## Economics of Fruit Preservation as a Cottage Industry By Dr. G. S. SIDDAPPA, M.A., Ph.D., A.R.I.C., (Biochemist)

Although the fruit and vegetable preservation industry is a large one which has been highly standardized, large quantities of surplus fruits and vegetables are preserved in numerous homes and small concerns all the world over. Large commercial concerns which make use of costly machinery and equipment which are often fully automatic with labour-saving devices, pack standard and uniform products for use at home and for the export trade. England, Australia, the U.S.A. and South Africa have built up a large export trade in preserved fruit and vegetables. Numerous homes in these countries, however, preserve their own fruits and vegetables during seasons of plenty. Suitable small-scale equipment by way of can sealers, jam boiling pans, pressure cookers, etc., have been specially designed for this purpose. By propaganda and demonstration, home preservation of fruits has become a safe process in the hands of the average housewife in those countries. In India, however, a beginning has yet to be made in this direction. In the meanwhile, small co-operative concerns and the larger orchards can profitably take up the preservation of fruits on a cottage industry scale. The production of highly standardized products in large well-equipped preservation factories employing automatic machinery and strict technical control should be the ultimate aim.

In the Government Fruit Products Research Laboratory at Kodur, a considerable amount of work has already been done on the preservation of a large number of different kinds of fruits. The methods have been standardized for the preservation of products like canned mangoes, pine-apples, guavas, grape-fruit etc., fruit juices and squashes like lime, lemon and orange squashes, mango and pineapple squashes, watermelon squash, passion fruit squash, cashewapple syrup, tomato juice etc. Different kinds of jams, jellies and marmalades like mango jam, pineapple jam, jack jam, wood-apple jam, banana jam, plum jam, guava jelly, orange marmalade, guava cheese, etc., have all been prepared. Other products like candied rumquat, jack, pineapple, ginger, orange peel and banana fig., banana flour, orange oil, etc., for which methods have been worked out are also of considerable interest. It is thus possible to prepare a large number of useful preserved products from South Indian fruits. In these days of balanced diet, fruits and vegetables with their valuable minerals and

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vitamins are almost indispensable. They are important protective foods. Unfortunately, they are highly seasonal and much of the crop is wasted or spoilt during periods of glut. This is a serious loss to the country. Modern science has advanced greatly and it is now possible to preserve fruits and vegetables in all their freshness and richness so that they can be made available throughout the year. At present preserved fruits and vegetables are considered as luxury foods on account of their high cost. When the industry is well organised, it will be possible to bring them within the reach of the common man. The fruit and vegetable preservation industry is an industry of great national and economic importance and its development on a large factory as well as small home-scale should be the concern of the State.

Capital Investment: Very little equipment is required for the preservation of fruits on a small scale. Many of the items are generally available in the average home. Items like can-sealers, thermometers, hydrometers, glass jars, etc., can be purchased easily. A list of items of equipment which are useful for preparing a variety of fruit products is given in Table I. One will be surprised to learn that with this equipment as many as 100–150 cans of fruit, 100–150 bottles of fruit squash and 50–60 lbs. of jam per day can be turn out without any great exertion. The costliest item will be the preparation room and this cannot be avoided. The room should be fly-proof with wire gauze doors and windows. The walls and floor should be smooth and washable. There should be a good drain. A room 20 ft. x 20 ft. will be sufficient for the preservation room. Raw materials and finished products can be conveniently stored in a separate room.

Cost of Production: A large number of preserved products have been prepared at the Government Fruit Products Research Laboratory using equipment similar to that listed. The cost of production has been worked out. The overhead and supervision charges are, however, tentative. A sum of Rs. 10–12 per day towards these will be ample for a small concern. The cost of sugar at nine annas per pound is rather high. The cost of glass containers, corks and cans is also high on account of the abnormal times. There is ample scope for reducing these considerably in normal times. The tentative cost of production of a few typical products is given in the following paragraphs. Actual working data is also given. The costs are on the high side and will be much less when production is regular and to capacity.

The working capital for raw materials, containers, etc., may be taken on the average at about one rupee per can or bottle.

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30 Pines 31 Can 32 Bottle

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equired for the s are generally thermometers, list of items of uit products is ith this equipof fruit squash ny great exernd this cannot uze doors and and washable. Il be sufficient products can

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Establishment: The person in charge of the work should have undergone training in fruit canning and preservation at the Government Fruit Products, Research Laboratory. He should have a skilled labourer to assist him in the day-to-day work.

TABLE I.

Equipment for a small fruit preservation unit.

