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**CHAPTER - V**

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**WORKING AND IMPACT OF  
REGULATION IN GADHINGLAJ  
MARKET.**

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Working and Impact of Regulation  
in Gadhinglaj Market.

Application of the Act :

The Gadhinglaj Market Committee was established according to the Kolhapur Agricultural produced Market Act No.8 (1948). The Market Committee started its working on 2nd of November'48.

<u>S.No.</u>	<u>Commodities</u>	<u>Regulated - Government notification Number and Date.</u>
1.	Jaggary	Kolhapur Co-operative Publication
2.	Groundnut	No. M.K. 9 (1) D 14 dated -
3.	Chillis	14-11-1947.
4.	Rice	The Bombay Government Development
5.	Paddy	notification No.PAMA - 6255 dated
6.	Cotton	28-7-1955.
7.	Bajara	The Director of agriculture & Trade.
8.	Mung	Maharashtra State Pune Notification
9.	Udid	No. CAMR - R 12 dated 13-11-1973.
10.	Tobacco	The Director of agriculture Trade Maharashtra State, Pune notification No. CAMR - R 12 -76 dated - 21-10-1976.

Formerly the market committee at Gadhinglaj regulated only three commodities namely jaggary, Groundnut and Chillis under the Kolhapur co-operative publication no MK 9 (1) D14 dated 15-11-47. Afterwards because of the increasing arrivals of rice, paddy and cotton the market committee at Gadhinglaj regulated these three commodities under the Bombay Government Development notification No. PAMA -6255 dated 28.7.1955 with the successful regulating of the 6 commodities, the market committee marched towards regulating another four more commodities and now the market committee at Gadhinglaj has so far regulated 10 commodities with a view to control more area and according to the provisions of Act the marketing committee was successful in establishing secondary markets at the following places : -



- 1) Ajara - Notification No. PMA 39 dated 26th November '64.
- 2) Halkarni - Notification No. P.M.A. 39 dated 12th Dec '64.
- 3) Arjunnagar - Notification No. CAMR-R- No. 12 Gadhinglaj 15 dated 5th February, 1976.

Progress of issue of Licence :

When the market committee started its working, it started its activity regarding the issue of licences because according to the act the commission Agents, weighman, Hamal, Truck owners and helpers of commission agents were required to secure the licences from committee. Initially their number was small. Later on their number increased rapidly, especially during the last decade.

Table No. 5.

Issue of the licence by the market committee,  
Gadhinglaj.

Sr.No.	Categories of licence fee.	Rate of licence	1976 to 1977	1977 to 1978	1978 to 1979	1979 to 1980
1.	Commission Agent.	100	67	61	63	62
2.	Wholesale trader A Class.	100	97	108	105	106
3.	Broker	100	-	-	-	-
4.	Grader Class A	50	9	13	11	15
5.	Trader Class B (Weighman )	40	220	219	225	229
6.	Trader Class C	25	-	17	65	65
7.	Trader Class D	10	-	522	477	569

Sr.No.	Categories of licence fee.	Rate of licence	1976 to 1977	1977 to 1978	1978 to 1979	1979 to 1980
8.	Grader B Class	25	-	71	23	16
9.	Weighman	10	16	15	15	15
10.	Vakharwala	15	-	-	-	-
11.	Helper of commission.- Agent.	5	151	148	115	121
12.	Hamal	3	37	74	88	78
13.	Bullockcart owner.	5	14	11	15	9
14.	Owner of truck	5	22	15	69	30

It is evident from the table that the licence fee charged from the commission agent is at a rate of Rs.100/- per annum.

For the weighman fee is Rs.10/- per year. In case of cartman, truckowner, and helper of commission agent, it is charged at the rate of Rs.5/- per annum and in case of Hamal it is charged at the rate of Rs.3/- per annum.

It is interesting to note that whenever market arrivals increases the number of licences issued ~~to~~ also increases and the number decreases whenever the market arrivals decreases.

The market committee is empowered to cancel the licence of market functionaries as per the provisions of the Act. However, the inevitable point in case of Gadhinglaj market

Committee is that ever since the establishment of market committee, there is not a single case in which the licence has been cancelled. This indicates the complete absence of the defaulters in case of the licence holders.

