Janata Shikshan Sanstha's
Kisan Veer Mahavidyalaya, Wai
Department of Statistics
Project List
B.Sc III (2019-20)

Sr.No.	Name of Student	Project Name
1	Nevase Sonali Chandrakant	A Statistical study & analysis of Strawberry Farming in different locations
2	Raut Nivedita Bhaskar	A Statistical study & analysis of Strawberry Farming in different locations
3	Gore Sarita Baban	A Statistical study & analysis of Strawberry Farming in different locations
4	Rajpure Pratiksha Rohidas	A Statistical study & analysis of Strawberry Farming in different locations
5	Chaudhari Neha Prakash	A Statistical study & analysis of Botanical data
6	Gaikwad Sonali Anil	A Statistical study & analysis of Botanical data
7	Suraywanshi Tanuja Shivdas	A Statistical study & analysis of Botanical data
8	Pachangane Manasi Ravindra	A Statistical study & analysis of Botanical data
9	Chavan Anuja Sanjay	A Statistical study & analysis of Botanical data
10	Ithape Snehal Sunil	A Statistical study & analysis of Botanical data
11	Ithape Mayuri Ramesh	A Statistical study & analysis of Botanical data
12	Pisal Ankita Dyaneshwar	A Statistical study & analysis of Botanical data
13	Nimbalkar Ankita Sunil	A Statistical study & analysis of Botanical data
14	Kondhalkar Monali Hindurao	A Statistical study & analysis of Botanical data
15	Gadhve Samruddhi Sanjay	A Statistical study & analysis of Botanical data
16	Gole Nilam Bharat	A Statistical study & analysis of Botanical data
17	Rajpure Shraddha Shrikant	A Statistical study & analysis of Sample survey of English and Marathi Medium
18	Kumbhar Dhanashree Ankush	A Statistical study & analysis of Sample survey of English and Marathi Medium
19	Sawant Shubham Manoj	A Statistical study & analysis of Sample survey of English and Marathi Medium
20	Shinde Swaraj Jivan	A Statistical study & analysis of Sample survey of English and Marathi Medium
21	Keshave Selin Sunil	Statistical analysis of Allelopathic Effect of Common Weed on Seed germination of Wheat Plant
22	Sonawale Aishwarya Kisan	Statistical analysis of Allelopathic Effect of Common Weed on Seed germination of Wheat Plant
23	Bhanage Prajakta Uttam	Statistical analysis of Allelopathic Effect of Common Weed on Seed germination of Wheat Plant
24	Phanse Komal Jagannath	Statistical analysis of Allelopathic Effect of Common Weed on Seed germination of Wheat Plant

J.S. SANSTHA'S KISAN VEER MAHAVIDYALAYA WAI

Head
Department of Statistics
Kisan Veer Mahavidyalaya, Wai

Janata Shikshan Sanstha's

Kisan Veer Mahavidyalaya, Wai

Department Of Statistics

Certificate

This is to certify that following students of B.Sc. III

Sr. No	Name of Students
1.	BHANAGE PRAJAKTA UTTAM
2.	KESHAWAY SELIN SUNIL
3.	PHANSE KOMAL JAGANNATH
4.	SONAWALE AISHWARYA KISAN

have successfully completed their project work in the statistics entitled **" Statistical Analysis of Allopathic Effect of Common Weed on Seed Germination of Wheat Plant"** prescribed by the SHIVAJI UNIVERSITY, KOLHAPUR during academic year 2019-20 in partial fulfilment of requirement of Statistics Practical Examination.

PROJECT GUIDE **EXAMINER** **HEAD, DEPT. OF STATISTICS**

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Kisan Veer Mahavidyalaya, Wai

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Sr. No	Name of Students
1.	GORE SARITA BABAN
2.	NEVASE SONALI CHANDRAKANT
3.	RAJPURE PRATIKSHA ROHIDAS
4.	RAUT NIVEDITA BHASKAR

have successfully completed their project work in the statistics entitled " **A Statistical Study and Analysis of Strawberry Farming in Different Locations** " prescribed by the SHIVAJI UNIVERSITY, KOLHAPUR during academic year 2019-20 in partial fulfilment of requirement of Statistics Practical Examination.

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Sr. No	Name of Students
1.	KUMBHAR DHANSHREE ANKUSH
2.	RAJPURE SHRADDHA SHRIKANT
3.	SAWANT SHUBHAM MANOJ
4.	SHINDE SWARAJ JIVAN

have successfully completed their project work in the statistics entitled **" A Statistical Study and Analysis of Sample Survey of English and Marathi Medium"** prescribed by the SHIVAJI UNIVERSITY, KOLHAPUR during academic year 2019-20 in partial fulfilment of requirement of Statistics Practical Examination.

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Sr. No	Name of Students
1.	CHAUDHARY NEHA PRAKASH
2.	GAIKWAD SONALI ANIL
3.	SURYAWANSHI TANUJA SHIVDAS

have successfully completed their project work in the statistics entitled " **A Statistical Study and Analysis of Botanical Data**" prescribed by the SHIVAJI UNIVERSITY, KOLHAPUR during academic year 2019-20 in partial fulfilment of requirement of Statistics Practical Examination.

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Sr. No	Name of Students
1.	CHAVAN ANUJA SANJAY
2.	ITHAPE MAYURI RAMESH
3.	ITHAPE SNEHAL SUNIL
4.	PACHANGANE MANASI RAVINDRA

have successfully completed their project work in the statistics entitled **" A Statistical Study and Analysis of Botanical Data"** prescribed by the SHIVAJI UNIVERSITY, KOLHAPUR during academic year 2019-20 in partial fulfilment of requirement of B.Sc. III Statistics Practical Examination.

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Sr. No	Name of Students
1.	GADHAVE SAMRUDDHI SANJAY
2.	GOLE NILAM BHARAT
3.	KONDHALKAR MONALI HINDURAO
4.	NIMBALKAR ANKITA SUNIL
5.	PISAL ANKITA DNYANESHWAR

have successfully completed their project work in the statistics entitled " **A Statistical Study and Analysis of Botanical Data**" prescribed by the SHIVAJI UNIVERSITY, KOLHAPUR during academic year 2019-20 in partial fulfilment of requirement of Statistics Practical Examination.

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Head
Department of Statistics
Kisan Veer Mahavidyalaya, Wai

B.Sc. III

Sample Copy of Project

JANTA SHIKSHAN SANSTHA

KISAN VEER MAHAVIDYALAYA WAI

A project report on

"A Statistical study and analysis of Strawberry farming in different locations"

Submitted To

Department of statistics B.Sc-III

By

1. Miss. Nevase Sonali Chandrakant

2 Miss . Raut Nivedita Bhasakar

3 Miss. Rajpure Pratiksha Rohidas

4 Miss. Gore Sarita Baban

Under the guidance of

PROF.B.B.PATKURE

2019-2020

Janata Shikshan Sanstha's

Kisan Veer Mahavidyalaya, Wai

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PROJECT GUIDE **EXAMINER** **HEAD, DEPT. OF STATISTICS**

Head
Department of Statistics
Kisan Veer Mahavidyalaya, Wai

Acknowledgment

It agree me great pleasure to express my sincere thanks with deep sense. Prof.B.B.Patkure sir (Head of Department), all faculty members of statistics department, KVM Wai of their inspiring guidance constant encouragement, kind co-operation.