CONTRACT OF	D. ut allows		Number	(	Cost	
S. No.	Particulars		required	Rs.	A.	P
140.	Aluminium basins with lids—capacity 2	0—100	grade has been all a	1	Grant at	
1	lb. diameter 10"—20"		12	250	0	0
2	Saucepans 3-6 lb. capacity		~ 4	10	0	C
2	Mugs	S 400 85	4	4	0	(
4	Strainers		2	6	0	(
5	Travs	130,000	2	. 12	0	(
6	Cilumized steel buckets		6	30	0	(
7	Kerosene stoves with 3-4 burners		2	75	0	(
8	Charcoal ovens with stand	- 11 t	4	16	0	(
9	Sieve for pulping		2	8	0	0
10	Spoons, large		2	3	0	(
11	Spoons, table		6)	16	0	(
12	Spoons, tea	35 W 25	65			
13	Knives, stainless steel	•••	6	18	0	(
14	China plates of different sizes	· · ·	6	8	0	(
15	Glass tumblers	•••	6	2	0	(
16	Orange squeezer	Southern S	1	30	0	(
17	Wooden lime squeezer	•••	12	25	0	
18	Wooden basket press	the same of the	Marine Santonian di	160	0	(
19	Spring balance	* ***	b b	30	0	4
20		eserva-	and the second species	2.5	0	10,
	Glass funnel 4"-6" diameter	1	2	2.5	100	(
21	Thermometer 0—240°F.	***	2	20	0	(
22		0-20.	Learn	20	U	(
6)	Brix hydrometer with jar (0-10, 10, 20-30, 30-60 and 60-90)	20,	1 set.	100	0	(
24	Rubber gloves		2 pairs.	5	0	
25	Beakers 100-250 cc.	# Secul	6	4	0	
26	Perforated skimmer		2	2	0	(
27	Can sealer. Dixie automatic	and to the	Salata Par Milas ya	150	0	
28	Burpee canning Retort		tera la terra (1).	150	Ö	(
29	Coring knives	1000	6	15	0	(
30	Pineapple eye extractors	***	3	6	0	(
31	Can opener	Dr. bren 1 i	h bite   La Head of	See St. 1	0	(
32	Bottle opener		2	>1	0	(
33	Stone jars. 25-50 lbs.	Had wod	12	50	0	(
34	Glass carboys 5-6 gallon capacity		12	150	0	(
35	Cream squezee	•••	2	12	0	(
36	Pestle and mortar, porcelain	•••	1	4	0	(
37	Bottle cleaning brushes	•••	12	2	0	(
38	Crown corking machine	•••	1 7 7 7	90	0	(
39 10	Home dryer		T T	100	0	(
10	Work tables		3	100	0	(
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	I. CANNED PRODUCTS.		D.				
(1)	Canned Mangoes (i) Neelum. (in 40 deg. Brix Syrup)		Rs.	12	P.		17
100	Neclum mangoes, 75 @ Rs. 5 per 100	ter time		14	0		H
	2 Sugar-3 lb. 7 oz. @ 9 annas per lb.			12	8		A
	3. Charcoal—3 basket at Re. I per basket	••		12	3450000		
	4. Labour 3 man-day at Re. I per day	••		12	0		
	The control of the co		7	2	8		H
	Cost of 11 A 22 cans prepared				0		
	A CONTRACTOR OF THE CONTRACTOR	g Page -	0	10	5		Note:
	Hence cost of contents per A 22 can	•	0	4	0		
	Add (I) cost of can	···	0	2	0		
	(2) overhead charges		-		_		
	A 21 of Neelum manages		- 1	0	5		
	Hence cost of one A 22 can of Nectum manage	4. (	1	8	0	(1)	Mango
	Present sale price				_	(1)	-
	D. G. 40.1 Dain Samp)						1. Co
(2)	Bangalora (in 40 deg. Brix Syrup).  1. Bangalora mangoes, 22 lb. @ 0-0-9 per lb.	e company	1	0	6		2. Li
	1. Bangalora mangoes, 22 lb. @ 0-0-9 per lb.  2. Sugar-2 lb. 10 oz. @ 9 annas per lb.	down in	1	7	8		3. Su
	2. Sugar — 2 lb. 10 oz. ( 9 annas per 10.		0	12	0		4. Px
	3. Charcoal 4 basket @ Re. 1 per basket		0	12	0		5. Cl
	4. Labour <sup>2</sup> man-day				_		
	Cost of 10 A 2½ cans prepared	men a	4	0	2		6. L.
	Cost of 10 11 22 state property		-		_		
100	Hence, cost of contents of one A $2\frac{1}{2}$ can	48.000	0	6	5		
	Add (1) cost of can		0	4	0		
	(2) overhead charges	· · · · · · · · · · · · · · · · · · ·	0	2	0		H
			-	10	-		A
	Hence, cost of one A 22 can of Bangalora mangoes		0	12	5		
(3)	Canned guavas (in 45 deg. Brix Syrup).		,	14	0		
	-1 Guavas — 13 lb. — 13 oz. at one anna per lb.	•••	0	14	0		H
	2 Sugar — 3 lb. 8 oz. at 9 annas per lb.	•••		0	0		
	3. Charcoal — 1 basket @ Re. 1 per basket	•••	1	0	0	(2)	Chinee
	4. Labour — 1 man-day			,0	·		1. K
			4	13	6		
	Cost of 17 A-1 small cans	***	7	, 13			2. L
			0	4	7		3. S
	Hence, cost of contents of one A-1, can	Vi Protes	0	10/4/05/2004	0		4. P
	Add (1) cost of can	· ·	0		0		, 5. C
	(2) overhead charges	*****					6. L
	the state of the s		0	7	7		
	Hence, cost of one A-1 can of guavas	***	14 <u>191</u>				
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1						
	Note:—A-1 can is only about half the size of A 2½ can.						1
(4)	Canned Grapefruit (in 60 deg. Brix Syrup)		7000				
(4)	1. Grapefruits 4 (4 lb.) @ 8 pies per lb.	200	0		8		
	2 Sugar 1 lb. @ 9 annas per lb.	•••	.0		0		
	3. Caustic soda for lye peeling 2/3 oz. at 5 annas an ounce	•••	0		4		
	4. Charcoal ½ basket @ Re. I per basket		0		0		
	5. Labour 1 man-day	•••	C	) 4	0		1
	the state of the s				0		1
	Total cost of contents of 2-A 2½ cans	•••		1 7	U		Note
			1,18	1			
							THE RESERVE TO SHARE THE PARTY OF THE PARTY

Rs. A. P.