Financial Operations of the Market Committee :

Following table shows the total revenue from various sources of the market committee, Gadhinglaj ( Rs..000 )

Sr. No.	Years	Market fee (Thousand of Rs.)	Licence fee (Thousand of Rs.)	Other	Total
1.	1972/73	62	23	12	97
2.	1973/74	66	25	13	104
3.	1974/75	80	25	15	120
4.	1975/76	70	25	14	109
5.	1976/77	141	36	4	181
6.	1977/78	134	34	23	191
7.	1978/79	159	35	75	269
8.	1979/80	166	36	23	225

The licence fee and the market fee are two main sources of incomes of the market committee. Though market committee is institution with regulatory and supervisory duties, it can impose the fees to meet its expenditure.

Market Fees :

The share of market fee in total income was maximum i.e. 73% during 1979-80 which was just 64% during 1972-73.

The second main income source of market committee is licence fee. The total percentage of income recieved from this source in 1972-73 was 24% which came down to 16% in 1979-80. Thus it is clear that because of the increase in arrivals druing the period of 1972 to 1980, there is increase in the market fees but the licences issued were less as compared to the arrivals so the percentage of income from the licence fee has reduced to just 16% in 1979-80.

The other sorces of income includes warehouse registration fee, interest and dividnt, received, income from sale of printed booklets, etc.

Rs Expenditure :-

The following table shows the total expenditure on various items of the market committee Gadhinglaj .(in Rs.000 )

Year	Administration expensens	Maintainance	Other	Total
1976-77	81	12	16	109
1977-78	79	15	70	164
1978-79	101	13	78	192
1979-80	103	17	88	208

The administration expenses include the expenses on salaries and wages. The administrative expenditure shows a tremendous rise from 1976 to 80 due to the increase in the salaries and staff. The maintainance expenditure has also increased due to the increase in facilities given by market -

committee. During 1976-77 the percentage of administrative expenses to the total expenses of market committee was 73% but it reduced to just 50% in 1979-80. The expenses on maintenance was 11% of the total expenses of market committee in 1976-77 which reduced to 8% during 1979-80.

4. Arrivals :

Table on next page shows the market arrivals of - groundnut, Chilli and Jaggary.



TABLE

JAGGARY ARRIVALS ( IN QUINTAL )

MONTH	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82
Oct.	2496	1817	1568	3391	4113	3353	1743	1284	12635	7106
Nov.	4183	4648	10749	15517	7021	7915	10895	426	9367	9468
Dec.	20670	20119	28601	21779	35248	27920	22045	8931	15668	18732
Jan .	67673	53882	60589	41280	63352	31736	37465	23567	33377	37054
Feb.	60697	61327	50662	48584	58469	30923	42714	48275	26683	29467
March.	26474	28171	37556	29793	36953	43416	60174	25827	25576	23660
April.	11375	12257	17245	19049	15142	18803	44787	5233	15913	15550
May.	10726	7232	7477	11479	12068	14938	13480	3088	6615	12282
June.	4086	4063	2964	5001	4523	10295	3543	2796	2372	8956
July .	1307	1055	5757	3987	2127	4015	2023	2202	4306	16212
Aug .	2030	687	4644	2289	1463	15321	2291	2983	4199	8181
Sept.	3739	1556	688	2907	1472	1779	2283	2309	1649	4277
Total	215454	196814	228500	204906	241971	210412	243463	126921	139410	190945

TABLE - 1.

GROUNDNUT ARRIVALS ( IN QUINTAL )

MONTH	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82
Oct.	379	500	775	706	2391	160	797	308	141	7106
Nov.	17979	7148	5732	2075	7525	3928	8122	1734	5699	9468
Dec.	39777	20631	18410	8304	14805	11402	24326	11933	11894	19732
Jan.	35184	17171	16030	9845	18469	10737	18807	9158	9086	37054
Feb.	13933	11061	5207	5091	9590	4273	6000	6418	3682	29467
Mar.	3139	10656	4345	5065	2885	6541	6756	3448	786	23660
Apr.	3118	5201	2873	8027	2156	2072	2394	1839	1377	15550
May.	3045	4079	2596	4993	2051	2124	1925	1124	606	11282
June.	6775	5091	3187	6967	1879	3340	2536	1722	1713	8956
July.	2070	2560	4018	2962	875	2915	1962	1068	799	16212
Augu.	826	991	621	1328	203	2343	3398	187	196	8181
Sept.	45	112	4633	119	87	1195	69	40	57	-
Total:	126270	85209	68427	60492	63216	51030	74112	38979	37036	4277
				55482						

