Package of Practice

Coleus Farming

An Initiative of North Eastern Council (NEC)

Implemented by North Eastern Development Finance Corporation Limited (NEDFi)

COLEUS

SCOPE OF THE CROP: Coleus is a crop that gives quality returns as its every part is sold from shoot to root. A handsome profit can be procured on selling its roots but an additional bonus is its shoot part which is used as planting material. Coleus Forskohlii Herb is used in urinary ailments and it also reduces the blood pressure. Other than providing genuine planting material of Coleus, purchasing and selling of Coleus dry roots from many states of India and supply to the needy is also possible.

VARIETIES OF COLEUS: Rustic Orange, Fishnet Stockings,Wizard Mix, Henna, Trailing Plum, Black Dragon, Limelight etc

BACKGROUND OF THE CROP:

- **SCIENTIFIC NAME**: Coleus forskohlii
- **FAMILY:** Lamiaceae
- **DISTRIBUTION**: The crop has been distributed all over the tropical and subtropical regions of India, Pakistan, Sri Lanka, Brazil and Ethiopia.
- **PARTS USED**: Roots
- **BOTANICAL DESCRIPTION**: Coleus is an aromatic perennial plant 0.5 m tall with thick tubers with bluish to pale lavender coloured flowers arranged in whorls. Leaves are usually pubescent and nodes are often hairy. Roots are tuberous, 20 cm long and they are conical, fusiform, straight and strongly aromatic.

  Coleus is composed of about 150 species under the Mint family of plants and is closely related to spearmint, peppermint, basil, thyme, oregano and salvia.

USES AND HEALTH BENEFITS:

- Coleus produces forskolin, an extract useful for pharmaceutical preparations and research in cell biology
- Coleus is a traditional digestive remedy
- Leaves have valuable medicinal properties and are used in pickling
- Coleus is used to treat allergies, dry eye, skin conditions such as eczema and psoriasis, obesity, irritable bowel syndrome, urinary tract infections, bladder infections, insomnia etc
- It also helps to reduce blood pressure by relaxing the muscles

CHALLENGES:

- The soil should drain well and the addition of compost can improve a soil's consistency, water and oxygen retention etc
- Coleus needs to be deadheaded regularly to remove flower heads before they go to seed
- The plant should have a robust root system so while transplanting it doesn't get disintegrated in hands

- Watering should be done thoroughly so that it settles the plant in and drive out air pockets and results in good root-to-soil contact

CULTIVATION AND MANAGEMENT:

- **SOIL**: Well-drained red loamy soils are suited for cultivation and water stagnation should be avoided. Ph: 5.5-7
- **CLIMATE:** Coleus grows well on barren hills at an altitude of 2400 m. The annual rainfall is 100-160 cm mainly between June-September
- **PROPAGATION:** The crop is propagated through terminal cuttings or rooted cuttings
- **PLANTING SEASON**: Planting is done during June-July
- **PLANTING**: Planting is done at 60 X 45 cm apart. In low fertile soils, planting is done at 60 X 30 cm which requires 55,000 plants/ ha
- **MANURES AND FERTILISERS**: 15 t/ ha and NPK @ 30:60:50 kg/ ha is applied in two split doses at 30-45 days after planting
- **IRRIGATION:** Irrigation is given immediately after planting and subsequently at weekly intervals of time
- **PLANT PROTECTION**: 1**. Nematode**- Planting of marigold along the sides of channels control nematode population

  2. **Root rot**- Trichoderma viridi @ 5 kg/ ha is mixed with well-rotten FYM and applied twice at 20 days interval

  3**. Bacterial wilt**- Drenching with 300 ppm of Streptocycline to control the wilt
- **HARVESTING:** Harvesting can be done 5-6 months after planting. The plants are loosen, uprooted, the tubers are separated, cleaned and sun dried for extraction of ' forskolin'
- **YIELD:** Fresh tubers- 15- 20 t/ha, Dry tubers: 2000-2200 kg/ha