D. /			A 21	•••	0	11	6
Rs. 4	2.000 (CHESTOR)		Hence, cost of contents of one A 2½ can		0	4	0
	2 (		11 (1) cost of can	a resignation and an	0	2	0 "
	12	3	(2) overhead charges				
0 1	12		a 21 am of grape fruit	Section 1	. 1	1	6
1			Hence, cost of one A $2\frac{1}{2}$ can of grape fruit	7		<u> </u>	_
7 \	2	8	Note: The cost of production of canned chinee oran	as • longe-is	cket	ora	nge
0	10	- 1	The cost of production of canned chines of an	ge, loose ja			
0	A	5	Note: The cost or product the same.				
0	2	0		1.0			
A			II. JUICES, SQUASHES AND CORDIA	LS			
1	0	5	(AE Jon Brix)				
1	8	0	(1) Mango squash (45 deg. Brix)	4 100 m 14 1 And	6	0	0
		-		***	2	8	0
1	0	6	inica—75 lb. (2)0 lillies) at 115	•••	16	0	0
- 11		8	<ol> <li>Lime juice 7 oz. @ 9 annas per lb.</li> <li>Sugar 28 lb. 7 oz. @ 9 annas per lb.</li> <li>Preservative, pottassium meta bi-sulphite 20 gm.</li> <li>@ 0-3-6 per oz.</li> </ol>			0	,
0	10	0	4. Preservative, pottassium mota @ 0-3-6 per oz.	•••	0 2	2	6
0	12	0	5. Charcoal, 2 baskets at Re. 1 per basket	And Services	Ĩ.	0	0
-			6. Labour—I man-day	···			
4	0	2		Landau Carrier	27	10	6
0	6	5	Total cost of 35 bottles of squash. 24 oz. each				—
0	4	0	t and bottle		0	12	8
. 0	2	0	Hence, cost of contents per bottle	Links & North	0	6	0
150 <del>- 18</del> 1		-	Add (1) cost of bottle		0	0	3
0	12	5	(2) cost of crown cork	Clato C	0	2	0
			(3) overhead charges				
0	14	0	Hence, cost of one 24 oz. bottle of mango squash	e ha years amon	1	4	11
1 1	15	6	Hence, cost of one at the		-		
11000	0	0	(2) Chinee orange squash (60 Deg. Brix)				
1	0	0	(2) Chinee orange squash (00 = 25)	Play the week	65	0	0
	12	4	1. Kodur Chinee oranges, 433 @ Rs. 15 per 100		20	0	0
4	13	6	2. Limes 2,000 at Re. 1 per 100	in these and I	150	7	0
0	4	7	3. Sugar 267 lb. 7 oz. @ 9 annas per lb.		-1	1	6
0	2	0	4. Preservative, K. M. S., 5 oz. at Re. 0-3-6 per oz.	William Hab	10	0	0
0	- 1	0	5. Charcoal, 10 baskets at Re. 1 per basket	and the second	5	0	0
			6. Labour, 5 man-days				
0	7	7	Total cost of contents of 230 bottles x 24 oz.	A mediano	251	8	6
1 10 1			The second secon	almad i starja	da <del>de la</del>	4	and the second
			Hence, cost of contents of one bottle	ation than	1	1	6
	2	8	Add (1) cost of bottle		C	6	0
0	9	0	(2) cost of cork	•••	C	0	3
0	3	4	(3) over-head charges		(	) 2	0
0	4	0					0
0	4	0	Hence, cost of 1 x 24 oz. bottle of orange squash	a diski		9	9
-		-					
. 1	7	0	Note: - The cost of fruit is nearly twice the normal price	of the Manager			

