

E-Practical Manual
On
Farm Management, Production and
Resource Economics

Course Code: AEC 321

Credit Hours: 2 (1+1)

[For B. Sc. (Ag.) Agriculture VIth Semester Students]



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E-Practical Manual on
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SYLLABUS

- Preparation of farm layout.
- Determination of cost of fencing of a farm.
- Computation of depreciation cost of farm assets.
- Application of equi-marginal returns/opportunity cost principle in allocation of farm resources.
- Determination of most profitable level of inputs use in a farm production process.
- Determination of least cost combination of inputs.
- Selection of most profitable enterprise combination.
- Application of cost principles including CACP concepts in the estimation of cost of crop and livestock enterprises.
- Preparation of farm plan and budget, farm records and accounts and profit & loss accounts.
- Collection and analysis of data on various resources in India.

Details of student

Name of Student
ID. No.
Batch
Group
Session
Semester
Course Name
Course Code
Credit

CERTIFICATE

This is to certify that Mr. /Ms. ID. No.: has completed the practical exercises of course (Course Name) and Course No. as per the syllabus of B. Sc. (Ag.) Agriculture in Semester in the year in the respective laboratory/field of college.

Date:

Course Instructor

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Objective 9: Application of cost principles including CACP concepts in the estimation of cost of crop and livestock enterprises.

Exercise 1: On the basis of information given below calculate:

- (a) Cost A1, A2, B1, B2, C1, C2 and C3
- (b) Returns over different costs

Operational Cost		Amount (Rs./Ha)
Human Labour	Family	15459.74
	Attached	0.00
	Casual	3207.81
	Total	18667.55
Animal Labour	Hired	4.82
	Owned	42.84
	Total	47.66
Machine Labour	Hired	3763.95
	Owned	1682.90
	Total	5446.85
Seed		13159.97
Fertilizer & Manure	Fertilizer	1938.35
	Manure	2849.32
	Total	4787.67
Insecticides		1251.11
Irrigation Charges		4320.19
Miscellaneous		0.00
Interest on Working Capital		556.28
Fixed Costs		
Rental Value of Owned Land		16744.25
Rent Paid For Leased-in-Land		0.00
Land Revenue, Taxes, Cesses		14.89
Depreciation on Implements & Farm Building		2027.61
Interest on Fixed Capital		626.23
Total Cost [Operational + Fixed]		

S. No.	Particulars	Amount (Rs./Ha)
1	Main product	15906.83
2	By product	19110.24

Exercise 2: On the basis of information given below calculate:

- (a) Cost A1, A2, B1, B2, C1, C2 and C3
 (b) Returns over different costs

Operational Cost		Amount (Rs./Ha)
Human Labour	Family	11018.95
	Attached	0.00
	Casual	3096.61
	Total	14115.56
Animal Labour	Hired	0.00
	Owned	0.00
	Total	0.00
Machine Labour	Hired	2105.35
	Owned	891.35
	Total	2996.70
Seed		703.20
Fertilizer & Manure	Fertilizer	656.38
	Manure	1044.53
	Total	1700.91
Insecticides		0.00
Irrigation Charges		110.45
Miscellaneous		0.00
Interest on Working Capital		228.98
Fixed Costs		8125.67
Rental Value of Owned Land		5255.47
Rent Paid For Leased-in-Land		274.19
Land Revenue, Taxes, Cesses		4.62
Depreciation on Implements & Farm Building		2329.27
Interest on Fixed Capital		262.12
Total Cost [Operational + Fixed]		

S. No.	Particulars	Amount (Rs./Ha)
1	Main Product	15906.83
2	By Product	19110.24

Exercise 3: Prepare a farm record for an average farm.

1. Land use records

S. No.	Particulars	Area (Ha)
1	Cultivated area	
2	Irrigated	
3	Irrigated dry	
4	Dry	
5	Permanent fallows	
6	Land under buildings	
7	Problematic soils	

2. Cropping pattern

S. No.	Particulars	Area (Ha)
1	Kharif	
	a.	
	b.	
	c.	
	d.	
2	Rabi	
	a.	
	b.	
	c.	
	d.	
3	Summer	
	a.	
	b.	
	c.	
	d.	

3. Permanent Deadstock register

S.No.	Particular	Year of construction/ purchase	Purchase value (in Rs.)	Repair expenditure per annum (in Rs.)
1	Farm buildings			
2	Cattle shed			
3	Wells/tube wells			
4	Pump house			
5	Tractors			
6	Oil engines			
7	Electric motors			
8	Threshers			
9	Sprayers			
10	Bullock carts			
11	Wooden ploughs			
12	Iron ploughs			
13	Cultivators			
14	Harrows			
15	Crowbars			
16	Spades			
17	Sickles			
18	Hand hoes, etc.			

4. Farm Livestock Records

Type	Number	Breed	Age	Purchase Value
Homebred purchased				
Milch animals				
Cows				
She-buffaloes				
Draft animals				
Bullocks				

Exercise 4: The Following are the farm records maintained by the co-operate farms and state farms.

1. Forecast register

Field No.	Area	Nature of work	Wage rates and labourers forecasted					
			Skilled labourers	Wage Rate (Rs.)	Semi-Skilled Labourers	Wages Rate (Rs.)	Unskilled labourers	Wage rate (Rs.)