COLEUS PLANT AND COLEUS EXTRACT

SOURCE: GOOGLE IMAGE

	FARM ECONOMICS OF COLEUS CULTIVATION IN ONE ACRE OF LAND AREA	
	CAPITAL INVESTMENT	
SL NO	PARAMETERS	APPROX AMOUNT IN Rs
A	INITIAL EXPENSES	
1	LAND HOLDING	OWN LAND
2	LAND DIGGING	20,000
3	FENCING	10,000
4	RENT OF POWER TILLER INCLUDING ALL	20,000
5	SOIL LEVELLING AND TILLERING	15,000
6	STOREHOUSE CONSTRUCTION COST 100 SQ FT @ 200/-PER SQ FT	20,000
	TOTAL	85,000
B	IRRIGATION AND IMPLEMENTS	
1	TUBEWELL/ SUBMERSIBLE PUMP COST	10,000
2	PUMP AND ELECTRICAL INSTALLATION	20,000
3	AGRICULTURAL EQUIPMENTS	4,000
4	DRYING PLATFORM (OIL EXTRACTION)	25,000
	TOTAL	59,000
	TOTAL CAPITAL INVESTMENT	**144,000**
	RECURRING COST	
C	ESSENTIAL CREDENTIALS	
1	COST OF LABOUR (1. LAND PREPARATION COST-12 MANDAYS@ 350/-PER MANDAYS, 2. PLANTING-12 MANDAYS @350/-PER MANDAYS, 3.FENCING-12 MANDAYS @ 350/-PER MANDAYS, 4. HARVESTING (3 TIMES A YEAR)-12MANDAYS @ 350/-PER MANDAYS PER HARVESTING, TOTAL-48 MANDAYS, IN 1ST YEAR 5. OIL EXTRACTION-12 MANDAYS @ 350/-PER MAN DAYS	16800
2	FERTILISER ABD OTHER AGRO CHEMICALS LUMPSUM	15000
	TOTAL	31,800
D	PLANTING AND MULCHING MATERIAL	

1	COLEUS PLANTING MATERIAL (2200 CUTTINGS / ACRE) (35/- PER PLANTING MATERIAL)	77,000
2	MULCHING (USING BLACK POLYTHENE MULCH)	20,000
3	MISCELLANEOUS	20,000
	TOTAL	117,000
	TOTAL RECURRING COST	**148,800**
	GRAND TOTAL (CAPITAL COST + RECURRING COST)	**292,800**
	INCOME STATEMENT	
SL NO	PARAMETERS	APPROX AMOUNT IN Rs
1	TOTAL PRODUCTION OF OIL - 80 KG/ ACRE AFTER 1 YEAR, SELLING PRICE-1000/ KG	80,000
2	FRESH TUBER PRODUCTION, 8000 KG / ACRE AFTER 3-4 CUTTINGS IN A YEAR, SELLING PRICE OF FRESH TUBER- 100/ KG , DRY TUBER PRODUCTION-800 KG/ACRE, SELLING PRICE OF DRY TUBER-150/KG (DEDUCTING THE QUANTITY OF OIL OBTAINED)	920000
	TOTAL INCOME	920000
	PROFIT AND LOSS STATEMENT	
SL NO	PARAMETERS	APPROX AMOUNT IN Rs
1	CAPITAL INVESTMENT	144,000
2	RECURRING COST	148,800
3	TOTAL INVESTMENT UPTO 1 YEAR	292,800
4	TOTAL INCOME	920000
5	TOTAL PROFIT AFTER 1 YEAR	771,200

PROJECTED PROFITABILITY STATEMENT

(Amount in Rs….)