I would like to thank all non-teaching staff of our department for their help and co-operation.

We special thanks to Economics Department for providing us necessary relevant information to our project study, without their co-operation, it was really difficult be successful in our project.

INDEX

INTRODUCTION

We have a secondary data, collected by Dr. M.T.Jadhav. He had studied about the data of Strawberry farming in different locations.

There are total 266 farmers from four locations. The locations are Mahabaleshwar, Koregaon, Wai and medha. In data we got information about production, cultivation cost and marketing cost etc. from the year 2002 -2012.

Objective

- To compare profit per acre of strawberry farms for different locality.

- To compare cost of production per acre of strawberry farms for different locality.

- To find trend of profit per acre of strawberry farms over different years for each locality.

- Comparison of ratio of marketed output to farm output for different locality

Data Analysis:

Data is given for 266 farmers from which,

159 from Mahabaleshwar,

58 from Medha,

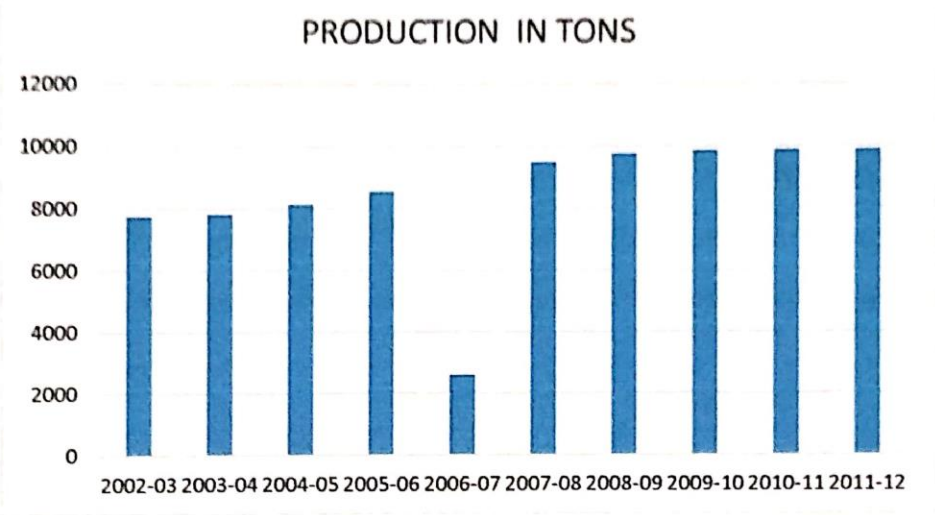
17 from Wai,

32 from Koregaon.

Mahabaleshwar

YEAR	PRODUCTIN (IN TONS)	CULTIVATION COST(IN INR)	MARKETING COST(TOTAL)	PROFIT (IN INR)
2002-03	7745.508	143640.561	20646.55145	245426.6
2003-04	7840.848	144754.3403	20261.323	229756.8
2004-05	8135.445	159963.3124	27815.16878	304843.5
2005-06	8553.893	170005.2411	31944.0854	276282.7
2006-07	2602.733	72622.19227	9361.132666	74295.3
2007-08	9502.321	194098.4951	42730.97876	215706.5
2008-09	9758.086	206074.698	49638.50771	302805.6
2009-10	9851.168	212382.5746	53678.32861	300552.3
2010-11	9868.568	217439.0287	55846.15355	297913.8
2011-12	9868.568	342436.2611	61009.69511	133002.3

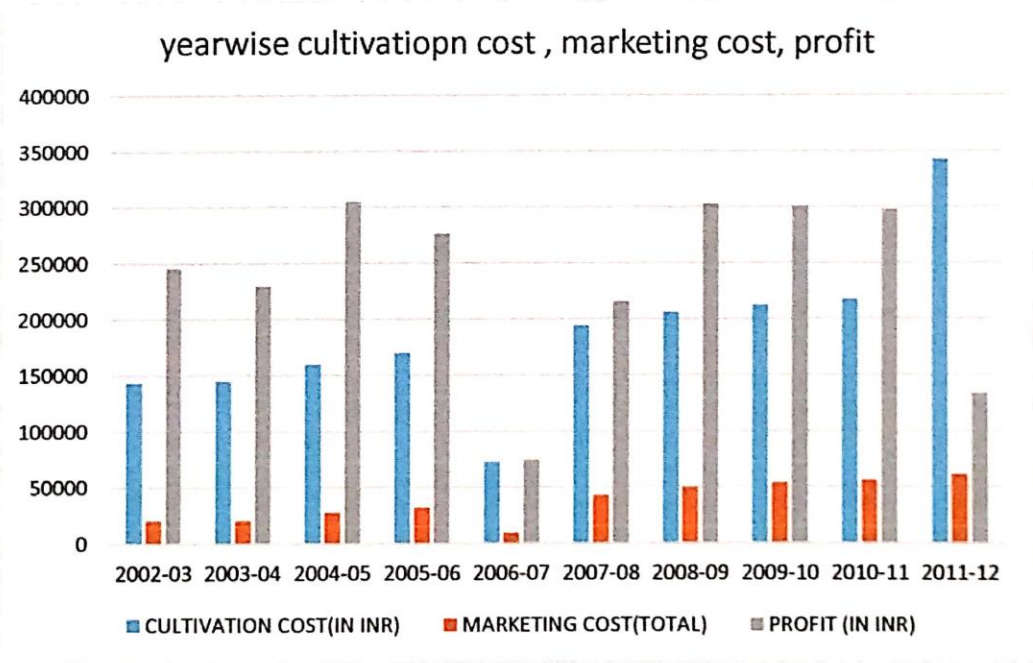
Graph:



Conclusion:

Production is increasing in Mahabaleshwar but it is stable from 2010 to 2012. And the natural disaster has been reduced to 2006-07.

Graph:



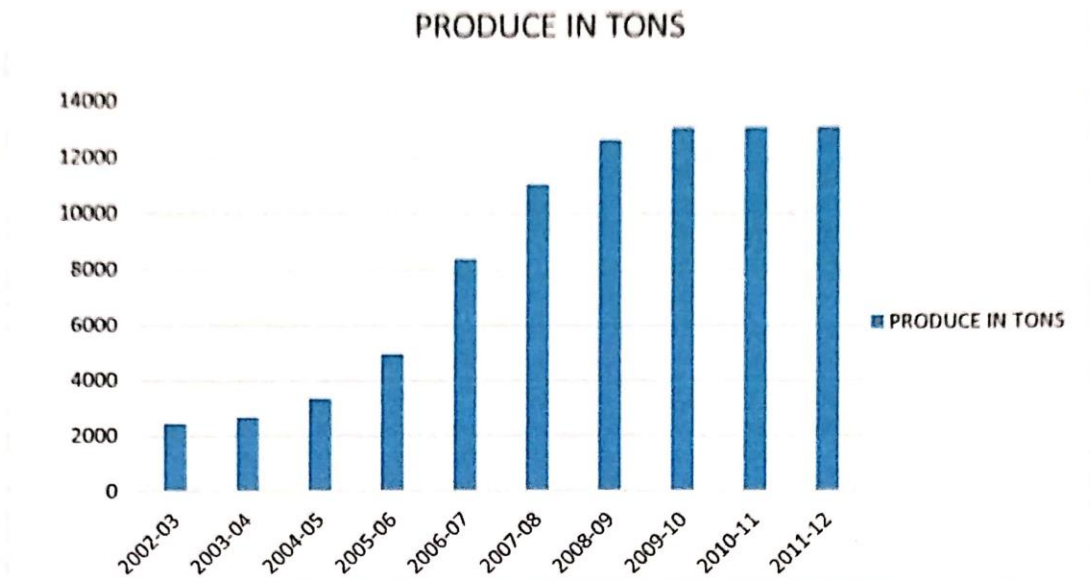
Conclusion:

The cost of cultivation in Mahabaleshwar is increasing every year. In Mahabaleshwar, marketing is increasing from 2002 to 2007 but is constant from 2008 to 2012. Profit is not constant in Mahabaleshwar every year it is increasing or otherwise decreasing and is equal to 2008 to 2010. Natural disasters have reduced the cost of cultivation, profit, and marketing cost in 2006-07.

