small shed is used to store pesticides and is posted with warning signs and locked.

Tools. This includes shop tools, hand tools, and miscellaneous field tools. The value of the tools is estimated and not taken from specific data.

Fuel Tanks. Two fuel tanks using gravity feed are on metal stands. One tank is 500 gallons, and the other is 1,000 gallons. The tanks are set up in a cement containment pad that meets federal, state, and county regulations. Also, a portable 500-gallon tank will be used for portable fueling.

Equipment. Farm equipment is purchased new or used, but the study shows the current purchase price for new equipment. The new purchase price is adjusted to 60% to indicate a mix of new and used equipment. Annual ownership costs for equipment and other investments are shown in Table 5. Equipment costs are composed of three parts: non-cash overhead, cash overhead, and operating costs. Both overhead factors have been discussed in previous sections. The operating costs consist of repairs, fuel, and lubrication and are discussed under operating costs.

Table Values. Due to rounding, the totals may be slightly different from the sum of the components.

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SAN JOAQUIN VALLEY-SOUTH 2026

Table 1. COSTS PER ACRE TO PRODUCE BLACK EYE BEANS (double-cropped)

Operation	Operation	Cash and Labor Costs per Acre						Total Cost	Your Cost
	Time (Hrs/A)	Labor Cost	Fuel	Lube & Repairs	Material Cost	Custom/ Rent			
Cultural:									
Laser Level (every 10 years)	0.00	0	0	0	0	18	18		
Chisel 2X	0.24	9	11	4	0	0	24		
Stubble Disc 2X	0.27	10	12	5	0	0	27		
Triplane 2X	0.30	12	13	5	0	0	30		
List Beds (38" Beds)	0.10	4	5	1	0	0	10		
Finish Disc/Apply and Incorporate Herbicide	0.08	3	4	1	18	40	66		
Make Tail-Ditch	0.06	2	2	1	0	0	5		
Pre-irrigate	0.00	6	0	0	125	0	130		
Close Tail-Ditch	0.06	2	2	1	0	0	5		
Shape Beds	0.25	10	11	3	0	0	24		
Plant Bean (Seed + Rhizobium)	0.12	4	5	2	27	0	39		
Cultivate 2X	0.17	6	5	2	0	0	13		
Irrigate	0.00	32	0	0	500	0	531		
Apply Herbicide (Arrow 2 EC)	0.00	0	0	0	11	20	31		
Insect-Lygus (Bifenture EC)	0.00	0	0	0	2	30	32		
Insect-Lygus (Orthene 97)	0.00	0	0	0	21	30	51		
Pickup Truck Use	0.65	25	9	3	0	0	37		
ATV Use	0.65	25	1	1	0	0	27		
TOTAL CULTURAL COSTS									
	2.95	151	79	28	705	138	1,101		
Harvest:									
Cut & Windrow Beans	0.00	0	0	0	0	60	60		
Thresh Beans	0.00	0	0	0	0	130	130		
Haul Beans to Warehouse	0.00	0	0	0	0	23	23		
Clean, Fumigate, Grade	0.00	0	0	0	0	275	275		
Insurance & Storage	0.00	0	0	0	0	50	50		
Assessments	0.00	0	0	0	15	0	15		
TOTAL HARVEST COSTS									
	0.00	0	0	0	15	537	552		
Interest on Operating Capital at 8.25%								18	
TOTAL OPERATING COSTS/ACRE									
	3	151	79	28	720	675	1,672		

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SAN JOAQUIN VALLEY-SOUTH 2026

Table 1. CONTINUED COSTS PER ACRE TO PRODUCE BLACK EYE BEANS (double-cropped)