MONTH	1980-81		1981-82	
	Bag	Boad	Bag	Boad
	02	-	15837	-
Oct.	13	-	21698	-
Nov.	70	-	7558	-
Dec.	7	-	2893	-
Jan.	28	-	1053	-
Feb.	34	-	419	-
Mar.	30	-	261	-
April.	92	-	90	-
May	61	-	80	-
June.	74	-	87	-
July.	10	-	12	-
Augu.	-	-	-	-
Sept.				
Total:	769	-	4081	-

It is clear that the share of the arrivals of Jaggary in the total arrival of the market were 90% during December to May which is a season of Jaggary and remaining 10% of the total arrivals are during the months of Oct, Nov, and July, August, September. In these months arrivals are low due to offseason. The table shows that the arrivals in the year 1979-80 and 1980-81 were low which is the result of the starting of the sugar factory at Harali and the rates given to the farmers for sugarcane were higher. So majority of the farmers started giving sugarcane to the factory than producing jaggary.

During the season i.e. from November to March the total arrivals of Groundnut were 85% of the total arrivals of market and remaining 15% arrivals were during the months of October, April to September. During the year 1979-80 the arrivals of Groundnut were very low because the farmers concentrate their attention on the production of sugercane and also due to heavy rains which has adverse effects on production.

The season for the Chilli starts from October to March. 80% of the total arrivals of market are in these months and remaining 20% are during the months of April to September.

JAGGERY SALES ( IN QUINTAL )

MONTH	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80
Oct.	4917	8875	2433	4680	5235	8820	2916	1377
Nov.	5650	5364	9289	13935	6710	10324	8734	388
Dec.	13762	14417	20402	17353	28561	29100	17305	7635
Jan.	42331	33795	41873	29126	55050	22615	27544	19617
Feb.	62444	49754	52350	41453	45436	23045	40121	39743
Mar.	32152	43062	46491	30344	36670	36001	56259	29737
April.	17068	16617	26542	30326	24227	11569	47922	9457
May.	16252	13872	10789	11527	13277	22478	28845	5594
June.	6360	8819	5377	12611	7606	20421	6156	4190
July.	4354	5668	3603	3858	4175	16158	2783	1944
Augu.	2385	2374	7119	2890	4061	18086	3195	4016
Sept.	6164	1702	2728	4746	4378	5848	2936	3314
<b>Total :</b>	<b>215119</b>	<b>199319</b>	<b>228996</b>	<b>202849</b>	<b>235396</b>	<b>218465</b>	<b>244716</b>	<b>127012</b>

TABLE - 2

GROUNDNUT SALES.

MONTH	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82
Octo.	595	374	756	3207	1823	98	1393	218	11335	8781
Nov.	10998	5274	3047	1216	6350	3324	5075	1536	9271	9745
Dec.	39065	15989	15410	7152	13824	9974	23291	9697	11129	16022
Jan.	34899	16884	14519	9076	19027	8842	17849	8337	21997	24503
Feb.	17874	14084	6249	5608	10429	5254	8580	7484	26271	20403
Mar.	3831	11836	5027	5039	3546	6343	4942	3026	22996	22652
April.	4256	5974	5207	8411	2666	2214	2812	2440	20727	18995 <sup>74</sup>
May.	3764	3484	3073	5309	1758	2501	1776	1033	6064	13866 <sup>74</sup>
June.	7403	5737	3895	6684	1990	3165	2615	1718	6883	12227
July.	2361	3230	2635	3824	1173	3194	2770	1524	6715	21568
Augu.	1185	1888	4430	2324	338	2952	675	657	6631	10792
Sept.	271	344	1819	186	372	2265	223	772	4739	8379
<b>Total</b>	<b>126502</b>	<b>85008</b>	<b>66057</b>	<b>58057</b>	<b>63317</b>	<b>51126</b>	<b>75011</b>	<b>38742</b>		