Medha

YEAR	PRODUCTION (IN TONS)	CULTIVATION COST(IN INR)	MARKETING COST(TOTAL)	PROFIT (IN INR)
2002-03	2453.735632	35879.31034	29.2760959	1650.465
2003-04	2674.425287	39327.58621	4550.436782	106098.3
2004-05	3345.689655	50390.8046	7283.935447	161675.8
2005-06	4954.310345	60379.31034	6251.710401	271288.5
2006-07	8382.471264	110853.4483	12074.10115	387851.2
2007-08	11061.78161	160695.4023	25230.52968	605289
2008-09	12657.47126	188597.7011	31072.49787	677099.9
2009-10	13105.74713	201557.4713	34324.59262	692267.4
2010-11	13110.91954	209022.9885	35952.24786	683536.3
2011-12	13110.91954	218491.3793	38971.45069	671048.7

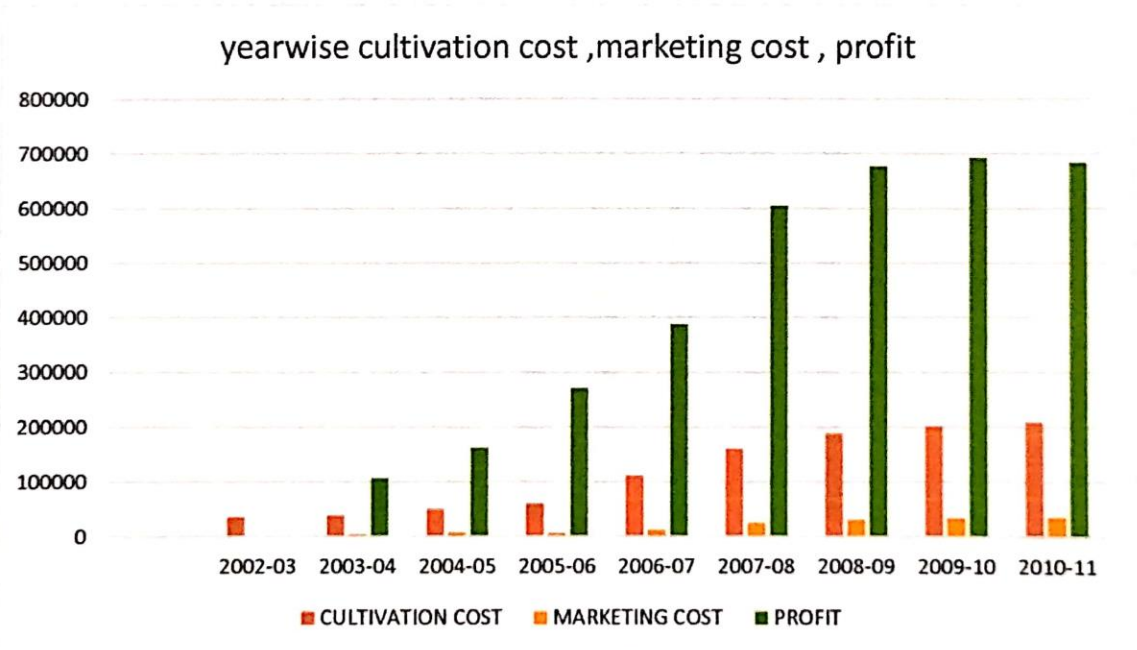
Graph:



Conclusion:

Production is increasing in medha year wise but it is constant from 2010_12.

Graph:



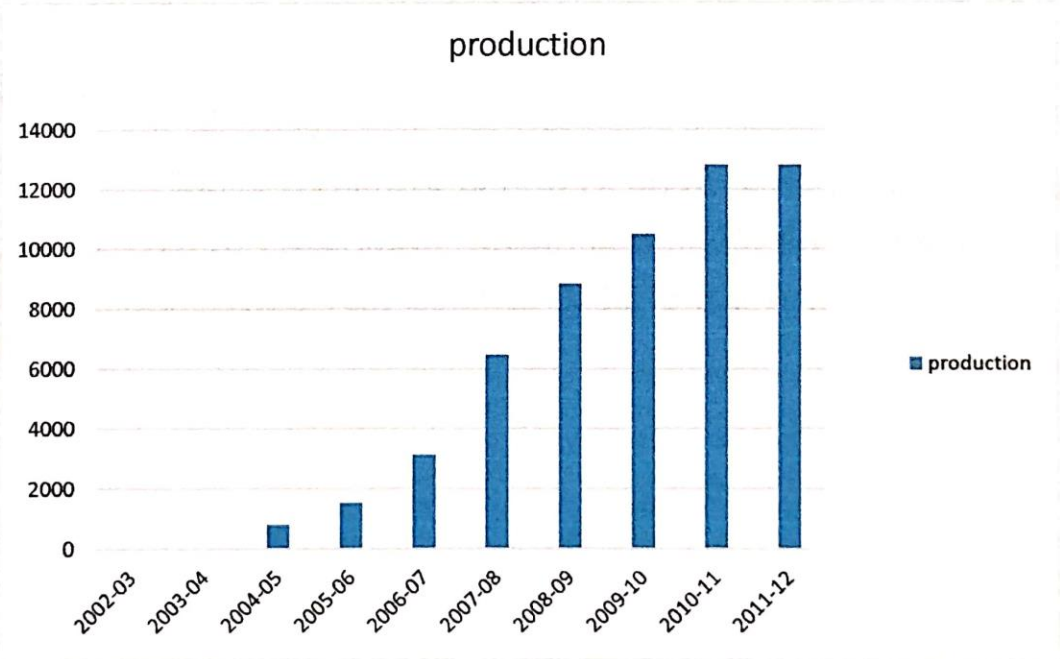
Conclusion:

Cost of cultivation, profit and marketing in medha is increasing every year.