Operation	Operation	Cash and Labor Costs per Acre					Total Cost	Your Cost
	Time (Hrs/A)	Labor Cost	Fuel	Lube & Repairs	Material Cost	Custom/ Rent		
CASH OVERHEAD:								
Liability Insurance							1	
Office Expenses							38	
Regulatory Compliance							13	
Well Refurbishment and Maintenance							100	
Property Taxes							125	
Property Insurance							0	
Investment Repairs							2	
TOTAL CASH OVERHEAD COSTS/ACRE							278	
TOTAL CASH COSTS/ACRE							1,951	
NON-CASH OVERHEAD:		Per Producing Acre	Annual Cost Capital Recovery					
Building (2400sqft)		87	9				9	
Fuel Tanks/Above ground		4	0				0	
Land- 80 acres		25,000	1,875				1,875	
Shop Tools		15	2				2	
Storage Building (chemicals)		8	1				1	
Equipment		364	45				45	
TOTAL NON-CASH OVERHEAD COSTS		25,478	1,931				1,931	
TOTAL COSTS/ACRE							3,882	

AGRICULTURAL AND RESOURCE ECONOMICS, UC DAVIS
SAN JOAQUIN VALLEY-SOUTH 2026

Table 2. COSTS AND RETURNS PER ACRE TO PRODUCE BLACKEYE BEANS (double-cropped)

	Quantity/ Acre	Unit	Price or Cost/Unit	Value or Cost/Acre	Your Cost
GROSS RETURNS					
Blackeye #1	32	cwt	55.00	1,760	
TOTAL GROSS RETURNS	32	cwt		1,760	
OPERATING COSTS					
Custom:				675	
Laser Level	0.10	Acre	180.00	18	
Finish Disc & Apply Herbicide	1.00	Acre	40.00	40	
Ground Apply Herbicide	1.00	Acre	20.00	20	
Air Apply Helicopter 5gal	2.00	Acre	30.00	60	
Cut & Rake beans	1.00	Acre	60.00	60	
Thresh-Basic Charge	1.00	Acre	25.00	25	
Thresh-Weight Charge	35.00	Cwt	3.00	105	
Haul Beans	35.00	Cwt	0.65	23	
Clean Beans	35.00	Cwt	6.12	214	
Fumigate Beans	35.00	Cwt	1.70	60	
Grade Beans/lot	35.00	Cwt	0.04	1	
Insurance	32.00	Cwt	0.60	19	
Storage	32.00	Cwt	0.95	30	
Seed:				27	
CB46 Certified Seed	32.00	Lb	0.85	27	
Herbicide:				30	
Dual 2 Magnum	1.50	Pint	9.38	14	
Treflan	1.00	Pint	4.31	4	
Arrow 2 EC	1.00	Pint	11.25	11	
Insecticide:				23	
Bifenture	6.40	floz	0.39	2	
Orthene 97	16.00	Oz	1.30	21	
Water:				625	
Water-Pumped	30.00	acin	20.83	625	
Assessment:				15	
CA Dry Bean Board	32.00	Cwt	0.37	12	
Curly Top Virus	32.00	Cwt	0.01	0	
Blackeye Council	32.00	Cwt	0.09	3	
Labor				151	
Equipment Operator Labor	3.55	hrs	32.12	114	
Non-Machine Labor	1.41	hrs	26.28	37	
Machinery				107	
Fuel-Gas	2.77	gal	3.70	10	
Fuel-Diesel	16.83	gal	4.10	69	
Lube				12	
Machinery Repair				16	
Interest on Operating Capital @ 8.25%				18	
OPERATING COSTS/ACRE				1,672	
TOTAL OPERATING COSTS/CW				52	
NET RETURNS ABOVE OPERATING COSTS				88	

AGRICULTURAL AND RESOURCE ECONOMICS, UC DAVIS
SAN JOAQUIN VALLEY-SOUTH 2026

Table 2. CONTINUED COSTS AND RETURNS PER ACRE TO PRODUCE BLACK EYE BEANS (double-cropped)

