

PROJECT REPORT ON

VERMICOMPOST



SUBMITTED BY

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NODAL TRAINING INSTITUTE

ISAP-Haryana

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CHAPTER - I**HIGHLIGHTS OF THE PROJECT REPORT****A. ABOUT THE PROMOTER**

PARTICULARS	ABOUT THE PROMOTER
1. Name	: Praddep Kumar
2. Address	: Kernal Haryana
3. Contact number	: 9948856231
4. Date of birth	: 7.7.1970
5. Educational qualification	: Diploma in Agri
6. Project location	: Karnal
7. Professional Experience	: 1 Years
8. Constitution	: Proprietorship

B. PROJECT PROFILE (FINANCIAL)

PARAMETERS	VALUES	
1. Unit size tonns/annum	200	
2. Product	Vermicompost, Vermiculture	
3. Cost of the project	485,625	
4. Bank loan	364,219	
5. Margin money	121,406	
6. Financial Indicators		
	BCR at 15% DF	1.12:1
	NPW 15% DF(Rs.)	294,969
	IRR (%)	65.07
	DSCR	1.9
7. Interest rate (% per annum)		12.00
8. Repayment period		5 years including first year for moratorium period

CHAPTER - II

PROJECT DESCRIPTION

Introduction

Vermicompost is known to be the world's best fertilizer. Vermicomposting is a method of preparing enriched compost with the use of earthworms. It is one of the easiest methods to recycle agricultural wastes and to produce quality compost. Earthworms consume biomass and excrete it in digested form called worm casts. Worm casts are popularly called as Black gold. The casts are rich in nutrients, growth promoting substances, beneficial soil micro flora and having properties of inhibiting pathogenic microbes. Vermicompost is stable, fine granular organic manure, which enriches soil quality by improving its physicochemical and biological properties. It is highly useful in raising seedlings and for crop production. Vermicompost is becoming popular as a major component of organic farming system. Using Vermicompost can fulfill the requirements for organically grown products.

Production Technology

Vermicomposting materials:

Decomposable organic wastes such as animal excreta, kitchen waste, farm residues and forest litter are commonly used as composting materials. In general, animal dung mostly cow dung and dried chopped crop residues are the key raw materials. Mixture of leguminous and non-leguminous crop residues enriches the quality of vermicompost.

Red earthworm (*Eisenia foetida*) is preferred species of earthworms because of its high multiplication rate and thereby converts the organic matter into vermicompost within 45-50 days. Since it is a surface feeder it converts organic materials into vermicompost from top.

Process of vermicompost preparation:

Vermicomposting is done by either bed or pit method. In bed method composting is done on the pucca / kachcha floor by making bed of organic mixture while in pit method it is done in the cemented pits.

- Vermicomposting unit should be in a cool, moist and shady site
- Cow dung and chopped dried leafy materials are mixed in the proportion of 3: 1 and are kept for partial decomposition for 15 – 20 days.
- A layer of 15-20cm of chopped dried leaves/grasses should be kept as bedding material at the bottom of the bed.
- Beds of partially decomposed material of size 6x2x2 feet should be made.
- Each bed should contain 1.5-2.0q of raw material and the number of beds can be increased as per raw material availability and requirement.
- Red earthworm (1500-2000) should be released on the upper layer of bed.
- Water should be sprinkled with can immediately after the release of worms
- Beds should be kept moist by sprinkling of water (daily) and by covering with gunny bags/polythene.
- Bed should be turned once after 30 days for maintaining aeration and for proper decomposition.
- Compost gets ready in 45-50 days. The finished product is 3/4th of the raw materials used.

Harvesting:

When raw material is completely decomposed it appears black and granular. Watering should be stopped as compost gets ready. The compost should be kept over a heap of partially decomposed cow dung so that earthworms could migrate to cow dung from compost. After two days compost can be separated and sieved for use.

CHAPTER - III

MARKET POTENTIAL

Vermicompost has been emerging as an important source in supplementing and substituting chemical fertilizers in agriculture. Vermicompost, also known as 'farmers' friend' is used for general crops and plantation crops. It is a valuable input for sustainable agriculture and wasteland development. It is a growth promoter and helpful in providing hormones required for plant growth.

There is a lot of demand for vermicompost among farmers as its use increases quality of agricultural products and its price is also cheaper. It is also used widely in pot culture and in home gardens. In addition, many government departments including agriculture, forest and horticulture buy it in bulk. Its demand has decreased over the years.