Wai

YEAR	PRODUCTION (IN TONS)	CULTIVATION COST (IN INR)	MARKETING COST(TOTAL)	PROFIT (IN INR)
2002-03	0	0	0	0
2003-04	0	0	0	0
2004-05	784.3137255	9411.764706	980.3921569	-10392.2
2005-06	1529.411765	22058.82353	4117.647059	48333.33
2006-07	3135.294118	47647.05882	5725.490196	203823.5
2007-08	6476.470588	86745.09804	14591.80036	-95731
2008-09	8845.098039	86372.54902	12854.54545	230027.8
2009-10	10509.80392	185843.1373	31248.70588	501712.1
2010-11	12837.2549	213200	41916.16043	653005.4
2011-12	12837.2549	235862.7451	44384.40285	635125.4

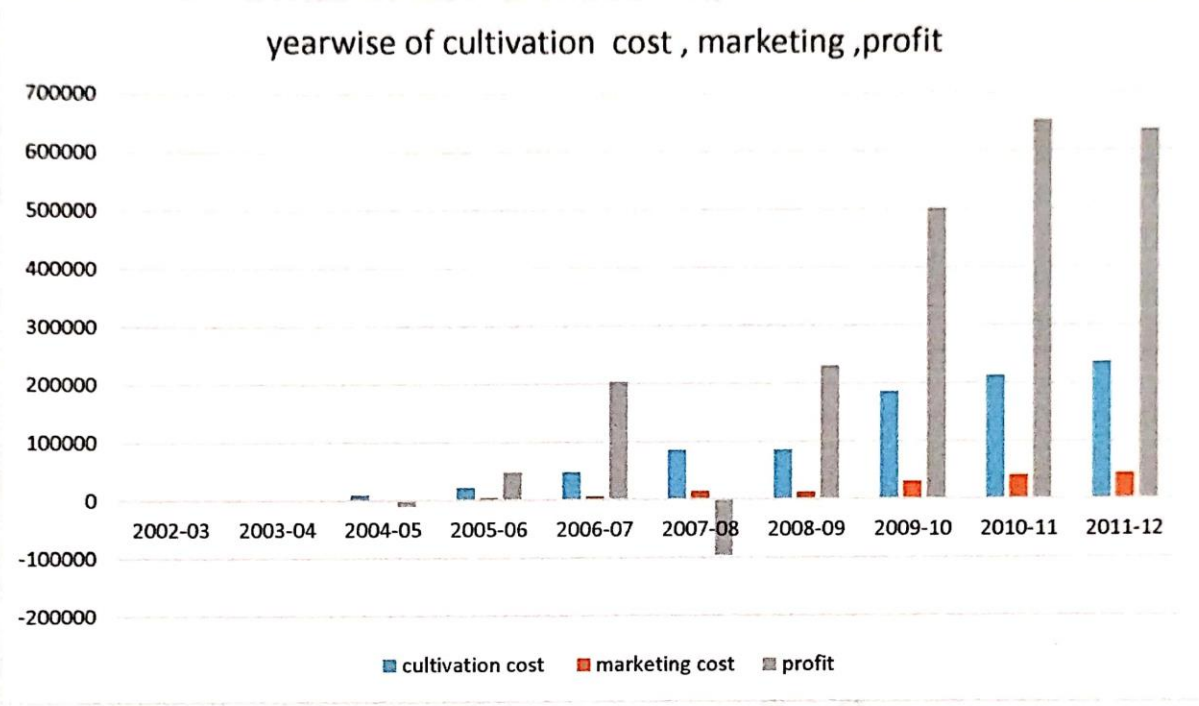
Graph:



Conclusion:

There are no production in 2002-03. Production is increasing in wai but it is constant from 2010_12.

Graph:



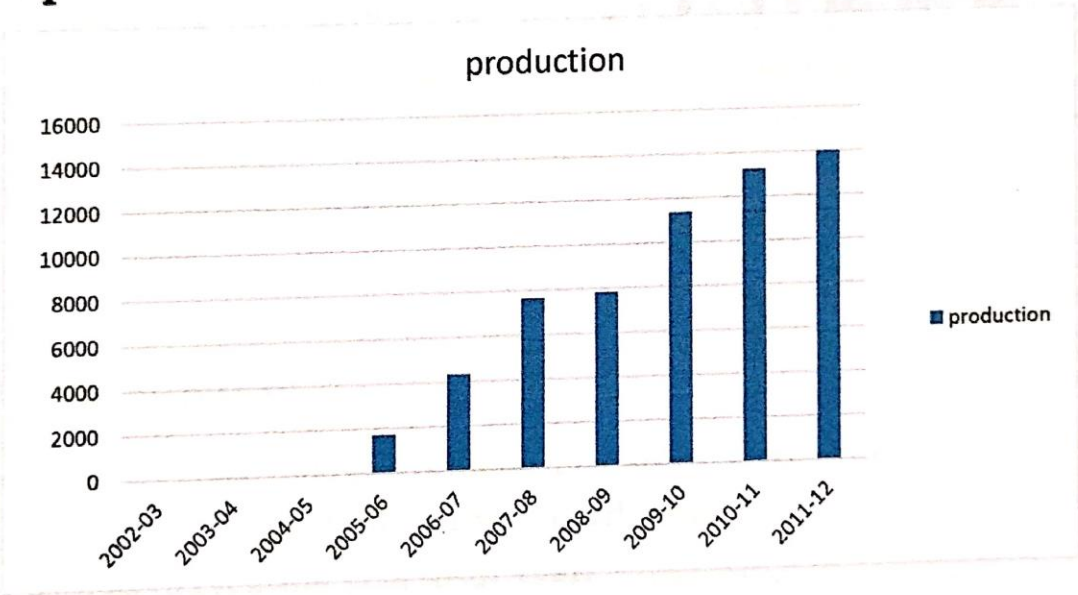
Conclusion:

2002- 2003 production of strawberry is not taken in wai. The cost of cultivation, profit, and marketing is increasing and decreasing from year 2005 to 2012, but loss in profit on 2004 and 2007.

Koregoan

YEAR	PRODUCTION (IN TONS)	CULTIVATION COST(IN INR)	MARKETING COST (TOTAL)	PROFIT (IN INR)
2002-03	0	0	0	0
2003-04	0	0	0	0
2004-05	0	0	0	0
2005-06	1723.958	26875	15632.9136	56632.7114
2006-07	4327.083	77291.66667	34489.5584	179588.567
2007-08	7656.989	142897.8495	66706.6688	520535.267
2008-09	7834.375	144682.2917	68309.8249	385684.967
2009-10	11347.92	246604.1667	104326.722	836168.07
2010-11	13262.5	311875	124794.735	1025502.14
2011-12	13994.12	263480.3922	142216.792	615126.345

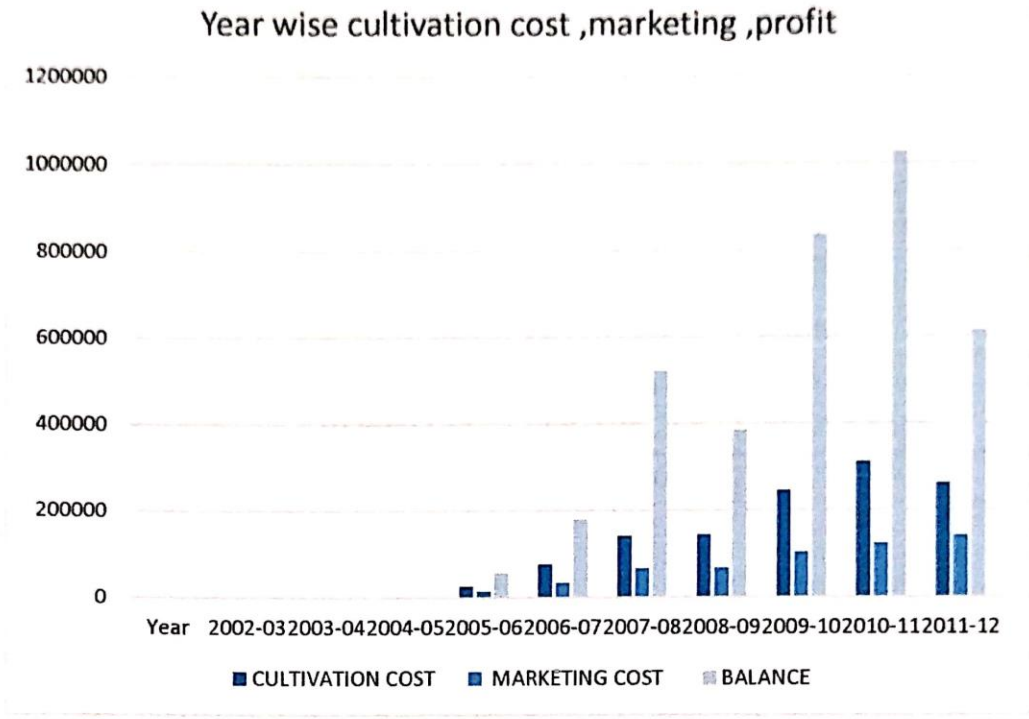
Graph:



