

Items	Description	Unit	Qty	Materials	
				Rate	Amount
	2" x 3" x 24'-0" side rails (4 pieces)	BM	48	\$240	\$11,520
	2" x 3" x 21'-0" side rails (4 pieces)	BM	42	\$240	\$10,080
	2" x 3" x 3'-6" side rails (4 pieces)		50	\$240	\$12,000
	1" x 12" x 24'-0" floor board (6 pieces)	BM	144	\$240	\$34,560
	1" x 12" x 21'-0" floor board (6 pieces)	BM	126	\$240	\$30,240
	1" x 6" x 24'-0" tray sides (4 pieces)	BM	48	\$240	\$11,520
	1" X 6" X 21'-0" TRAY SIDE (4 pieces)	BM	42	\$240	\$10,080
	1" x 6" x 3'-6" tray side (8 pieces)	BM	14	\$240	\$3,360
	Subtotal				\$130,560
	Black Construction Plastic	Sq ft			\$4,000
	Supply and fix ½" diameter drain hose to tray	feet	5	\$180	\$900
	Loam	Tons	5		\$10,000
	Filter press	Tons	5		\$10,000
	Paddy shell	Bags	100	\$100	\$10,000
	Labour for loading paddy shell		4	\$6,000	\$24,000
	Total				\$38,900
4.0	Nails and Bolts				
	Head nails	2.5 inch	10	\$250	\$2,500
	Bolts		16	\$200	\$3,200
	Total				\$5,700
	Total cost of materials				\$336,220
	Labour cost from GS80,000				
	Grand Total				\$416,220

ECONOMICS OF PRODUCTION:

For simplicity, economics of production would be shown 1 in² under a typical shadehouse, i.e a component of a bed measuring 1m x 1m. Sweet pepper is best utilized as the main crop and lettuces as the intercrop. The spacing will allow for sweet pepper plants and lettuce. It should be noted that lettuce would be harvested three weeks after transplant.

- Production**
1. Head of Lettuce
 2. Sweet Pepper

Weight (kg)
 2 kg (4.4lbs)
 4.8 kg (10lbs)

Note:

(Three months production @ 1.2kg/plant)
 Three crops per year will yield 2004/m²
 Actual price per production is
 4.5" x 8.6" = 38.7"2 (allowance made for drains)
 Total Annual Production= 789kg

Selling Price:

Lettuce:
 Four (4) heads @ \$100/head = \$400
 Sweet Peppers:
 4.8kg (10 lbs) @ \$660/kg = \$3,168
 Total: \$3,568/m²

For three crops/year, the income would be \$10,704/m²
 Total income/year = 10,704 x 38.7 = \$414, 244

Note:

The cost could be recovered within one years of operationalizing the shadehouse



SHADED CULTIVATION GUIDE

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NATIONAL AGRICULTURAL RESEARCH AND EXTENSION INSTITUTE

“The benefit of shaded cultivation is twofold.....it ensures crop availability for market and it also helps to keep prices constant” Dr. Oudho Homenauth

INTRODUCTION:

Farmers from across the country have been turning to shaded cultivation as part of their efforts to combat climate change and practice climate smart agriculture. Crops grown under shaded cultivation are protected from harsh weather conditions and have minimal exposure to pest and diseases. In fact, shade house cultivation is of the farmer’s solution to the adverse effects of climate change.

ADVANTAGES OF SHADED CULTIVATION

1. Allows for year round production
2. Less manual labour required compared to open field cultivation
3. Reduced use of pesticides
4. Significant increase in yield/plant
5. Allows for intercropping, for example lettuce can be intercropped with tomatoes
6. Once properly constructed, a shadehouse can last for at least five years
7. Not labour intensive
8. Provides additional income to beneficiaries
9. Can incorporate sprinkler or drip irrigation
10. Allows for planting in raised boxes

TYPES OF SHADE HOUSES

There are different types and size of Shadehouses. The capped roof and the tunnel structures are recommended for Guyana. Size vary depending on the availability of space and costs involved. The use of shade not alone is recommended during the very dry periods. However, under heavy rainfall conditions, the net becomes too wet for good crop production.

Ideally, the shade plastic is recommended for year round production. The shade net could be placed on top of the plastic to reduce heat intensity during the dry periods. Alternatively, it could be placed under the plastic but allowed mobility especially when cloudy conditions prevail.

CROPS RECOMMENDED FOR CULTIVATION

A number of crops are recommended for cultivation under shaded cultivation.

These include;- Cauliflower, Broccoli, Kale, Beet, Celery, Parsley, Lettuce, PakChoi (poi), Tomato and Sweet Peppers.

COST OF CONSTRUCTION

The cost of constructing a typical shadehouse varies depending on the material used. The capital cost required for the construction of a 6.5m (18’) x 8.6m (24’) shadehouse is shown below. It should be noted that hardwood would be utilized in this structure. Once properly constructed, the facility can be utilized for at least five years with minimal alternatives.

CAPITAL INVESTMENT REQUIRED FOR THE CONSTRUCTION OF 18FT X 24FT SHADE HOUSE.

Items	Description	Unit	Qty	Materials	
				Rate	Amount
1	Building of Frame				
1.1	Rough hardwood				
	4” x 4” x 16’-0” center post (4 pieces)	BM	85	\$240	\$20,400
	4”x4” x 12’-0” post (10 pieces)	BM	160	\$240	\$38,400
	2’x4” x 18’-0” plate (2 piece)	BM	24	\$240	\$5,760
	2” x 4” x 24’-0” plate (2 piece)	BM	32	\$240	\$7,680
	2” x4” x 21’-0” door frame	BM	12	\$240	\$2,880
1.2	Construct door to shadehouse comprising of 1” x 4” hardwood frame and mesh	No	1	\$3,500	\$3,500
	Total				\$78,620
2.0	Roof Construction				
	Rough hardwood				
	2” x 2” x 12’-0” rafters (26 pieces)	BM	104	\$240	\$24,960
	1” X 6” X 24’-0” FACING (4 pieces)	BM	48	\$240	\$11,520
	1” x 6” x 12’-0’ facing (8 pieces)	BM	48	\$240	\$11,520
	1” x 2” x 24’-0” facing at lower roof	BM	6	\$240	\$1,440
	Shade Plastic (20Ft*26Ft)	Rolls	1	\$8,000	\$8,000
	Shade Mesh (20Ft*26Ft)	Rolls	1	\$5,000	\$5,000
	Total				\$62,440
3.0	Construction of Planting Trays				
	Rough hardwood				
	2” c 3” x 3’-0” legs (20 pieces)	BM	30	\$240	\$7,200