The state of the s	Rs. A. P.	
(3) Loose-jacket orange squash (60 Deg. Brix)	3. 图 1. 图 1.	(6) Pineapple
	等的 非洲	1. Pinea
1. Loose-jacket oranges (Coorg or Santra) 110 at Rs. 8 per 100	8 12 0	2. Lime
000 · B · I 100	2 0 0	3. Sugar
2. Limes 200 at Re. 1 per 100  3. Sugar 26 lb. 11 oz. at Re. 0—9—0 per lb	15 0 0	4. Prese
4. Preservative, K. M. S. ½ oz. Re. 0-3-6 per oz.	0 1 9	6. Labo
5. Charcoal 1 baskets @ Re. 1 per basket	1 8 0	O. Labo
6. Labour I man-day	1 0 0	Tota
	28 5 9	
Total cost of 25 x 24 oz. squash	20 3	Hen
	1 2 2	Add
Hence, cost of contents of one bottle	0 6 0	
Add (1) cost of bottle	0 0 3	
(2) cost of cork	0 2 0	Hen
(3) over-head charges		
24 Levelo of equash	1 10 5	(m) III day ma
Hence, cost of 1 x 24 oz. bottle of squash		(7) Water-me
a total Print		1. Wat
(4) Lime Squash (50 deg. Brix)	10 0 0	2. Lim
1. Limes 1,000 @ Re. 1 per 100	10 0 0	3. Sug
2 Sugar 49 lb -6 oz. @ Re. 0-9-0 per lb	0 3 6	4. Pres
3 Preservative K. M. S. 1 oz. at Re. U -3-0 per oz	2 0 0	5. Cha
4. Charcoal—2 baskets at Re. I per basket	2 0 0	6. Lab
5. Labour 2 man-days		
Total cost of 56 x 24 oz. bottles of squash	41 15 10	Tot
1 otal cost of 50 x 21 oz. comme		
Hence, cost of contents of one bottle	0 12 0	He
Add (1) cost of bottle and cork	0 6 3	Ad
(2) over-head charges	0 2 0	
Hence, cost of 1 x 24 oz. bottle of lime squash	1 4 3	H
Note: - The cost of production is high due to the high cost of sugar.		(8) Passion
		I. Pa
(5) Lemon Squash (45 deg. Brix)		2. Su
	0 6 4	3. Pr
1. Lemons 38 at Re. 1—0—8 per 100	7 11 .0	4. Ch
) Sugar 13 ID. 11 UZ. (00 110. 0 )	0 1 2	5. La
3. Preservative, K. M. S. 9 grams @ Re. 0-3-6 per oz 4. Charcoal, 1 basket at Rc. 1 per basket	1 0 0	
4. Charcoal, I basket at he. I per basket  5. Labour I man-day	1 0 0	T
). Labour I man-day		
Total cost of 17 x 24 oz. bottles of squash	10 2 6	H
		A
Hence, cost of contents of one bottle	0 9 7	
Add (1) cost of bottle and cork	0 6 3	1
(2) over-head charges	0 2 0	
	1 1 10	
Hence, cost of 1 x 24 oz. bottle of lemon squash		Note:

R	s. A. p			Rs.	A.	P.
		(6) Pineapple Squash (50 deg. Brix)				
		(6) Pineapple Squash	S	6	0_	0
6	12	The I (the Ne. of both the the the the the the the the the t		1	8	0
2		1. Pineapples, 1@ Re. 1 per 100 2. Limes, 150 @ Re. 1 per 100 2. Limes, 150 @ Re. 0—9—0 per lb.		9	3	0
15	0	2. Limes, 150 @ Re. 0—9—0 per lb. 3. Sugar. 16 lb. 5 oz @ Re. 0—9—0 per lb.		0	1	3
0		3. Sugar. 16 lb. 3 62 @ Re. 1 per hasket	990	- 1	0	0
	. ,	Charcoal   Basket @ Ne.   Per Susan		- 1	. 0	0
1	8 0	6. Labour I man-day				
	0 0	C20 24 - Laular of annual		18	12	3
		Total cost of contents of 20 x 24 oz. bottles of squash		10	14	
28	5 9			_	1.5	0
		Hence, cost of contents of one bottle	•••	0	15	0
1	2 2	Add (i) cost of bottle and cork	•••	0	6	3
0	6 0	(ii) overhead charges	***	0	2	0
0	0 3	and the second s		100		_
0	2 0	Hence, cost of 1 x 24 oz. bottle of pineapple squash	***	1	7	3
					Je.	1900 5
1	10 5	(7) Water-melon Squash (55 Deg. Brix.)				
		1. Water-melons 6	**** 10 0000 000	2	8	0
,	0 0	2. Limes 250 @ Re. 1 per 100		2	8	0
7	0 0	3. Sugar 27 lb. 3 oz. @ Re. 0-9-0 per lb.	•••	15	4	8
	12 4	4. Preservative, sodium benzoate 23. 4 gr. @ Re. 0-14-6				
		per oz.		0	12	2
		5. Charcoal I Basket		. !	0	0
	0 0	6. Labour 1 man-day	•••	234	0	0
	15 10	The same of the sa	R III states			
	15 10	Total cost of contents of 27 x 24 oz. bottles	••• n= 7 = een	23	0	10
	12 0			Sec. 2	100	
	12 0	Hence, cost of contents per bottle	· · · · · · · · · · · · · · · · · · ·	0	13	8
	6 3 2 0	Add (i) cost of bottle and cork	•••	0	6	_ 3
	2 0	(ii) overhead charges		0	2	0
	4 3		, /	-		
	7 3	Hence, cost of 1 x 24 oz. bottle of watermelon Squash	ly head way	1.	5	11
		一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个			-	
		(8) Paula Fail Samil (SE D. D.)				
		(8) Passton Fruit Squash (55 Deg. Brix.)				
		1. Passion fruit 14 lb. at Re. 0-4-0 per lb. plus freight	•••	4	10	0
	6 4	2. Sugar 6 lb. 5 oz. @ Re. 0-9-0 per lb.		3	9	0
1	1 .0	3. Preservative, K. M. S. 3. 4. grams at 1. 5. pies per gram	***	0	0	5
	1 2	4. Charcoal 1/4 basket at Re. I per basket	***	0	4	0
	0 0	5. Labour 1/4 man-day	***	0	4	0
	0 0				-	_
100		Total cost of contents of 6 x 24 oz. bottles		8	11	5
	2 6			_		
		Hence, cost of contents of one bottle		1	7	3
	9 7	Add (i) cost of bottle and cork		0	6	3
(		(ii) overhead charges		0	2	0
				_		
				- 1	15	6
1	10					
-		Note:— The cost of fruit and sugar is very high.				