Conclusion:

2002_2004 Production of strawberry is not taken in koregoan and from year 2005 to 2012 production is increasing.

Graph:



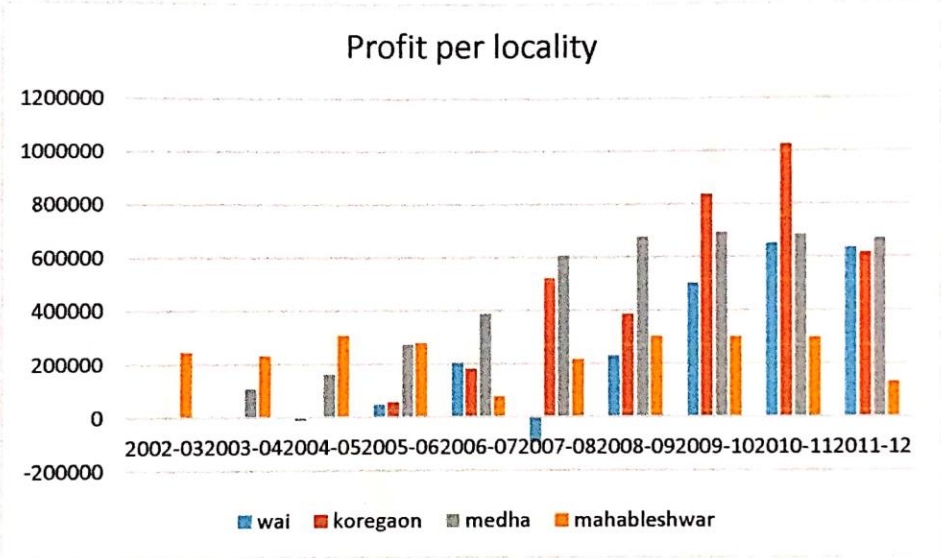
Conclusion:

2002_2004 Production of strawberry is not taken in koregoan. Cost of cultivation, marketing, profit increasing as well as decreasing year after year.

Profit as per locality

		PROFIT		
		LOCALITY		
YEAR	WAI	KOREGAON	MEDHA	MAHABLESHWAR
2002-03	0	0	1650.46528	245426.6027
2003-04	0	0	106098.299	229756.8412
2004-05	-10392.15686		161675.835	304843.5165
2005-06	48333.33333	56632.71144	271288.519	276282.734
2006-07	203823.5294	179588.5666	387851.186	74295.3019
2007-08	-95731.01604	520535.2666	605289.011	215706.5335
2008-09	230027.8075	385684.9668	677099.916	302805.6173
2009-10	501712.0784	836168.0695	692267.361	300552.2594
2010-11	653005.4082	1025502.14	683536.258	297913.8365
2011-12	635125.4011	615126.3451	671048.664	133002.3405

Graph:



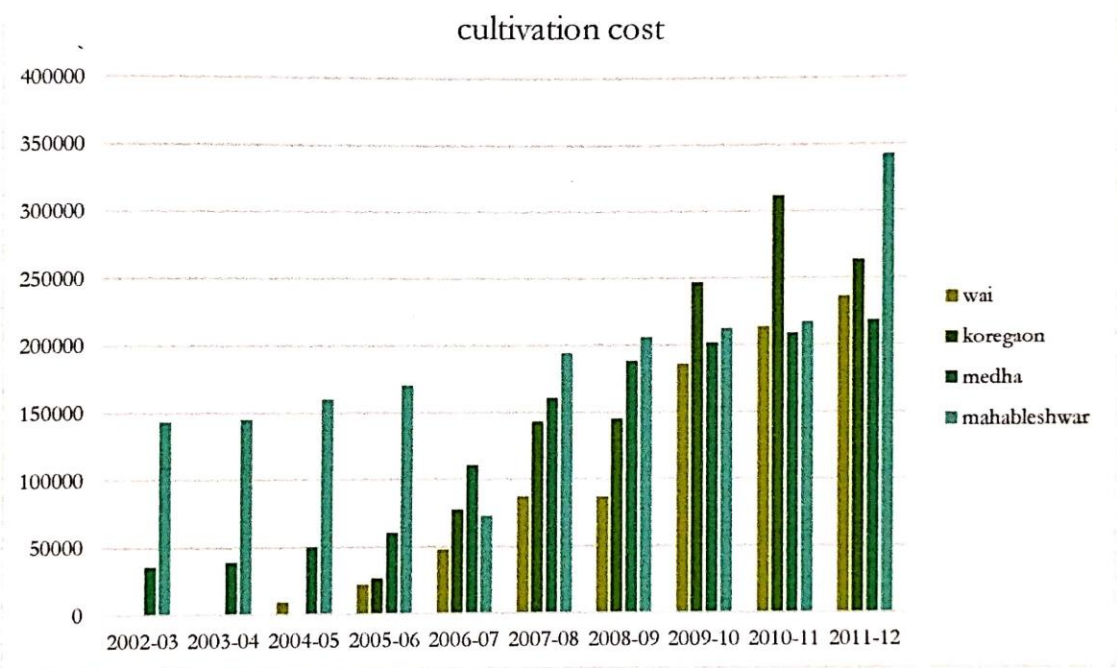
Conclusion:

Strawberries are not cultivate in koregoan and wai from 2002 to 2004.Profit of mahabaleshwar is greater than profit of medha from 2002-04.profit of medha is more than other locality from 2004 _06 but loss in profit on 2007-08 in wai, after year 2008_2012 profit is more in medha and koregaon and profit of mahabaleshwar is less.

Cultivation cost as per locality:

		CULTIVATION		
		LOCALITY		
YEAR	WAI	KOREGAON	MEDHA	MAHABLESHWR
2002-03	0	0	35879.3103	143640.561
2003-04	0	0	39327.5862	144754.3403
2004-05	9411.764706	0	50390.8046	159963.3124
2005-06	22058.82353	26875	60379.3103	170005.2411
2006-07	47647.05882	77291.66667	110853.448	72622.19227
2007-08	86745.09804	142897.8495	160695.402	194098.4951
2008-09	86372.54902	144682.2917	188597.701	206074.698
2009-10	185843.1373	246604.1667	201557.471	212382.5746
2010-11	213200	311875	209022.989	217439.0287
2011-12	235862.7451	263480.3922	218491.379	342436.2611

Graph:



Conclusion:

Strawberries are not cultivate in koregoan and wai from 2002 to 2003.cultivation cost of mahabaleshwar is more than other locality.