Skilled Labourers	Amount (in Rs.)	Semi-Skilled Labourers	Amount (in Rs.)	Unskilled labourers	Amount (in Rs.)

2. Daily memorandum sheet (DMS)

Field	Purpose of work	Allotment of labourers						
		Skilled	Wages (in Rs.)	Semi-skilled	Wages (in Rs.)	Unskilled	Wages (in Rs.)	Amount (in Rs.)

3. Muster Sheets

S. No	Name of the casual labourers	Sex	Nature of work	No. of days worked in a fortnight														No. of days	Wages (in Rate/ day Rs.)	Amount (in Rs.)
				1	2	3	4	5	6	7	8	9	10	11	12	13	14			

4. Permanent Dead Stock Register

Date	Particulars	Receipts	Issues	Balance

5. Temporary Dead Stock Register

Date	Particulars	Receipts	Issues	Balance

6. Fertilizer and chemicals register

S. No	Date	Particulars	Receipts	Issues	Balance

7. Seed stock register (grams/kgs/nos.)

Date	Particulars	Receipts	Issues	Balance

8. FYM and cattle feed register (kgs/tonnes)

S. No	Date	Particulars	Receipts	Issues	Balance

9. Tractor expenditure register(Rs)

Date	Particulars	Receipts	Issues	Balance

10. Livestock Register

Date of purchase	From whom purchased/received	Description of the animal	Date of birth	Book value (Rs)

11. Farm produce stock register

S. No	Dry land/ Wet land	Season crop variety	Product (Qtls/ tonne)	Entered in page no. of produce stock register	Signature of the store keeper	Signature of the farm superintendent

12. Produce stock register

Date	Issue/sale	Receipts	Issues	Balance

13. Indent register

Indent No.	Date	Particulars	Quantity	Purpose	Receiver	Indent	Signature of the store keeper	Signature of the farm superintendent

14. Sales price register

S. No.	Name of the product	Quantity for proposed sale	Rates furnished by the secretary, Regulated market committee (Rs)	Rate per unit in the local market (Rs)	Rate at which disposed (Rs)

15. Sanction Register

S. No.	Date	Particulars cum purpose of expenditure	Quantity	Rate (unit price Rs.)	Amt to be Sanctioned (Rs.)	Head of the Account	Signature of farm manager	Signature of sanctioning authority

16. Auction Register

S. No	Name of the bidder	Address of the bidder	Amount (Rs.)	Signature of the bidder	Amount deposited (Rs.)	Signature of the successful bidder

17. Cash book

Date	Opening Balance	Sales No.	Bill Amount (Rs.)	Amount remitted to the Bank (Rs.)	Cash in hand (Rs.)

Objective 11: Collection and analysis of data on various resources in India.

Exercise 1: The data on Land Use Pattern is given below. Calculate the % change in the land use pattern for every decade.

Year	Land Utilisation Statistics (000 Hectares)
1980-81	304159
1981-82	304282
1982-83	304093
1983-84	304190
1984-85	304310
1985-86	304698
1986-87	305009
1987-88	304837
1988-89	304826
1989-90	304878

Year	Land Utilisation Statistics (000 Hectares)
1990-91	305023
1991-92	304898
1992-93	304846
1993-94	304881
1994-95	304829
1995-96	304875
1996-97	304622
1997-98	304661
1998-99	305004
1999-00	305016

Year	Land Utilisation Statistics (000 Hectares)
2000-01	305195
2001-02	305127
2002-03	305358
2003-04	305567
2004-05	305587
2005-06	306884
2006-07	307088
2007-08	307232
2008-09	307408
2009-10	307408

Year	Land Utilisation Statistics (000 Hectares)
2010-11	307224
2011-12	307134
2012-13	307232
2013-14	307538
2014-15	307523
2015-16	307493
2016-17	308058
2017-18	307509
2018-19	307528
2019-20	306542

Solution:

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Exercise 2 : The data on Forest cover (000 Hectares) is given below. Calculate the % change in the forest cover in every decade.

Year	Land Utilisation Statistics (000 Hectares)
1980-81	67460
1981-82	67365
1982-83	67330
1983-84	66599
1984-85	66391
1985-86	67067
1986-87	66875
1987-88	66936
1988-89	66944
1989-90	67406

Year	Land Utilisation Statistics (000 Hectares)
1990-91	67702
1991-92	67866
1992-93	67981
1993-94	68277
1994-95	68603
1995-96	68817
1996-97	69103
1997-98	69246
1998-99	69215
1999-00	69164

Year	Land Utilisation Statistics (000 Hectares)
2000-01	69843
2001-02	69720
2002-03	69821
2003-04	69968
2004-05	69960
2005-06	71431
2006-07	71463
2007-08	71529
2008-09	71543
2009-10	71555

Year	Land Utilisation Statistics (000 Hectares)
2010-11	71593
2011-12	71618
2012-13	71590
2013-14	71848
2014-15	72071
2015-16	72137
2016-17	72295
2017-18	72334
2018-19	72295
2019-20	71751

Solution:

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Exercise 3: Collect the data regarding source of irrigation (Canals, Tanks, Tubewells) and net irrigated area for India from 1950-51 to 2021-22 and calculate the % change.