		Rs. A. P	
(a) C. J. Sama (60 dec Brix)		rts. A. P.	
(9) Cashew-apple Syrup (60 deg. Brix).		1 2 9	
1. Cashew-apple, 750 @ Re. 0-0-3 per 10 fruits		2 2 5	
2. Limes 215 @ Re. 1 per 100		15 9 0	
3. Sugar 27 lb. 10 oz. @ Re. 0—9—0 per lb.		0 3 0	
4. Preservative, K. M. S. 23.5 gram @ Re. 0-3-6 per oz.	Last Techni	1 0 0	
5. Charcoal I basket	erance I toda	1 0 0	
6. Labour 1 man-day			(2) Mango J
Total cost of contents of 24 x 24 oz. bottles		21 1 2	1. Maj
Total cost of contents of 2 1 2 1 2 1		-	2. Sug
Hence, cost of contents per bottle		0 14 1	3. Tar
Add (i) cost of bottle and cork	***	0 6 3	4. Cha
(ii) overhead charges		0 2 0	5. Lab
· 图 · 图 · 图 · 图 · 图 · 图 · 图 · 图 · 图 · 图			
Hence, cost of 1 x 24 oz. bottle of cashew-apple syrup	•••	1 6 4	Co
(10) Fruit cocktail			He
1. Chinee orange squash 4 x 24 oz. bottles at 1-9-9 each		6 7 0	Co
2. Pineapple squash 4 x 24 oz. bottles at 1—7—3 each	6	5 13 0	Ad
3. Tomato juice 2 x 24 oz. bottles at 1-1-1 each	/ P. M. 901 pe	2 2 2	
5. Admired Justice and A. Commission of the Comm			
Total cost of 10 x 24 oz. bottles of Fruit cocktail	and an interest	14 6 2	He
Hence, cost of 1 x 24 oz. bottle		1 7 0	
			(3) Plum Ja
(11) Tomato juice			1. Plu
1. Tomatoes 24 lb. at Re. 0-8-0 per 3 lb.		4 0 0	
2. Common salt $2\frac{1}{2}$ oz.	eville 3 de la	0 0 1	2. Su
3. Charcoal I basket	1.00	1 0 0	3. Ch
4. Labour 1 man-day	A. 2409 (80)	0 8 0	4. Lal
			12 March 19 19 19 19
Total cost of centents of 10 x 24 oz. bottle	diaments.	5 8 1	To
		0 0 10	
Hence, cost of contents per bottle	k itteria inn	0 8 10	He
Add (i) cost of bottle and cork		0 6 3 0 2 0	Co
(ii) overhead charges	ietu je	0 2 0	A
		1 1 1	
Hence, cost of one 24 oz. bottle of tomato juice	atilitisal) es		
Note: The cost of tomatoes is very high.			H
Note:— The cost of tomatoes is very men.			
III. JAMS, JELLIES AND MARMALAI	DES.		(4) Pineapp
			1. Pi
(1) Mango Jam. (Bangalora)			2. Su
1. Mangoes, Bangalora. 74 fruits weighing 73½ lb at			3. Li
Re. 0 –0—9 per lb.		3 7 2	4. Ch
2 Sugar 35½ lb. at Re. 0-9-0 lb.		19 13 3	5. La
3 Tartaric Acid, 6 2/3 oz. at Re. 0-3-6 per oz.	***	1 7 4	T
4. Charcoal 2 Baskets at Re. 1 per basket	***	2 0 0	T
5. Labour 2 man-days	···	2 0 0	C
		20 11 0	
Cost of 38 x A 22 cans of jam (85 5/8 lb)		28 11 9	
		St. Barrier	