ANOVA FOR CULTIVATION

Hypothesis:

H_{01}: Average per acre cost of cultivation for mahabaleshwar, wai, medha & Koregaon are equal.

V/S

H_{11}: Average per acre cost of cultivation in mahabaleshwar, wai, medha & Koregaon are not equal.

H_{02}: Average per acre cost of cultivation are different year for Mahabaleshwar, wai, medha & Koregaon are equal.

V/S

H_{22}: Average per acre cost of cultivation are different year for Mahabaleshwar, wai, medha & Koregaon are not equal.

ANOVA: Two-factor without replication

SUMMARY	*Count*	*Sum*	*Average*	*Variance*
2002-03	4	179519.9	44879.97	4.62E+09
2003-04	4	184081.9	46020.48	4.68E+09
2004-05	4	219765.9	54941.47	5.38E+09
2005-06	4	279318.4	69829.59	4.75E+09
2006-07	4	308414.4	77103.59	6.76E+08
2007-08	4	584436.8	146109.2	2.02E+09
2008-09	4	625727.2	156431.8	2.85E+09
2009-10	4	846387.3	211596.8	6.63E+08
2010-11	4	951537	237884.3	2.44E+09
2011-12	4	1060271	265067.7	3E+09
WAI	10	887141.2	88714.12	8.31E+09
KOREGAON	10	1213706	121370.6	1.42E+10
MEDHA	10	1275195	127519.5	5.79E+09
MAHABLESHWR	10	1863417	186341.7	4.88E+09

Source of Variation	SS	d.f.	MS	F	P-value	F crit
Rows	2.55E+11	9	2.84E+10	17.53526	4.19122E-09	2.250131
Columns	4.96E+10	3	1.65E+10	10.20907	0.000114747	2.960351
Error	4.37E+10	27	1.62E+09			
Total	3.49E+11	39				

Result:

For rows, observed F > tab F. Therefore we reject Ho1.

For column, observed F > tab F. Therefore we reject H01.

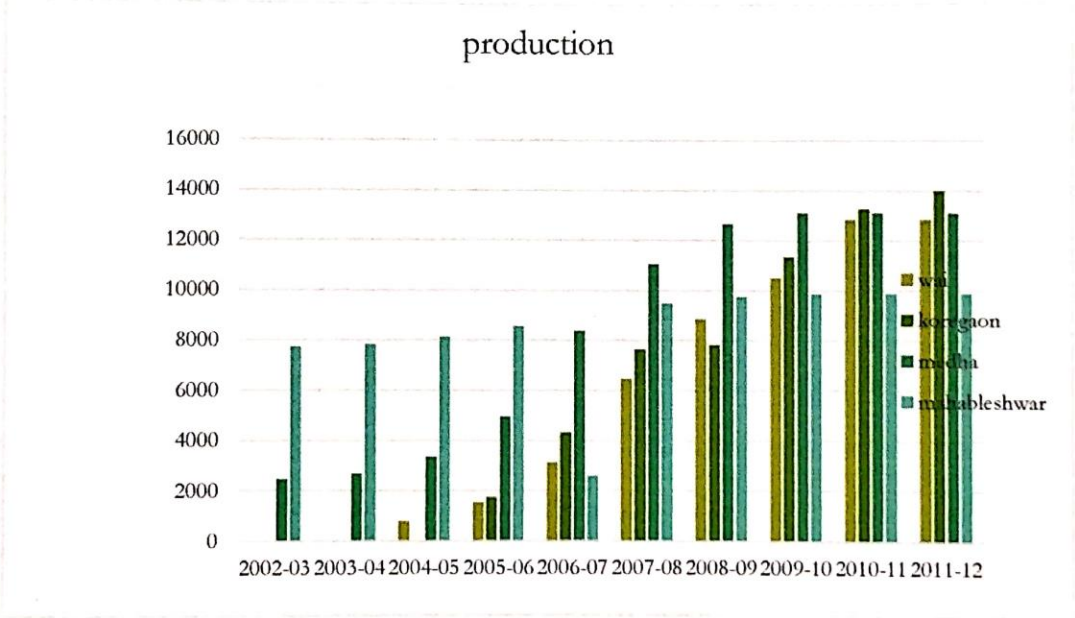
Conclusion:

1) Average per acre cost of cultivation in mahabaleshwar, wai, medha & Koregaon are not equal.
2) Average per acre cost of cultivation in mahabaleshwar is greater compare to other locality.

Production as per locality:

	LOCALITY			
YEAR	WAI	KOREGAON	MEDHA	MAHABLESHWAR
2002-03	0	0	2453.73563	7745.507637
2003-04	0	0	2674.42529	7840.848214
2004-05	784.3137255	0	3345.68966	8135.444744
2005-06	1529.411765	1723.958333	4954.31034	8553.893381
2006-07	3135.294118	4327.083333	8382.47126	2602.732704
2007-08	6476.470588	7656.989247	11061.7816	9502.321054
2008-09	8845.098039	7834.375	12657.4713	9758.086253
2009-10	10509.80392	11347.91667	13105.7471	9851.168014
2010-11	12837.2549	13262.5	13110.9195	9868.568434
2011-12	12837.2549	13994.11765	13110.9195	9868.568434

Graph:



Conclusion: In first four years mahableshwar has more production and in other year's medha and koregoan has more production.

ANOVA OF PRODUCTION

Hypothesis:

H_{01}: Average per acre cost of production for mahabaleshwar, wai, medha & Koregaon are equal.

V/S

H_{11}: Average per acre cost of production for mahabaleshwar, wai, medha & Koregaon are not equal.

H_{02}: Average per acre cost of production are different year for Mahabaleshwar, wai, medha & Koregaon are equal.

V/S

H_{22}: Average per acre cost of production are different year for Mahabaleshwar, wai, medha & Koregaon are not equal

ANOVA: Two-factor without replication

SUMMARY	*Count*	*Sum*	*Average*	*Variance*
2002-03	4	10199.24	2549.811	13335855
2003-04	4	10515.27	2628.818	13662902
2004-05	4	12265.45	3066.362	13461315
2005-06	4	16761.57	4190.393	10929275
2006-07	4	18447.58	4611.895	6838482
2007-08	4	34697.56	8674.391	4083688
2008-09	4	39095.03	9773.758	4313221
2009-10	4	44814.64	11203.66	1983139
2010-11	4	49079.24	12269.81	2593618
2011-12	4	49810.86	12452.72	3211613
wai	10	56954.9	5695.49	27624985
koregaon	10	60146.94	6014.694	31160178
medha	10	84857.47	8485.747	21914067
mahableshwar	10	83727.14	8372.714	4879370

Source of Variation	SS	d.f.	MS	F	P-value	F crit
Rows	6.14E+08	9	68200367	11.77341	2.86E-07	2.250131
Columns	66835223	3	22278408	3.845916	0.020564	2.960351
Error	1.56E+08	27	5792745			
Total	8.37E+08	39				

Result:

For rows, observed F > tab F. Therefore we reject Ho1.

For column, observed F > tab F. Therefore we reject H01.