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MONTH	1972-	1980-81		1981-82	
		baod	baq	baod	baq
Oct.	455	-	16602	-	15686
Nov.	881	-	17913	-	21895
Dec.	815	-	7470	-	7557
Jan.	143	-	2297	-	2894
Feb.	55	-	828	-	1053
Mar.	26	-	484	-	419
Apr.	42	-	680	-	261
May.	23	-	192	-	190
June.	18	-	61	-	80
July.	19	-	74	-	87
Augu.	11	-	10	-	12
Sept.	4	-	769	-	-
<hr/>		<hr/>			
3492 3		4081			
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MONTH	1972-		1979-80				1980-81		
	MINI	MAX	MD	MINI	MAX	MD	MINI	MAX	MD
	Oct.	133	210	175	190	284	225	300	442
Nov.	115	223	150	245	290	265	190	545	250
Dec.	135	198	115	162	295	225	200	300	230
Jan.	110	206	85	210	291	235	200	305	210
Feb.	283	180	90	250	300	290	170	292	200
Mar.	120	229	120	235	240	285	170	281	180
Apr.	170	220	125	125	240	280	140	286	190
May.	90	25	125	125	290	364	330	140	185
June.	90	26	175	300	430	390	135	309	180
July.	110	25	220	350	490	460	139	325	200
Augu.	100	24	225	320	490	375	140	323	200
Sept.	235	15	260	350	540	450	125	280	235
	90	20	125	162	540	265	125	442	180



MONTH	1-79		1979-80			1980-81			1981-82			
	Min	Max.	Md.	Mn.	Mx.	Md.	Mn.	Mx.	Md.	Mn.	Mx.	Md.
Oct.	120	15	195	190	360	340	260	332	300	300	435	525
Nov.	96	40	220	221	315	390	300	393	380	300	431	375
Dece.	157	43	220	257	329	315	341	422	375	355	433	400
Jan.	160	42	225	255	318	395	375	440	400	420	459	440
Feb.	220	35	230	290	354	335	400	476	450	420	450	435
March.	240	68	260	305	350	345	405	448	420	351	441	430
April.	246	70	260	310	351	345	425	475	450	370	433	410
May	276	87	275	320	354	345	425	462	440	400	430	400
June.	300	75	280	280	352	345	450	485	460	410	455	425
July.	300	37	300	341	400	390	440	475	455	400	447	410
Augu.	316	77	355	345	360	355	450	500	485	400	460	450
Sept.	225	65	360	322	360	350	410	425	415	390	420	400
	96	377	260	190	400	345	260	500	420	300	430	415

It is clear from the table that the mode price during the months of October and November was high due to offseason but after December the season of jaggary started. There is a rise in arrivals. So the mode price came down. The prices were low up to May. Then due to offseason, i.e. from June to September the mode prices increased. The mode price of jaggary came down during the year 1978-79 because of lower arrivals.

What is true in case of jaggary is also true in case of Chilli and Groundnut.



Dispersal of Produce :-

This market exported groundnut unshelled to Bombay. Chilli was exported to Bombay, Goa and etc. Gur was exported to Kolhapur, The quantity Chilli was exported to other parts is considerable compared to other commodities. There is great demand for Gur from Goa Market. During last decade there is a remarkable increase in demand for Gur from Goa Market. Regarding groundnut the position is satisfactory. Now the oil is supplied to a large extent even in some parts of Madras also.

5. Gradition :

The Market committee introduced gradation in the marketing of groundnut from 1960-67 onwards. It appointed its own grader for the said purpose. Following table gives the details of the same. Gradation of groundnut in Gadhinglaj -  
- Market since 1972-73 onwards.

Year	Market Arrivals.	Quantity Graded.	Price
1972-73	126270	56,313	1,27,12,210
1973-74	8520	1,06,213	1,05,03,017
1974-75	68427	28,396	79,54,877
1975-76	55482	26,077	45,57,734
1976-77	63216	11,224	28,53,521
1977-78	51030	13,771	33,65,322
1978-79	74112	22,178	55,11,362
1979-80	38979	14,453	49,86,285

The quantity graded decreased from 56313 in 1973-74 to 14453 in 1979-80. The grading qualities helped the farmers to sell the produce as soon as possible and there is no

need of waiting for the sell for a long time. The grader mentions the number of grading on every bag. The grades of Groundnut were classified differently as No.1,2,3. For grading the ground nut the grader takes 100 samples of the groundnet. A table of grading is prepared and after taking the approval of the market committee, the daily grading is done. Thus the grading facilities helped the farmers to sell their produce early and to get better prices.