	Quantity/ Acre	Unit	Price or Cost/Unit	Value or Cost/Acre	Your Cost
CASH OVERHEAD COSTS					
Liability Insurance				1	
Office Expenses				38	
Regulatory Compliance				13	
Well Refurbishment and Maintenance				100	
Property Taxes				125	
Property Insurance				0	
Investment Repairs				2	
TOTAL CASH OVERHEAD COSTS/ACRE				278	
TOTAL CASH OVERHEAD COSTS/CWT				9	
TOTAL CASH COSTS/ACRE				1,951	
TOTAL CASH COSTS/CWT				61	
NET RETURNS ABOVE CASH COSTS				-191	
NON-CASH OVERHEAD COSTS (Capital Recovery)					
Building (2400 sqft)				9	
Fuel Tanks/Above ground				0	
Land (80 acres)				1,875	
Shop Tools				2	
Storage Building (chemicals)				1	
Equipment				45	
TOTAL NON-CASH OVERHEAD COSTS/ACRE				1,931	
TOTAL NON-CASH OVERHEAD COSTS/CWT				60	
TOTAL COST/ACRE				3,882	
TOTAL COST/CWT				121	
NET RETURNS ABOVE TOTAL COST				-2,122	

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Table 3. MONTHLY COSTS PER ACRE TO PRODUCE BLACKEYE BEANS (double-cropped)

	MAY 25	JUN 25	JUL 25	AUG 25	SEP 25	OCT 25	Total
Cultural:							
Laser Level (every 10 years)	18						18
Chisel 2X	24						24
Stubble Disc 2X	27						27
Triplane 2X	30						30
List Beds (38" Beds)	10						10
Finish Disc/Apply and Incorporate Herbicide	66						66
Make Tail-Ditch		2	2	2			5
Pre-irrigate		130					130
Close Tail-Ditch		2	2		2		5
Shape Beds		24					24
Plant Bean (Seed + Rhizobium)		39					39
Cultivate 2X		6	6				13
Irrigate			177	177	177		531
Apply Herbicide (Arrow 2 EC)			31				31
Insect-Lygus (Bifenture)			32				32
Insect-Lygus (Orthene 97)				51			51
Pickup Truck Use	6	6	6	6	6	6	37
ATV Use	4	4	4	4	4	4	27
TOTAL CULTURAL COSTS	176	224	261	240	189	11	1,101
Harvest:							
Cut & Windrow Beans						60	60
Thresh Beans						130	130
Haul Beans to Warehouse						23	23
Clean, Fumigate, Grade						275	275
Insurance & Storage						50	50
Assessments						15	15
TOTAL HARVEST COSTS	0	0	0	0	0	552	552
Interest on Operating Capital @ 8.25%	1	3	5	6	7	-4	18
TOTAL OPERATING COSTS/ACRE	177	226	266	246	197	559	1,672
CASH OVERHEAD							
Liability Insurance		1					1
Office Expenses		38					38
Regulatory Compliance		13					13
Well Refurbishment and Maintenance		100					100
Property Taxes			63				125
Property Insurance			0				0
Investment Repairs	0	0	0	0	0	0	2
TOTAL CASH OVERHEAD COSTS	0	151	63	0	0	0	278
TOTAL CASH COSTS/ACRE	178	378	329	247	197	560	1,951

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Table 4. RANGING ANALYSIS- BLACKEYE BEANS (double-cropped)

COSTS PER ACRE AND PER CWT AT VARYING YIELDS TO PRODUCE BLACKEYE BEANS

	YIELD (cwt/acre)						
	20.00	24.00	28.00	32.00	36.00	40.00	44.00
OPERATING COSTS/ACRE:							
Cultural	1,101	1,101	1,101	1,101	1,101	1,101	1,101
Harvest	368	429	491	552	614	676	737
Interest on Operating Capital @ 8.25%	20	19	19	18	18	17	17
TOTAL OPERATING COSTS/ACRE	1,489	1,550	1,611	1,672	1,734	1,795	1,856
TOTAL OPERATING COSTS/CWT	74.45	64.58	57.55	52.26	48.15	44.86	42.18
CASH OVERHEAD COSTS/ACRE	278	278	278	278	278	278	278
TOTAL CASH COSTS/ACRE	1,767	1,828	1,890	1,951	2,012	2,073	2,134
TOTAL CASH COSTS/CWT	88.37	76.18	67.49	60.96	55.89	51.82	48.50
NON-CASH OVERHEAD COSTS/ACRE	1,931	1,931	1,931	1,931	1,931	1,931	1,931
TOTAL COSTS/ACRE	3,699	3,760	3,821	3,882	3,943	4,004	4,065
TOTAL COSTS/CWT	185.00	157.00	136.00	121.00	110.00	100.00	92.00