	PARTICULARS/YEAR	1ST YEAR
A	INCOME	
	TOTAL PRODUCTION OF OIL - 80 KG/ ACRE AFTER 1 YEAR, SELLING PRICE-1000/ KG	
	FRESH TUBER PRODUCTION, 8000 KG / ACRE AFTER 3-4 CUTTINGS IN A YEAR, SELLING PRICE OF FRESH TUBER- 100/ KG , DRY TUBER PRODUCTION-800 KG/ACRE, SELLING PRICE OF DRY TUBER-150/KG (DEDUCTING THE QUANTITY OF OIL OBTAINED (25% yield in 1st year)	200000
	TOTAL INCOME	200000
B	EXPENDITURE	
B-1	COLEUS PLANTING MATERIAL (2200 CUTTINGS / ACRE) (35/- PER PLANTING MATERIAL)	77,000
B-2	MULCHING BY USING BLACK POLYTHENE MULCH	20,000
B-3	MISCELLANEOUS LUMPSUM	20,000
B-4	COST OF LABOUR (1. LAND PREPARATION COST-12 MANDAYS, 2. PLANTING-12 MANDAYS, 3.FENCING-12 MANDAYS , 4. HARVESTING (3 TIMES A YEAR/1TIME IN 1ST YEAR)-12MANDAYS HARVESTING, , 5. OIL EXTRACTION-12 MANDAYS @ 350/-PER MAN DAYS (TOTAL-48 MANDAYS IN 1ST YEAR & 72 MANDAYS IN REST YEARS)	16,800
B-5	FERTILISER AND OTHER CHEMICALS	15,000
	TOTAL EXPENDITURE	148,800
C	GROSS PROFIT (A-B)	51,200
D	Interest on bank loan	18666
E	Depreciation (10%-wdvm)	7900
F	Total D+E	26566
G	Net profit (C-F)	24634

FINANCIAL ANALYSIS

(Amount in Rs…..)

Particular / Year	1st year	2nd year	3rd year	4th year
Expenses				
Initial Cost	144,000			
Recurring cost	148,800	60200	60200	60200
TOTAL COST	292800	60200	60200	60200
BENEFIT				
TOTAL BENEFIT	200000	920000	920000	920000
NET BENEFIT	-92800	859800	859800	859800
DF @ 15 %	0.87	0.76	0.66	0.57
PWC	254736	45752	39732	34314
PWB	174000	699200	607200	524400
NPW	**1630266**			
BCR (@15%DF)	**5.35:1**			
DF@50%		0.44	0.3	0.2
PWC		26488	18060	12040
PWB		404800	276000	184000
NPW	**746036**			
IRR (%)	**79.53**			

REPAYMENT SCHEDULE

Project period : 4 years

Moratorium period : 0ne year including moratorium period

Bank ROI : 8.5% PA

Particulars	1st year	2nd year	3rd year	4th year
Opening Balance	219600	219600	146400	73200
Interest @8.50 p a	18666	18666	12444	6222
Principal	0	73200	73200	73200
Total Return (Principal + Interest)	18666	91866	85644	79422
Closing Balance	219600	146400	73200	NIL

DEBT SERVICE COVERAGE RATIO

(Amount In Rs…)

PARTICULARS/ YEAR	1ST	2ND	3RD	4TH
(A) Total Income:				
Net Profit	24634	834024	840957	847819
Depreciation	7900	7110	6399	5759
Interest on loan	18666	18666	12444	6222
Total=	51200	859800	859800	859800
(B) Total Commitment:				
Bank Loan	0	73200	73200	73200
Interest loan	18666	18666	12444	6222
Total =	18666	91866	85644	79422
DSCR (A/B)=	2.74	9.36	10.04	10.83
Average DSCR=	5.11			

DEPRECIATION TABLE

(Amount in Rs….)

Particulars	1st yr	2nd yr	3rd yr	4th yr
Asset Value (On ITEM : A(4,) & B of capital cost)	79000	71100	63990	57591
Depreciated value (10%-WDVM)	7900	7110	6399	5759
Closing value	71100	63990	57591	51832