Conclusion:

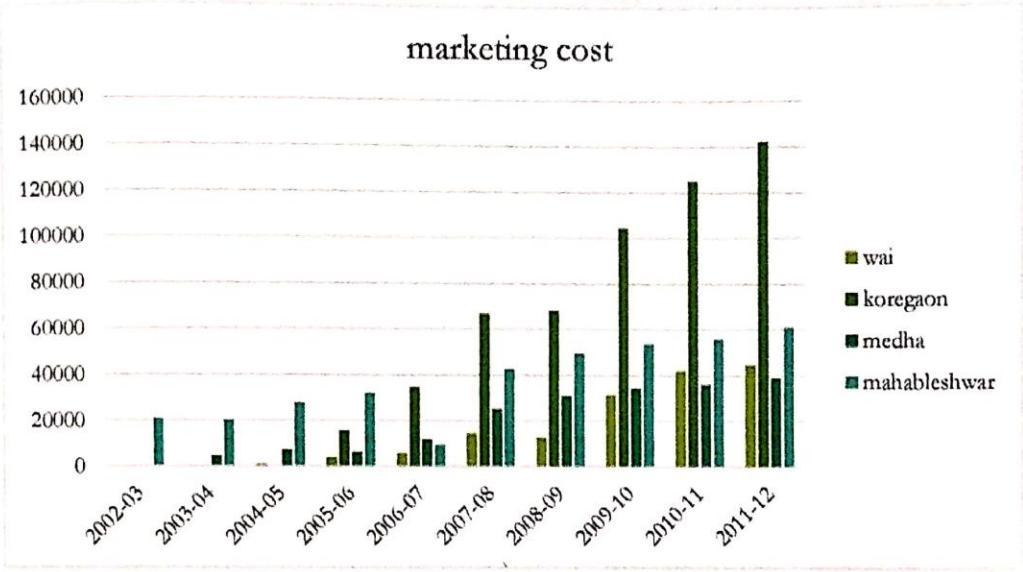
1) Average per acre cost of production are different year for mahabaleshwar, wai, medha & Koregaon are not equal.

2) Average per acre cost of production in medha is greater compare to other localities.

Marketing cost as per locality

		LOCALITY		
YEAR	WAI	KOREGAON	MEDHA	MAHABLESHWAR
2002-03	0	0	29.2760959	20646.55145
2003-04	0	0	4550.43678	20261.323
2004-05	980.3921569	0	7283.93545	27815.16878
2005-06	4117.647059	15632.91356	6251.7104	31944.0854
2006-07	5725.490196	34489.5584	12074.1011	9361.132666
2007-08	14591.80036	66706.66884	25230.5297	42730.97876
2008-09	12854.54545	68309.8249	31072.4979	49638.50771
2009-10	31248.70588	104326.7221	34324.5926	53678.32861
2010-11	41916.16043	124794.7352	35952.2479	55846.15355
2011-12	44384.40285	142216.7922	38971.4507	61009.69511

Graph:



Conclusion:

From year 2002-05 mahableshwar has more marketing cost than other localities and other year koregoan has more marketing cost.

ANOVA OF MARKETING

Hypothesis:

H_{01}: Average per acre cost of marketing for mahabaleshwar, wai, medha & Koregaon are equal.

V/S

H_{11}: Average per acre cost of marketing for mahabaleshwar, wai, medha & Koregaon are not equal.

H_{02}: Average per acre cost of marketing are different year for Mahabaleshwar, wai, medha & Koregaon are equal.

V/S

H_{22}: Average per acre cost of marketing are different year for Mahabaleshwar, wai, medha & Koregaon are not equal.

ANOVA : Two-Factor Without Replication

SUMMARY	Count	Sum	Average	Variance
2002-03	4	20675.83	5168.957	1.06E+08
2003-04	4	24811.76	6202.94	92440610
2004-05	4	36079.5	9019.874	1.67E+08
2005-06	4	57946.36	14486.59	1.6E+08
2006-07	4	61650.28	15412.57	1.69E+08
2007-08	4	149260	37314.99	5.19E+08
2008-09	4	161875.4	40468.84	5.7E+08
2009-10	4	223578.3	55894.59	1.14E+09
2010-11	4	258509.3	64627.32	1.68E+09
2011-12	4	286582.3	71645.59	2.3E+09
WAI	10	155819.1	15581.91	3E+08
KOREGAON	10	556477.2	55647.72	2.92E+09
MEDHA	10	195740.8	19574.08	2.24E+08
MAHABLESHWAR	10	372931.9	37293.19	3.14E+08

Source of Variation	SS	d.f.	MS	F	P-value	F crit
Rows	2.32E+10	9	2.58E+09	6.567443	6.3E-05	2.250131
Columns	1.01E+10	3	3.37E+09	8.583584	0.000365	2.960351
Error	1.06E+10	27	3.93E+08			
Total	4.39E+10	39				

Result:

For rows, observed F > tab F. Therefore we reject Ho1.

For column, observed F > tab F. Therefore we reject H01.

Conclusion:

1) Average per acre cost of marketing are different year for mahabaleshwar, wai, medha & Koregaon are not equal.
2) Average per acre cost of marketing in koregoan is greater compare to other locality.

T-TEST

Profit:

t-Test: Two-Sample Assuming Unequal Variances

Hypothesis:

Ho: Averages profit for mahableshwar ar
&Wai are equal.

H1: Averages (profit for mahableshwar a
& Wai are not equal.

	mahableshwar	*wai*
Mean	238058.5583	216590.439
Variance	6231072170	7.983E+10
Observations	10	10
Hypothesized Mean Difference	0	
df	10	
t Stat	0.231415055	
P(T<=t) one-tail	0.410829388	
t Critical one-tail	1.812461123	
P(T<=t) two-tail	0.821658775	
t Critical two-tail	2.228138852	

Result:

Here P value is greater than 0.05. Therefore we accept Ho.

Conclusion:

The averages (profit) of mahableshwar and wai are nearly equal.

Hypothesis :

Ho: Averages profit for mahableshwar and koregaon are equal.
H1: Averages profit for mahableshwar and koregaon are not equal.
t-Test: Two-Sample Assuming Unequal Variance

	mahableshwar	*koregaon*
Mean	238058.5583	361923.8
Variance	6231072170	1.42E+11
Observations	10	10
Hypothesized Mean Difference	0	
d.f.	10	
t Stat	-1.018712088	
P(T<=t) one-tail	0.166176294	
t Critical one-tail	1.812461123	
P(T<=t) two-tail	0.332352588	
t Critical two-tail	2.228138852	

Result:

Here p-value is greater than 0.05 .Therefore we accept Ho.

Conclusion: The averages (profit) of mahableshwar and koregaon are equal.

Hypothesis :

Ho: Averages profit for mahableshwar and medha are equal.
H1: Averages profit for mahableshwar and medha are not equal.

t-Test: Two-Sample Assuming Unequal Variance

	mahableshwar	***medha***
Mean	238058.5583	425780.6
Variance	6231072170	7.45E+10
Observations	10	10
Hypothesized Mean Difference	0	
df	10	
t Stat	-2.089795814	
P(T<=t) one-tail	0.031575347	
t Critical one-tail	1.812461123	
P(T<=t) two-tail	0.063150694	
t Critical two-tail	2.228138852	

Result:

Here P- value is greater than 0.05. Therefore we accept Ho.

Conclusion:

The averages (profit) of mahableshwar and medha are equal.

Production:

Hypothesis:

Ho: Averages production of mahableshwar and wai are equal.