Government agencies and NGOs are popularizing organic agriculture using vermicompost by organizing awareness campaigns and film show in rural and urban areas.

CHAPTER - IV

EXTENSION ACTIVITIES

1. Productivity of farmers will be increased by supplying affordable, good quality inputs in an efficient manner.
2. The consumption patterns of agriculture inputs have direct relevance to output pattern of crops. Hence farmers will be educated on balanced and efficient use of inputs.
3. Free advisory services ranging from sowing to harvesting of crops as well as farm credit & crop loan will be provided.
4. Tools of information technology will be used to provide latest information to farmers.
5. Farmers will be promoted to utilize Government information technology networks like Kisan Call Centres.
6. Interface meets between Government agencies, Agribusiness campiness & farmers will be arranged.
7. Farmer meetings will be organized on regular basis aiming at training them about the right use of agrochemicals in terms of quantity to be used.
8. Trained human resources in agriculture and allied sciences is going to take on agricultural extension system due to limitations of the present government agricultural extension staff as consulting services.

CHAPTER - V

SWOT ANALYSIS

Strengths:

- Infertility and soil erosion are the main problems in front of Indian farmers, the use of vermi compost improves soil structure, texture, aeration, water holding capacity and prevent soil erosion
- It is an easily adoptable low cost technology.
- Cheap price as compare to chemical fertilizers.
- Crops harvested by using this manure has high demand in international market. This crop fetches premium selling price.
- Media is creating awareness about importance of vermicompost at national and international level.

Opportunities:

- People are more concerned about their health so they want to consume organic food.
- Hundreds of tones biodegradable organic waste is being thrown in cities creating disposal problems in the country. This waste can be converted into valuable compost by utilizing as raw material.
- Legitimate support by the government to the farmers to start this unit.
- Absence of competitors in the market can be a big opportunity for producers.
- Wide scope at national and international level.

Weakness

- At initial level its use increases the cost of production.
- Less awareness among the people.
- Because of the natural way of production, we cannot reduce the production time.

Threats

- Some small players have distorted its image in its nascent stage.
- 90% farmers are using chemical fertilizers. Farmer does not take initiative to convert his farm into organic
- Big sellers of chemical fertilizers are hushing up the progress of small producers of Vermi Compost by offering attractive margins to wholesalers so that they would sell chemical fertilizers only.

CHAPTER - VI
ECONOMICS OF THE PROJECT

A. BASIS & PRESUMPTIONS

PARTICULARS	UNIT	QUANTITY
I. Techno-economic parameters		
One cycle of production	Days	75
Total cycles in a year	Nos.	5
Repayment period	Year	5
II. Expenditure norms		
Agro waste	Rs./ton	1,000
Cow dung	Rs./ton	1,200
Mother earthworms	Rs./kg.	50
Cost of skilled worker per month	Rs.	7,500
Cost of unskilled worker per month	Rs.	5,000
III. Income norms		
Rate of vermicompost	Rs./ton	4,500
Rate of vermiculture	Rs./kg.	50
Production of vermicompost per cycle	Tonns	40
Production of worms per tonne of vermicompost	Kg.	5

B. TOTAL COST OF PROJECT

PARTICULARS	UNIT	UNIT RATE	QUANTITY	AMOUNT
I. Capital Cost				
1. Land				Own
Site Development	Ls.			<u>10,000</u>
				10,000
2. Building				
Shed of vermicompost unit	Sq.ft.	200	400	80,000
Platform with shed For Finished Goods	Sq.ft.	250	50	12,500
Finished good Godowns, Labour quarter, Store Office	Sq.ft.	300	200	60,000
Water tank	Ls.			<u>10,000</u>
				162,500
3. Machinery & Equipments				
Shovels, Spades, Crowbars, Iron Baskets& Others	Ls.			10,000
Plumbing and fitting tools	Ls.			5,000
Power operated shredder	Nos.	20,000	1	20,000
Weighing scale & weighing machine	Nos.	5,000	1	5,000
Pumpset	Nos.	10,000	1	10,000
Water supply system-pipe, dripper etc.	Nos.	10,000	1	10,000
Wheel barrows/ trolley with handle	Nos.	8,000	1	8,000
Sieving machine	Nos.	30,000	1	30,000
Culture tray	Nos.	250	10	<u>2,500</u>
				100,500
4. Misc. Fixed Assets				
Electrification costs incl. electrification, cabling cost, illumination, etc.	Ls.			10,000
Furniture & Fixtures	Ls.			<u>25,000</u>
				35,000
5. Contingencies	%	5		6,375
			TOTAL (A)	314,375
II. Working Capital (Operational cost for one cycle of 75 days)				
1. Agro waste	Tonns	1,000	50	50,000
2. Cow dung	Tonns	1,200	25	30,000
3. Mother earthworms	Kg.	50	300	15,000
4. Packaging	Ls.			1,000
5. Electricity, Water	Ls.			1,000
6. Skilled workers	month	7,500	2.5	37,500
7. Unskilled workers	month	5,000	2.5	25,000
8. Office expenses	Ls.			5,000
9. Marketing expenses @ 1% of sale				<u>6,750</u>
			TOTAL (B)	171,250
TOTAL COST OF PROJECT			TOTAL (A+B)	485,625