Net Return Per Acre Above Operating Costs for Blackeye Beans

PRICE (\$/cwt)	YIELD (cwt/acre)						
Blackeye #1	20.00	24.00	28.00	32.00	36.00	40.00	44.00
35.00	-789	-710	-631	-552	-474	-395	-316
45.00	-589	-470	-351	-232	-114	5	124
50.00	-489	-350	-211	-72	66	205	344
55.00	-389	-230	-71	88	246	405	564
60.00	-289	-110	69	248	426	605	784
65.00	-189	10	209	408	606	805	1,004
75.00	11	250	489	728	966	1,205	1,444

Net Return Per Acre Above Cash Costs for Blackeye Beans

PRICE (\$/cwt)	YIELD (cwt/acre)						
Blackeye #1	20.00	24.00	28.00	32.00	36.00	40.00	44.00
35.00	-1,067	-988	-910	-831	-752	-673	-594
45.00	-867	-748	-630	-511	-392	-273	-154
50.00	-767	-628	-490	-351	-212	-73	66
55.00	-667	-508	-350	-191	-32	127	286
60.00	-567	-388	-210	-31	148	327	506
65.00	-467	-268	-70	129	328	527	726
75.00	-267	-28	210	449	688	927	1,166

Net Return Per Acre Above Total Costs for Blackeye Beans

PRICE (\$/cwt)	YIELD (cwt/acre)						
Blackeye #1	20.00	24.00	28.00	32.00	36.00	40.00	44.00
35.00	-2,999	-2,920	-2,841	-2,762	-2,683	-2,604	-2,525
45.00	-2,799	-2,680	-2,561	-2,442	-2,323	-2,204	-2,085
50.00	-2,699	-2,560	-2,421	-2,282	-2,143	-2,004	-1,865
55.00	-2,599	-2,440	-2,281	-2,122	-1,963	-1,804	-1,645
60.00	-2,499	-2,320	-2,141	-1,962	-1,783	-1,604	-1,425
65.00	-2,399	-2,200	-2,001	-1,802	-1,603	-1,404	-1,205
75.00	-2,199	-1,960	-1,721	-1,482	-1,243	-1,004	-765

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Table 5. WHOLE FARM ANNUAL EQUIPMENT, INVESTMENT, AND BUSINESS OVERHEAD COSTS

ANNUAL EQUIPMENT COSTS

Yr	Description	Price	Yrs Life	Salvage Value	Capital Recovery	Cash Overhead		Total
						Insurance	Taxes	
25	110 hp 2wd Tractor	107,591	12	26,899	12,449	0	336	12,785
25	170 hp 4wd Tractor	164,469	12	41,119	19,030	0	514	19,544
25	Bed Shaper - 6 Row	13,292	15	1,276	1,457	0	36	1,493
25	Disc - Offset 21'	25,879	15	2,485	2,837	0	71	2,908
25	Disc - Stubble 16'	43,558	15	4,182	4,774	0	119	4,894
25	Ditcher - V	8,631	15	829	946	0	24	970
25	Rear Blade - 8'	4,388	18	292	444	0	12	456
25	Cultivator-10 Row	6,875	15	660	754	0	19	772
25	Lister - 6 Row	11,333	15	1,088	1,242	0	31	1,273
25	Planter - Air6Row	31,250	15	3,000	3,425	0	86	3,511
25	Pickup 1/2 Ton	42,500	5	19,047	7,225	0	154	7,379
25	Chisel 16'	25,500	15	2,448	2,795	0	70	2,865
25	ATV 4WD	9,350	6	3,855	1,460	0	33	1,493
25	Triplane 16'	28,200	10	4,987	3,756	0	83	3,839
TOTAL		522,816	-	112,168	62,594	0	1,587	64,182
60% of New Cost*		313,690	-	67,301	37,557	0	952	38,509