#### 6. Market Intelligence.

The Market committee distributed pamphlets in the first year of its establishment in order to acquaint all concerned with regulation and its benefits. Help of the well known farmers in villages, Khatedar patil, etc was taken to advertise the benefits of market committee. The market inspector visited a number of villages to check irregular trade practices in the infant stage of the market committee. In 1954, competition was arranged and incentive was given to the Deshi and Sahakari produces.

This market committee communicates daily by press telegram, the prices of important agricultural commodities to all India Radio, Bombay. It circulates by post the prices of agricultural commodities to number of villages in this market area and prices are displayed on notice board of the Gram Panchayat office of each village.

The published in the news paper (Pudhari) a summary

of the weekly price behaviour of major commodities received in the market. It maintains a daily register for recording daily prices and turnover in Gadhinglaj market.

The Market committee publishes its Annual Reports since its inspection. The market committee received no Government subsidy for the advertisement.

### Method of Marketing

#### 1. Open Auction.

Before the introduction of market regulation, the system of private sales through mutual agreement between the purchaser-trader and the commission agent was in vogue. The cultivator-seller remained almost in dark about the detail of sale. The Hathya system was in practice. Market regulation replaced the age old practice by open auction system.

From 1949 the working hours for open auction were from 9 a.m. to 5 p.m. At the time auction traders, farmers, whole - traders from outside are also present.

#### 2. Wighmen :

The licensed weighmen now weigh the produce in the market yard. The weighment is done by the two methods. One adding the weight and second by adding the quantities to a bag. The market committee at Gadhinglaj adopted the method of adding the quantities so as to make a bag for a particular weighment.

3. Market Charges :

The Market Acts authorised the Market Committee to pre-  
scribe the charges for different services rendered at the time of  
marketing thus prohibiting the market functionaries from receiving  
market charges other than those prescribed. Following table indi -  
cates the relative market charges before and after regulation -

Market charges payable by farmer in Gadhinglaj Market ( Year ).

Item	Unit	Before Regula tion.	After Regula tion	Benifit
Commission	Rs. 100/- sale proceed	Re 1/-	-	
Dharmaday	Per Bag.	-	-	
Goshala	" "	-	-	
Weightment	" "	.10	0.25	
Sieving	" "	-	-	
Hamali	" "	.10	0.25	
Kadata	Per Qth.	-	-	
Market fee	Per Rs.100/- Sale	.25	0.70	
Carting space		-	-	
Dust and Driage		4 k.g. Per Bag.	2. K.g. Per Bag.	
Sample		1 Sher.	1. k.g.	

4. Cost of Marketing :

following table gives the cost of marketing for ground-  
nut, chilli and gur. It can well be noted that the cost of market-  
ing per Rs.100/- value of groundnut, chilli, gur is less in post  
regulation period than the pre-regulation.

The difference is an indicator of direct financial gain to the producer cultivator on account of regulation. Page(108). Following table shows the monthwise prices of groundnut, gur and Chilli between 1971 to 1981.

1981-82.

\* Find regression coefficient of Mode Price of Jaggary and Arrivals of Jaggary.

X = Mode Price of Jaggary ( Per Quintal ).

y = Arrivals of Jaggary ( in quintal ).

COMPUTATION OF "R"

Months	X Series			X series			dx dy
	X	dx = X-180	d2 x	y	dy=y.1550	d2y	
Oct.	300	120	14400	7106	- 8444	71301136	- 1013280
Nov.	250	70	4900	9468	- 6082	907924	- 425740
Dec.	230	50	2500	19732	4182	17984124	209100
Jan.	235	55	3025	37054	21504	46232216	1182720
Feb.	210	30	900	29467	13917	193681889	417510
Mar.	200	20	400	23660	8100	65772100	162200
Apr.	180	0	0	15550	0	0	0
May-	190	10	100	11282	- 4268	10215824	- 42680
June.	185	5	25	8956	- 6594	43480836	- 32970
July.	180	0	0	16212	662	438244	0
Augu.	200	20	400	8181	- 7369	54302141	- 147380
Sept.	200	20	400	4217	- 11273	27080529	- 225460