H1: Averages production of mahableshwar and wai are not equal.

t-Test: Two-Sample Assuming Unequal Variances		
	mahableshwar	**wai**
Mean	186341.6704	97357.2745
Variance	4878662611	1.631E+10
Observations	10	10
Hypothesized Mean Difference	0	
df	14	
t Stat	1.93315722	
P(T<=t) one-tail	0.036850197	
t Critical one-tail	1.761310136	
P(T<=t) two-tail	0.073700394	
t Critical two-tail	2.144786688	

Result:

Here P-value is greater than 0.05. Therefore we accept Ho.

Conclusion:

The average (production) of mahableshwar and wai are equal.

Hypothesis:

Ho: The averages (production) of mahableshwar and koregaon are equal.

H1: The averages (production) of mahableshwar and koregaon are not equal.

t-Test: Two-Sample Assuming Unequal Variances		
	mahableshwar	**koregaon**
Mean	186341.7	121370.6
Variance	4.88E+09	1.42E+10
Observations	10	10
Hypothesized Mean Difference	0	
df	15	
t Stat	1.48555	
P(T<=t) one-tail	0.079055	
t Critical one-tail	1.75305	
P(T<=t) two-tail	0.158111	
t Critical two-tail	2.13145	

Result:

Here P- value is greater than 0.05. Therefore we accept Ho.

Conclusion:

The averages (production) of mahableshwar and koregaon are equal.

Hypothesis:

Ho: Averages production of mahableshwar and medha are equal.

H1: Averages production of mahableshwar and medha are not equal.

t-Test: Two-Sample Assuming Unequal Variances		
	mahableshwar	**medha**
Mean	186341.7	127519.5
Variance	4.88E+09	5.79E+09
Observations	10	10
Hypothesized Mean Difference	0	
df	18	
t Stat	1.800587	
P(T<=t) one-tail	0.044274	
t Critical one-tail	1.734064	
P(T<=t) two-tail	0.088548	
t Critical two-tail	2.100922	

Result:

Here P-value is greater than 0.05.Therefore we accept Ho.

Conclusion:

The average (production) of mahableshwar and medha are equal.

Cultivation:

Hypothesis:

Ho: The average (cultivation) of mahableshwar and wai are equal.

H1: The average (cultivation) of mahableshwar and wai are not equal

	mahableshwar	**wai**
Mean	186341.6704	97357.2745
Variance	4878662611	1.631E+10
Observations	10	10
Hypothesized Mean Difference	0	
df	14	
t Stat	1.93315722	
P(T<=t) one-tail	0.036850197	
t Critical one-tail	1.761310136	
P(T<=t) two-tail	0.073700394	
t Critical two-tail	2.144786688	

Result:

Here P-value is greater than 0.05. Hence we accept Ho.

Conclusion:

The average (cultivation) of mahableshwar and Wai are equal.

Hypothesis:

Ho: The average (cultivation) of mahableshwar and Koregaon are equal.

H1: The average (cultivation) of mahableshwar and koregaon are not equal

	mahableshwar	**koregaon**
Mean	186341.7	121370.6
Variance	4.88E+09	1.42E+10
Observations	10	10
Hypothesized Mean Difference	0	
df	15	
t Stat	1.48555	
P(T<=t) one-tail	0.079055	
t Critical one-tail	1.75305	
P(T<=t) two-tail	0.158111	
t Critical two-tail	2.13145	

Result:

Here P-value is greater than 0.05. Hence we accept Ho.

Conclusion:

The average (cultivation) of mahableshwar and koregaon are equal.

Hypothesis:

Ho: The average (cultivation) of mahableshwar and medha are equal.H1: The average (cultivation) of mahableshwar and medha are not equal.

	mahableshwar	medha
Mean	186341.7	127519.5
Variance	4.88E+09	5.79E+09
Observations	10	10
Hypothesized Mean Difference	0	
df	18	
t Stat	1.800587	
P(T<=t) one-tail	0.044274	
t Critical one-tail	1.734064	
P(T<=t) two-tail	0.088548	
t Critical two-tail	2.100922	

Result:

Here P-value is greater than 0.05. Hence we accept Ho.

Conclusion:

The average (cultivation) of mahableshwar and medha are equal.

Ratio of marketing cost with production:

		MARKETING/PRODUCTION		
		LOCALITY		
YEAR	WAI	KOREGAON	MEDHA	MAHABLESHWAR
2002-03	0	0	0.01193123	2.665616305
2003-04	0	0	1.70146341	2.584072852
2004-05	1.25	0	2.17711031	3.419010227
2005-06	2.692307692	9.068034454	1.26187299	3.734449797
2006-07	1.826141338	7.970624955	1.44039875	3.596655411
2007-08	2.253048193	8.711866594	2.28087397	4.496899075
2008-09	1.453295984	8.719243705	2.45487406	5.08691012
2009-10	2.973291045	9.19346918	2.6190489	5.448930373
2010-11	3.265196551	9.409593606	2.74216067	5.658992378

T-Test

Hypothesis:

Ho: Ratio of marketing cost and production for mahableshwar and wai are equal.

H1: Ratio of marketing cost and production for mahableshwar and wai are not equal.

t-Test: Two-Sample Assuming Unequal Variances		
	mahableshwar	**wai**
Mean	4.287375998	1.917075
Variance	1.619152129	1.559822
Observations	10	10
Hypothesized Mean Difference	0	
df	18	
t Stat	4.2039737	
P(T<=t) one-tail	0.000266744	
t Critical one-tail	1.734063607	
P(T<=t) two-tail	0.000533489	
t Critical two-tail	2.10092204	

Result:

Here P-value is less than 0.05.Therefore we reject Ho.

Conclusion:

Ratio of marketing cost and production of mahableshwar and wai are not equal.

Hypothesis:

Ho: Ratio of marketing cost and production for mahableshwar and koregaon are equal.

H1: Ratio of marketing cost and production for mahableshwar and koregaon are not equal

t-Test: Two-Sample Assuming Unequal Variances

	mahableshwar	koregaon
Mean	4.287375998	6.323544
Variance	1.619152129	19.34987
Observations	10	10
Hypothesized Mean Difference	0	
df	10	
t Stat	-1.406127315	
P(T<=t) one-tail	0.094995304	
t Critical one-tail	1.812461123	
P(T<=t) two-tail	0.189990609	
t Critical two-tail	2.228138852	

Result:

Here P-value is greater than 0.05.Therefore we accept Ho.

Conclusion:

Ratio of marketing cost and production for mahableshwar and koregaon are equal.

Hypothesis:

Ho: Ratio of marketing cost and production for mahableshwar and medha are equal.

H1: Ratio of marketing cost and production for mahableshwar and medha are not equal.

t-Test: Two-Sample Assuming Unequal Variances

	mahableshwar	medha
Mean	4.287375998	1.966218
Variance	1.619152129	0.787217
Observations	10	10
Hypothesized Mean Difference	0	
df	16	
t Stat	4.731770464	
P(T<=t) one-tail	0.000112841	
t Critical one-tail	1.745883676	
P(T<=t) two-tail	0.000225682	
t Critical two-tail	2.119905299	

Result:

Here P-value is less than 0.05.Therefore we reject Ho.

Conclusion:

Ratio of marketing cost and production for mahableshwar and medha are not equal.

REFRENCE

- www.google com
- Statistical methods of II from Niraliprakashan.