*Used to reflect a mix of new and used equipment

ANNUAL INVESTMENT COSTS

					<u>Cash Overhead</u>			
Description	Price	Yrs Life	Salvage Value	Capital Recovery	Insurance	Taxes	Repairs	Total
INVESTMENT								
Building (2400 sqft)	85,000	20	0	8,338	0	213	1,700	10,250
Fuel Tanks/Above ground	3,500	20	0	343	0	9	70	422
Land (80 acres)	2,000,000	30	2,000,000	150,000	0	10,000	0	160,000
Shop Tools	15,000	20	0	1,471	0	38	300	1,809
Storage Building (chemicals)	8,000	20	0	785	0	20	60	865
TOTAL INVESTMENT	2,111,500	-	2,000,000	160,937	0	10,279	2,130	173,346

ANNUAL BUSINESS OVERHEAD COSTS

Description	Units/ Farm	Unit	Price/ Unit	Total Cost
Liability Insurance	80	Acre	0.81	65
Office Expenses	80	Acre	37.50	3,000
Regulatory Compliance	80	Acre	12.50	1,000
Well Refurbishment and Maintenance	80	Acre	100.00	8,000

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Table 6. HOURLY EQUIPMENT COSTS

Yr.	Description	BLACKEYE BEANS	Total	Cash Overhead		Operating			Total Oper.	Total Costs/Hr.
		Hours Used	Hours Used	Capital Recovery	Insurance	Taxes	Lube & Repairs	Fuel		
25	110 hp 2wd Tractor	25	1000	7.47	0.00	0.20	8.58	26.17	34.75	42.42
25	170 hp 4wd Tractor	120	1333	8.57	0.00	0.23	10.13	40.45	50.58	59.38
25	Bed Shaper - 6 Row	20	133	6.57	0.00	0.16	2.49	0.00	2.49	9.23
25	Disc - Offset 21'	7	133	12.80	0.00	0.32	3.90	0.00	3.90	17.02
25	Disc - Stubble 16'	22	133	21.54	0.00	0.54	6.57	0.00	6.57	28.64
25	Ditcher - V	5	133	4.27	0.00	0.11	2.21	0.00	2.21	6.59
25	Rear Blade - 8'	5	166	1.60	0.00	0.04	0.63	0.00	0.63	2.28
25	Cultivator-10 Row	13	133	3.40	0.00	0.08	1.29	0.00	1.29	4.77
25	Lister - 6 Row	8	133	5.60	0.00	0.14	2.13	0.00	2.13	7.87
25	Planter - Air6Row	9	80	25.69	0.00	0.64	5.96	0.00	5.96	32.29
25	Pickup 1/2 Ton	52	285	15.21	0.00	0.32	4.82	13.88	18.70	34.23
25	Chisel 16'	19	133	12.61	0.00	0.32	5.13	0.00	5.13	18.06
25	ATV 4WD	52	333	2.63	0.00	0.06	0.96	1.85	2.81	5.50
25	Triplane 16'	24	300	7.51	0.00	0.17	4.26	0.00	4.26	11.94

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Table 7. OPERATIONS WITH EQUIPMENT & MATERIALS (double-cropped)