			Economics of Fruit Preserva	tion		7	7
			Economics of Trans				
					Desirable retails		
			The state of the s	At to W.T.	0 !	5 4	
Rs.	A.	P	Hence, cost of one lb.				
				a lees the	0 12		
1	2	9	Cost of one A $2\frac{1}{2}$ can jam			4 (	
. 2	2	5	Add (i) cost of can  (ii) overhead charges		0	2 (	0
15	9	0	(ii) overnead charb			2	1
0	3	0	Hence, cost of 1 A 21 can mango jam		1	4	
1	0	0	Hence, cost of 1				
1	0	0	(at dum)		Section 4	0	0
		-	(2) Mango Jam. (Neelum)  1. Mangoes, Neelum 133 at Rs. 5/- per 100  1. Mangoes, Neelum 133 at Rs. 0-9-0 per lb.				8
21	1	2	Mangoes, Needun				6 1
_		-	2 Sugar 10 10. 0 Re 0-3-6 per oz.		0 1		0
0	14	1	3. Tartaric acid, 8/-4 grams at Re. 1 per basket 4. Charcoal 14 baskets at Re. 1 per basket			et a	0
0	6	3	Charcoal 14 Dasies	•••		U	<u> </u>
0	2	0	5. Labour 1 man-day		/18	14	1
	7	-	Cost of 417/16 lb. of jam (18 cans-A 21 size)	6 77 X 30 40 7	710	17	
	6	4	Cost of 417/10		0	7	3
			Hence, cost of one lb. jam		3 3 4		
					1	0	9
6	7	0	Cost of contents of one A 2½ can		0	4	0
5	13	0	Add (i) cost of can	New Strate Cop Text	0	2	0
2	2	2	(ii) overhead charges	Burn Same of			
		-			1	6	9
14	6	2	Hence, cost of one A 2½ can mango jam	on in Aires o	an alti-		
1	7	0					
			(3) Plum Jam	200	4	6	0
			1. Plums — sour — 14 lb at Re. 0—5—0 per lb.		0	12	0
4	0	0	Freight from Country		5	10	0
0	0	1	2. Sugar, 10 lb. @ Re. 0-9-0 per lb.		0	12	0
1	0	0	3. Charcoal, 4 basket at Re. 1 per basket	and the state of	0	12	0
0	8	0	4. Labour — 3/4 man-day		-	-	_
			101 II inm		12	4	0
5	8	-1	Total cost of 19½ lb. jam		-		_
		•••	Hence, cost of 1 lb. jam	4	0	10	1
0	8	10	Hence, cost of 4 so, june				
0	6	3 0	Cost of jam in an A 2½ can (2½ lb.)	7.44	1	9	2
0	2	v	Add (i) cost of can	in the second	0	4	0
1	1	-	(ii) overhead charges		0	2	0
						15	2
			Hence, cost of an A 2½ can of plum jam	•••		15	2
				a marketine	A CONTRACTOR &		
			(4) Pineapple Jam.				•
			1. Pineapples 4 at Re. 0-8-0 each	***	2	0.	0
			2. Sugar 3 lb. 11 oz. @ Re. 0-9-0 per lb.		2	1	2
			3. Limes 5 @ 2 pies each	September 1	0	0	10
3	7	2	4. Charcoal ½ basket at Re. I per basket		0		0
19	13	3	5. Labour 1/3 man-day at Re. 1 per day	1.00	0	5	4
1	7	4	T. 1. (11)			15	4
2	0	0	Total cost of 5½ lb. jam				
2	0	0	Cost of 1 lb. jam		0	14	5
No.		_	Coot of Tib. jain	•••			
28	11	9					

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		Rs. A, p	To and Area of the Control of the Co
Cost of 2½ lb. jam (1 A 2½ can)	The second second	2 4	
Add (i) cost of can			Her
(ii) head charges	•••	0 0	Cos
(II) Head Charges		0 2 0	Add
Hence, cost of an A 22 can of pineapple jam.	Salara a de la companya de la compan	2 10 1	
Note:— The cost is very high on account of the hig	h cost of fruit.		Her
(5) Jak Jam			Note:
1. Jak fruit. 2 @ Rs. 1-8-0 each		3 0 0	
2. Sugar 9 lb @ Re. 0-9-0 per lb.	•••	5 1 0	(8) Woodappl
3. Tartaric acid 48 gr. @ Re. 0-3-6 per oz.		0 6 0	1. Woo
4. Charcoal, I basket	***	1 0 0	2. Sug
5. Labour I man-day		1 0 0	3. Tar
	Francisco Con	-	4. Cha
Total cost of 17 lb. jam	•••	10 7 0	5. Lab
Hence, cost of 1 lb. jam	•••	0 9 10	÷
Cost of 2½ lb. jam (A 2½ can)		1 8 7	Hei
Add (i) cost of can	***	0 4 0	
(ii) overhead charges	and distribution for the		Cos
(II) Overhead Charges		0 . 2 0	Ad
Hence, cost of an A 2½ can of jak jam		1 14 7	
(6) Banana Jam.			He
1. Bananas. 61 @ Rs. 2-2-0 per 100		1 4 8	(9) Guava Je
2. Sugar 7½ lb. Re. 0-9-0 per lb.		4 1 3	
3. Tartaric acid, 38 gram @ Rs. 0-3-6 per oz.	Contract Lake	0 4 9	1. Gue
4. Charceal 2 basket at Re. I per basket		0 8 0	2. Sug
5. Labour 2 man-day		0 8 0	3. Tai
J. Labour & man-day		0 0 0	4. Ch
Cost of 5 x A 2½ cans (13 3/8 lb. jam)		6 10 8	_ 5. Lat
Cost of 1'lb. of jam		0 8 0	Co
Cost of 1 ib. of June	h A sullivers		He
Cost of jam in an A 2½ can	the decision of	1 5 4	rie
Add (i) cost of can	or in American Walls	0 4 0	Co
(ii) overhead charges		0 2 0	Ac
(11) Over 11 and over 12 and over 12 and over 12 and 12 an	All rath here is		A CONTRACTOR OF THE PARTY OF TH
Hence, cost of an A 2½ can of banana jam		1, 11 4	He
(7) Custard apple Jam.			
[. Custard apples, 54 @ Rs. 5/- per 100	(1941 - 1941). The same	2 11 2	(10) Orange
2. Sugar, 3 ib. 3 oz. @ Re. 0-9-0 per lb.		1 12 7	1. Ma
3. Tartaric acid, 17 gram @ Re. 0-3-6 per oz.	- 12 A 10 A 1 A 1	0 2 2	2. Su
4. Charcoal, 1/8 Basket @ Re. I per basket		0 2 0	3. Ch
5. Labour 1/8 man-day at Re. 1 per day	MET AS SELECTION OF THE SE	0 2 0	4. Lal
J. Edsar , o man day at 110 . Pt			
6. Cost of 5 lb. 5 cz. jam	64617%	4 13 11	CS