$$= \frac{d \ x \ dy}{d^2 \ x \ d^2y}$$

$$= \frac{83020}{27050 \ x \ 946986763}$$

$$= \text{Antilog } 10983020 - \frac{1}{2} (10927050 + 109946986763)$$

Antilog  $\left| 4.9193 - \frac{1}{2} ( 4.4322 + 8.9763 ) \right.$

Antilog  $\left| 4.9193 - \frac{1}{2} ( 13.4085 ) \right.$

Antilog  $\left| 4.9193 - 6.7042 - \right.$

Antilog =  $\left| 4.9193 - 6.7042 \right|$

1981-82.

Antilog  $\left| 2.2151 \right| = 0.01641$  is required  
Coefficient of correlation.

Find regression coefficient of Mode price of Groundnet  
and Arrivals of Groundnet.

X = Mode price of Groundnet

y = Arrivals of Groundnet.

COMPUTATION OF "R"

Months.	Σ Series			Y series			dx dy
	X	dx=X-400	d2x	y	dy=y-760	d2y	
Oct.	325	-75	5620	146	- 614	376996	46050
Nov .	375	-25	625	2472	1712	2930944-	42800
Dec.	400	0	0	7410	6650	44222500	0
Jan.	440	40	1600	5622	4862	23607044	194480
Feb.	435	35	1225	1558	798	636804	27930
Mar.	430	30	900	860	100	10000	3000
Apr.	410	10	100	681	- 79	6214	- 790
May.	400	0	0	760	0	0	0
June.	425	25	625	1611	851	21275	21275
July.	410	10	100	830	70	4000	700
Augu.	450	50	2500	233	- 527	277729	-26350
Sept.	400	0	0	183	- 577	322924	0

$$= \frac{D x dy}{d2 x d2y}$$

$$= \frac{2,20,045}{13295 \times 82406087}$$

$$= \text{Antilog } \left| 109220045 - \frac{1}{2} (10913295 + 10982406087) \right|$$

$$= \text{Antilog } \left| 5.3424 - \frac{1}{2} (4.1235 + 7.9159) \right|$$

$$= \text{Antilog } \left| 5.3424 - \frac{1}{2} (12.0394) \right|$$

$$= \text{Antilog } \left| 5.3424 - 6.0147 \right|$$





- = Antilog =  $\frac{1}{2} ( 6.5112 + 5.0598 + 8.9155 )$
- = Antilog =  $\frac{1}{2} ( 6.5112 + 13.9 \times 3 )$
- = Antilog =  $\frac{1}{2} ( 6.5112 - 6.9876 )$
- = Antilog =  $6.5112 - 6.9876$
- = Antilog = T 5236
- = 0.3339 is the required coefficient of correlation.

Regression coefficient of mode price of Jaggary in 1980-81 and arrivals of Jaggary in 1981-82.

X = mode price of Jaggary in 80-81

y = Arrivals of Jaggary in 81-82

Month	X	dx= -x	dx <sup>2</sup>	y	dy=y	dy <sup>2</sup>	dx dy
Oct.	450	30	900	7106	-8444	71301136	- 253320
Nov.	340	20	400	9468	-6082	907926	- 121640
Dec.	330	10	100	19732	4182	17484124	41820
Jan.	325	5	25	37054	21504	462322014	107520
Feb.	320	0	0	29467	13917	193681889	0
March.	380	60	3600	23660	8110	65772100	486600
April.	400	80	6400	15550	0	0	0
May.	385	65	4225	11282	- 4268	10215824	- 227420
June.	375	55	3025	8956	-6594	43480836	- 362670
July.	350	30	900	16212	662	438244	19860
Augu.	350	30	900	8181	-7369	54300141	- 221070
Sept.	250	-70	4900	4277	-11273	27080529	- 789110
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	4255	-	25375	109945	-	94986763	653800

$$= \frac{d x d y}{d^2 x d^2 y}$$

$$= \frac{- 655800}{25375 \times 94986763}$$

$$= \text{Antilog } \frac{1}{2} ( 6.5112 + 6.5112 - \frac{1}{2} ( 25375 + 94986763 ) )$$

$$= \text{Antilog } \frac{1}{2} ( 5.8167 - \frac{1}{2} ( 4.4043 + 7.9777 ) )$$

$$= \text{Antilog } \frac{1}{2} ( 5.8167 - \frac{1}{2} ( 12.3820 ) )$$

= Antilog  $\{ \frac{1}{2} + 5.8167 - 6.1910 \}$

= Antilog  $\{ 1.6257$

= Antilog  $\{ 0.7961$

Regression Coefficient of Mode Price of Groundnut in 1980-81  
and Arrivals of Groundnut in 1981-82