Operation	Operation Month	Tractor	Implement	Labor Type/ Material	Rate/ acre	Unit
Laser Level (every 10 yrs)	May			Laser Level	0.10	Acre
Chisel 2X	May	170 hp 4wd Tractor	Chisel 16'	Equipment Operator Labor	0.29	hour
Stubble Disc 2X	May	170 hp 4wd Tractor	Disc - Stubble 16'	Equipment Operator Labor	0.32	hour
Triplane 2X	May	170 hp 4wd Tractor	Triplane 16'	Equipment Operator Labor	0.36	hour
List Beds (38" Beds)	May	170 hp 4wd Tractor	Lister - 6 Row	Equipment Operator Labor	0.12	hour
Finish Disc/Apply Herbicide	May			Dual 2 Magnum	1.50	Pint
				Treflan	1.00	Pint
				Finish Disc & Apply Herbicide	1.00	Acre
Finish Disc/Incorporate	May	170 hp 4wd Tractor	Disc - Offset 21'	Equipment Operator Labor	0.10	hour
Make Tail-Ditch	June	110 hp 2wd Tractor	Ditcher - V	Equipment Operator Labor	0.02	hour
	July	110 hp 2wd Tractor	Ditcher - V	Equipment Operator Labor	0.02	hour
	Aug	110 hp 2wd Tractor	Ditcher - V	Equipment Operator Labor	0.02	hour
Pre-irrigate	June			Non-Machine Labor	0.21	hour
				Water-Pumped	6.00	acin
Close Tail-Ditch	June	110 hp 2wd Tractor	Rear Blade - 8'	Equipment Operator Labor	0.02	hour
	July	110 hp 2wd Tractor	Rear Blade - 8'	Equipment Operator Labor	0.02	hour
	Sept	110 hp 2wd Tractor	Rear Blade - 8'	Equipment Operator Labor	0.02	hour
Shape Beds	June	170 hp 4wd Tractor	Bed Shaper - 6 Row	Equipment Operator Labor	0.30	hour
Plant Bean	June	170 hp 4wd Tractor	Planter - Air6Row	Equipment Operator Labor	0.14	hour
				CB46 Certified Seed	32.00	Lb
Cultivate 2X	June	110 hp 2wd Tractor	Cultivator-10 Row	Equipment Operator Labor	0.10	hour
	July	110 hp 2wd Tractor	Cultivator-10 Row	Equipment Operator Labor	0.10	hour
Irrigate	July			Non-Machine Labor	0.20	hour
				Water-Pumped	4.00	acin
	July			Non-Machine Labor	0.20	hour
				Water-Pumped	4.00	acin
	Aug			Non-Machine Labor	0.20	hour
				Water-Pumped	4.00	acin
	Aug			Non-Machine Labor	0.20	hour
				Water-Pumped	4.00	acin
	Sept			Non-Machine Labor	0.20	hour
				Water-Pumped	4.00	acin
	Sept			Non-Machine Labor	0.20	hour
				Water-Pumped	4.00	acin
Apply Herbicide (Arr	July			Arrow 2 EC	1.00	Pint
				Ground Apply Herbicide	1.00	Acre
Insect-Lygus (Bifenture)	July			Bifenture	6.40	floz
				Air Apply Hel 5gal	1.00	Acre
Insect-Lygus (Orthene)	Aug			Orthene 97	16.00	Oz
				Air Apply Hel 5gal	1.00	Acre
Pickup Truck Use	Aug		Pickup 1/2 Ton	Equipment Operator Labor	0.78	hour
ATV Use	Aug		ATV 4WD	Equipment Operator Labor	0.78	hour
Cut & Windrow Beans	Oct			Cut & Rake beans	1.00	Acre
Thresh Beans	Oct			Thresh-Basic Charge	1.00	Acre
				Thresh-Weight Charge	35.00	Cwt
Haul Beans	Oct			Haul Beans	35.00	Cwt
Clean, Fumigate, Grade	Oct			Clean Beans	35.00	Cwt
				Fumigate Beans	35.00	Cwt
				Grade Beans/lot	35.00	Cwt
Insurance & Storage	Oct			Insurance	32.00	Cwt
				Storage	32.00	Cwt
Assessments	Oct			CA Dry Bean Board	32.00	Cwt
				Curly Top Virus	32.00	Cwt
				Blackeye Council	32.00	Cwt