	Economico 3				
D.	1000 1000 1000 1000 1000 1000 1000 100		Rs.	A.	P.
Rs. A. p			0	14	8
2 4	Hence, cost of 1 lb. jam  Hence, cost of 1 lb. jam  (lx A 2½ can)		2	4	8
0 4	Hence, cost of 1 lo. jam (1 x A 2½ can)	***			
0 2 0	Cost of 22 10. Jan	•••	0	4	0
		•••	0	2	0
2 10	(ii) overhead charg	Carlo (Carlo Sa			MISSERIE .
- 10	Hence, cost of an A 22 can of custard apple jam	***	2	10	8
	Hence, cost of an A 22 can of each 1	as taken in the			<u> </u>
	in the state of th				
	Note: The cost is high since the yield of jam is low due				
	Note:- The cost is high since the experimental lots. to losses in handling small experimental lots.				
and 100 100 100 100 100 100 100 100 100 10	10 10000				
3 0 0					
5 1 0	(8) Woodapple Jam.		0	4	6
0 6 0		The second	0	13	6
1 0 0	1. Woodapples, 9 at 0—9 — 0 per lb. 2. Sugar, 1 lb. 8 oz. @ Re. 0—9—0 per lb. 2. Sugar, 1 lb. 4 com at Re. 0—3—6 per oz.		0	0	10
1 0 0		Will Landson	SECTION OF THE		
		- ***	0 2	2	0
10 7		•••		U	U
10 7 0	5. Labour 1/0 mass		- X		
	Cost 3 3/16 lb. of jam.	•••	1	6	10
0 9 10	Cost ) )/ 10 lb. 02 )		_		
	C.1.IL. Jam		0	7	2
1 8 7	Hence, cost of 1 lb. jam				
0 4 0			1	1	5
0 2 0	Cost of 2½ lb. jam (1 x A 2½ can)	***	0	4	0
	Add (i) cost of can				
1 14 7	(ii) overhead charges	and the same	0	2	0
1 14 7					-
-	Hence, Cost of an A 2½ can of Woodapple jam	***	1	7	5
	Hence, Cost of the 1-2				
1 4 8	(9) Guava Jelly.		4		
4 1 3	1. Guavas, 36 lb. 14 oz. at Re. 0-1-0 per lb.		2	5	0
0 4 9	2. Sugar 32 lb-6 oz. at Re. 0-9-0 per lb.		18	3	5
0 8 0	3. Tartaric acid,, 5 oz. at Re. 0-3-6 per oz.	•••	-1	1	6
0 8 0	4. Charcoal 2½ baskets at Re. I per basket		2	8	0
	4. Charcoal 22 baskets at Ne. 1 per basket		2	8	0
6 10 0	5. Labour 2½ man-days at Re. 1 per day	MARKET STATE			
6 10 8			-26	0	11
	Cost of 46 3/8 lb. of jelly		26	9	11
0 8 0			-		
	Hence, cost of 1 lb. jelly	***	0	9	2
1 5 4			_		
0 4 0	Cost of $2\frac{1}{2}$ lb. jelly (1 x A $2\frac{1}{2}$ can)	oh jil i i i i i	1	6	11
0 2 0	Add (i) cast of can		0	4	0
			0	2	0
1 11	(ii) overhead charges	***			
1, 11 4				12	1.1
	Hence, cost of an A 2½ can of guava jelly.		1	12	11
	The state of the s		Marie de la		
MARK OF THE PARTY	(10) Orange marmalade				
2 11 2					
1 12 7	1. Marmalade oranges, 115 at Re. 1 per 100	•••	1	2	5
0 2 2	2. Sugar, 13 lb, 7 oz. at Re. 0-9-0 per lb.	9. S	7	9	0
0 2 0	3. Charcoal, 14 baskets at Re. 1 per basket		1	4	0
0 2 0	4. Labour, I man-day		1	0	0
3 2 0	7 1 100000 1000			- 4	
4 10 11	Cost of 174 lb (7 A 21) - L marmalada	1/1	10	15	5
4 13 11	Cost of 17½ lb. (7 A 2½ cans) of marmalade	Y			
D. Comments of the second		Section 2			
			THE RESERVE OF THE PERSON NAMED IN		

git.