X = Mode price of Groundnut in 80-81

y = Arrivals of groundnut in 81-82

Month	X series			Y series			dx dy
	X	dx=X	D2x	y	dy=y	d2y	
Oct.	300	- 140	19600	146	-614	376996	85960
Nov.	380	- 60	3600	2472	1712	2730944	102720
Dec.	375	- 65	4225	7410	6650	44222500	432250
Jan.	400	- 40	1600	5622	4862	23607044	194480
Feb.	450	10	100	1558	798	636804	7980
Mar.	420	- 20	400	860	100	10000	2000
Apr.	450	10	100	681	- 79	6241	790
May.	440	0	0	760	0	0	0
June.	460	20	400	1611	851	21275	17020
July.	455	15	225	830	70	4900	1050
Augu.	485	45	2025	233	- 527	277729	23715
Sept.	415	- 25	625	183	- 577	332929	14425
	5030	-	32900	22366	-	8261962	127225

=  $\frac{dx \ dy}{D^2 \ X \ d^2y}$

=  $\frac{127225}{32900 \times 8261962}$

= Antilog  $\{ 127225 - \frac{1}{2} ( \log 32900 \times \log 820962$

= Antilog  $\{ 5.1045 - \frac{1}{2} ( 4.5172 + 6.9171 )$

= Antilog  $\{ 5.1045 - \frac{1}{2} ( 11.4343 )$

= Antilog  $\{ 5.1045 - 5.7171 \}$

= Antilog  $\{ T. 3874. \}$

= 0.5882

Regression coefficient of Mode price of Chilli in 1980-81  
and Arrivals of Chilli in 1981-82

X = Mode price of Chilli in 80-81

y = Arrivals of Chilli in 1981-82

Month	X series			Y series			dx dy.
	X	Dx=x	dx <sup>2</sup>	y	dy=y	d <sup>2</sup> y	
Oct.	500	- 200	40000	15873	15554	238826116	-3110800
Nov.	550	- 150	22500	21698	21279	467884841	-3191850
Dec.	650	- 50	2500	7558	7139	40965321	- 356950
Jan.	550	- 150	22500	2893	2474	61206761	- 371100
Feb.	650	- 50	2500	1053	634	401756	- 32700
Mar.	700	0	0	419	0	0	0
Apr.	850	150	22500	261	- 158	24964	- 23700
May.	700	0	0	90	- 329	108241	- 0
June	750	50	2500	80	- 339	114921	- 16950
July	715	15	225	87	- 332	110224	- 4880
Agut.	700	0	0	12	- 407	165649	- 0
Sept	900	200	40000	4081	3662	13410244	732400
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8215		-	155225	54205	-	823219235	-7108930

$$\begin{aligned}
 &= \frac{d^2 x \, dy}{d^2 x \, d^2 y} \\
 &= - \frac{7108930}{155225 \times 823219235} \\
 &= \text{Antilog} - 7108930 - \frac{1}{2}(109155225 + 109823219238) \\
 &= \text{Antilog} - 6.8518 - \frac{1}{2}(5.1909 + 8.9155) \\
 &= \text{Antilog} - 6.8518 - 7.0532 \\
 &= \text{Antilog} - 13.9050 \\
 &= \text{Antilog} - 1.1430 \\
 &= 1.1430.
 \end{aligned}$$

In order to find out the relation of mode price and the arrivals, R Value is calculated. In that modeprice and arrivals of the same year are taken. The 'R' value of jaggary is .01 and that of grandnut is .2 and of chilli is .3

In order to find out the relation between last year price and current year arrivals 'R' value shows that when the prices were high the arrivals were also high.

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