C. MEANS OF FINANCE

PARTICULARS	UNIT	UNIT RATE	AMOUNT Rs.
1. Term loan	%	75	364,219
2. Promotor's contribution	%	25	<u>121,406</u>
		TOTAL	485,625

D. PROJECTED PROFITABILITY

(Value in Rs.)

PARTICULARS	UNIT	UNIT RATE	QUANTITY	IYEAR	IIYEAR	IIIYEAR	IVYEAR	VYEAR
I. INCOME								
Capacity Utilized	%			75	85	90	90	90
a. Vermicompost	Tonns	4,500	200	675,000	765,000	810,000	810,000	810,000
b. Vermicultur	Kg.	50	1,000	37,500	42,500	45,000	45,000	45,000
			TOTAL (A)	712,500	807,500	855,000	855,000	855,000
II. EXPENDITURE								
a. Cost of Raw Materials								
Agro waste	Tonns	1,000	250	250,000	250,000	250,000	250,000	250,000
Cow dung	Tonns	1,200	125	150,000	150,000	150,000	150,000	150,000
Mother earthworms	Kg.	50	1,500	75,000	-	-	-	-
b. Cost of Consumbles								
Packaging	Ls.			5,000	5,000	5,000	5,000	5,000
c. Cost of Utilities								
Electricity, Water	Ls.			5,000	5,000	5,000	5,000	5,000
d. Cost of Manpower								
Skilled workers	Rs./Annum	90,000	1	90,000	90,000	90,000	90,000	90,000
Unskilled workers	Rs./Annum	60,000	1	60,000	60,000	60,000	60,000	60,000
e. Overhead Expenses								
Office Expenses	Ls.			25,000	25,000	25,000	25,000	25,000
Marketing expenses @ 1% of sale				33,750	33,750	33,750	33,750	33,750
			TOTAL (B)	693,750	618,750	618,750	618,750	618,750
III. NET INCOME								
			TOTAL (A-B)	18,750	188,750	236,250	236,250	236,250

F. FINANCIAL ANALYSIS*(Value in Rs.)*

PARTICULARS	I YEAR	II YEAR	III YEAR	IV YEAR	V YEAR	TOTAL
Capital costs	314,375					
Recurring costs	693,750	618,750	618,750	618,750	618,750	
TOTAL COST	1,008,125	618,750	618,750	618,750	618,750	
Benefit	712,500	807,500	855,000	855,000	855,000	
Depreciated value of building, fencing, borewell etc @10%					95,144	
Depreciated value of machinery & equipments @15%					58,062	
TOTAL BENEFIT	712,500	807,500	855,000	855,000	1,008,206	
NET BENEFIT	-295,625	188,750	236,250	236,250	389,456	
Discounting factor @15%	0.87	0.76	0.66	0.57	0.5	
NPV cost at 15% DF	877,069	470,250	408,375	352,688	309,375	2,417,756
NPV benefits at 15% DF	619,875	613,700	564,300	487,350	427,500	2,712,725
NPW at 15% DF	294,969					
BCR at 15% DF	1.12:1					
IRR%	65.07					

G. TERM LOAN REPAYMENT

Rate of interest - % per annum : 12.00

Opening balance of term loan : 364,219

(Value in Rs.)

Year	Loan Outstanding	Net Income	Principal	Interest	Total Repayment	Net Surplus	DSCR
1	364,219	18,750	-	43,706	0	0	-
2	364,219	188,750	91,055	43,706	134,761	53,989	1.4
3	273,164	236,250	91,055	32,780	123,834	112,416	1.9
4	182,110	236,250	91,055	21,853	112,908	123,342	2.1
5	91,055	236,250	91,055	10,927	101,981	134,269	2.3
						Average DSCR	1.9