80

	Hence, cost of 1 lb. of marmalade	Rs,	A. 10	P. 2
	是一点,1000000000000000000000000000000000000			-
	Cost of 1 x A 2½ can marmalade	0	9	1
	Add (i) cost of can	0	4 2	0
	(ii) overhead charges			0
	Hence, cost of an A 22 can of orange marmalade		15	1-1
	IV. DRIED PRODUCTS.			
(1)	Banana Figs			
	1. Bananas (Pacha Arati, Local variety) 200 at Rs. 2 per 100	4	0	0
	2. Sulphur ½ oz. at Re. 0-2-0 per oz	0	1	0
	3. Charcoal 2 baskets at Re. I per basket	2	0	0
	4. Labour 1/4 man-day at Re. 1 per day	0	4	0
	Cost of 6½ lb. of figs	6	5	0
	Hence, cost of 1 lb. of barana figs, loose	0	15	6
(2)	Banana Flour			
	1. Bananas (Bontha Arati variety) 75 at Rs. 1-8-0 per 100	1	2	0
	2. Charcoal, I basket at Re. I per basket	1	0	0
	3. Labour, 1/4 man-day at Re. I per day	0	4	0
	Cost of $2\frac{1}{2}$ lb, flour	2	6	0
	Hence, cost of 1 lb. of banana flour (loose)	0	15	3
	V. CANDIED PRODUCTS.			
(1)	Ginger Candy			
	1. Ginger 7 lb. at Re. 0-7-0 per lb	3	1	0
	2. Sugar, 4 lb. at Re. 0—9—0 per lb.	2	. 4	0
	3. Charcoal, ½ basket at Re. I per basket	0	8	0
	4. Labour ½ man•day	0	8	0
	Cost of 3 lb. candy	6	5	0
	Hence, cost of 8 lb. ginger candy loose	2	1.	8
(2)	Citrus peel candy			
	1. Sugar, 4 lb. at Re. 0-9-0 per lb	2	4	0
	2. Common salt, 1 lb. 13 oz. at 0-0-9 per lb	0	1	3
	3. Charcoal, 1/3 basket at Re. 1 per basket	0	. 5	4
	4. Labour, 1/4 man-day	0	4	0
	Cost of 3 lb. candy	2	14	7
	Hence, cost of 1 lb. citrus peel candy (loose)	0	15	6

(3) Jak candy
1. Jak fruit

2. Sugar, 3

3. Charcoal 4. Labour

- Cost of

Hence,

Note: T

(4) Kumquat can

1. Kumqui 2. Sugar, 9

3. Charcos

4. Labour

Cost of

Hence,

Note:

(1) Sweet Mnage

1. Mango

2. Sugar,

3. Comme

4. \*Spice

5. Vinega

6. Charco

7. Labour

Cost o

Hence

Note: -

\* Spices, "

0 11

Economics of Fruit Preservation		{	81
	Re	Δ	P.
			0
(3) Jak candy	1	11	0
1. Jak III. 3 lb. at Re. 0—9—U per Ib.	0	5	4
2. Sugar, 1/3 basket at Re. 1 per basket	0	4	0
Labour 1/4 man-day at Ne. 7 per day			
4.	3	0	4
Cost of 2 lb. candy	-	0.70	
Hence, cost of 1 lb. of jak candy (loose)	1.	8	2
		-	
Note:— The syrup can be bouled as Jan syrup.			
and the second s			
(4) Kumquat canas 309 at Re. 0-2-0 per 100	0	6	2
	5		0
2. Sugar, Sugar, Charcoal, 13 baskets at Re. 1 per basket	1	160	0
J. Charletter 1 man-day	-	U	0
	7	15	2
Cost of 7 lb. candy		12	-
	1	2	2
Hence, cost of 1 lb. kumquat candy (100se)			
by spread over 8-10 days, but	they	can	b
Note:— The candying processes are spread over a strain of other	prod	icts.	
		7 2 3	
VI. PICKLES AND CHUTNEYS.			
(1) Sweet Mnago Chutney			
1 Mangoes — Bangalora, 30 fruits (25½ lb.) at Rs. 7—8—0 per 100	2	4	0
2 Sugar 14 lb. at Re. 0—9—0 per lb			0
3. Common salt, 14½ oz. at Re. 0—0—9 per lb	0		8
4 *Spices, onion, chillies and ginger	1	20.00	0
5. Vinegar, 3½ lb. at Re. 0—12—0 per lb	2		6
6. Charcoal 14 baskets at Re. I per basket			0
7. Labour 1 man-day	1	U	·
	16	13	7
Cost of 24 3/8 lb. chutney		-	
	1	Rs.	Rs. A.

Note:— The chutney may be packed in 1 lb. glass jars with bakelite caps. It is a very good product.

\* Spices, etc., used.

1 8

•				Rs.	A.	Ρ.
	Cloves	6	tolas	. 0	4	0
	Cinnamon	6	tolas	0	4	0
	Cardamom	3	tolas	0	3	0
	Mace	3	tolas	0	3	0
	Aniseed	6	tolas	0	4	0
	Cumin	6	tolas	0	2	0
	Red Chillies	12	tolas	0	2	0
	Onions	13	lb.	0	3	0
	Ginger	6	tolas	0	2	0
			Total	1	11	0

Hence, cost of 1 lb. sweet mango chutney, loose