

Assessment of the Shikarpur Pickle Value Chain

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Abstract:

Pickles are one of the most important byproducts of unripe mangoes traditionally made at the household and industry level. Pickles are produced in Shikarpur, city of province of Pakistan and marketed all over the country. This study undertaken with the objectives to observe, document and evaluate the Shikarpur pickle value chain and to document the benefits to women/households that result from their involvement in pickle mango production. A sample of 27 key respondents (30% of total population) was selected for in-depth interviews to study Shikarpur pickle value chain. Besides, 150 consumers from 3 cities of Sindh namely Shikarpur (50), Hyderabad (50) and Hyderabad (50) were interviewed. Survey results revealed that profit margins for retailers was around 20%, share of mango pickles was around 60%, the highest consuming province of pickles was Balochistan (45%), number of labourers was as much as 300 workers during mango pickle manufacturing season starting from April to August. Significant role of females in pickle producing was recorded from the fact that 80% of the wage labourers were females. Wage rate offered to female labourers was Pak. Rupee one per one kg of

unripe mango cutting. On an average, a female earned Rs. 300-350 per day. Consumers' survey revealed that overwhelming majority (91%) of respondents was male. Total purchase of pickles per household was estimated at 7.25 kg/year; out of which 4.14 kg (57%) were consumed in household per year while remaining 3.11 kg per year (43%) were gifted to relatives and friends. Consumers' preference survey revealed that pickles of Shikarpur were preferred because of popularity (famous) followed by soft pulp, attractive colour, low-priced, more varieties, better smell, more spicy, more shelf life, less acidic to throat and stomach problems.

Key words: Pickles, Shikarpur, Value Chain

1. Introduction

1.1 Rationale/ Background

Pickles are one of the most important by-products of unripe mangos traditionally made at the household as well as at the industry level (GoP, 2013). Mango pickles of Shikarpur are famous in Pakistan for their taste and quality while Shikarpur is not a major mango growing area. Quality of mango pickles of Shikarpur is attributed to particular mango varieties of Sindh and Punjab provinces of Pakistan known as "Desi Variety" and amount of spices mixed with pickles as well as quality of water. According to a rough estimate, more than one and half dozen different varieties of mango pickles are produced and marketed. Historically, two families (Siddiqui and Soomro) started business of making pickles and selling in Shikarpur town. Presently, quite a large number of families are involved in pickle industry and women are reportedly involved in production process; however, their role in business of pickles is very limited.

This existing base of pickle production in Shikarpur Sindh can be further developed to have more research on production technology and marketing analysis. The available literature reveals that very small amount of research has been devoted to this important industry. Hence, this research project has been proposed on “Production Technology and Marketing Analysis of Mango Pickles.”

1.2 Objectives of the Study

- i. To observe, document and evaluate the Shikarpur pickle value chain.
- ii. To document the benefits to women/households that result from their involvement in pickle mango production.

2. Methodology

2.1 Major Areas of Marketing Research

The market research study was conducted using the following two major sections:

- A) Value Chain of Pickles of Shikarpur;
Study Area: Shikarpur City
- B) Pickle Consumer Survey (150 Respondents);
Study Area: Shikarpur (pickle producing city), Sukkur (major market in northern Sindh),
Hyderabad (second largest city and representing mid and southern Sindh).

2.2 Population and Sample

In all, a sample of 177 respondents was selected. Twenty seven (27) key respondents which constituted 30% of population was selected for in-depth interview to collect information about value chain of pickles of Shikarpur. In all, there were 16 pickle producers at the industry level while 4 at household level. Out

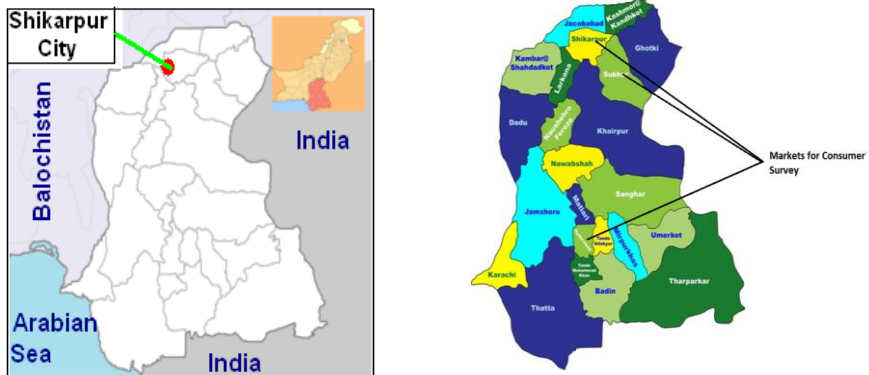
of these, four (4) key respondents (owners) were interviewed. Two (2) of them were leading the industry in terms of quantum of the pickles produced while third and fourth were famous for quality of pickles produced. All four pickle producers at household level were included in the study. Likewise, 4 managers of wholesale outlets out of 20, 10 retail shop managers and 5 pickles vendors were selected. Efforts were made to collect information about technical perspectives (recipes) of pickle making and its (pickle) value chain. Three main techniques of qualitative research viz. in-depth interviews, observation recording during visit of factories, and photography were applied to develop research report (Bernard, 1995; Denzin, 2000). During last week of May 2013, Shikarpur city was visited to collect basic information about pickle industry. Local resources were used to introduce with the owners of manufacturing industries of pickles. It was observed that without use of local resources, it was very difficult to conduct interviews. Semi structured interview guide was developed in advance to collect basic information about the industry. Although direct questions regarding quantum of pickles produced during the season were avoided; the key respondents were very conservative in providing information about the quantum of sale and profits earned.

Table 1: Selection of Sample from various Categories of Mango Pickle Value Chain

Section	Category	Population (N)	Sample (n)
A. Value Chain of Pickles of Shikarpur;	Manufactures	16	04
	Households producing pickles	04	04
	Wholesale outlets	20	04
	Retail Shops	30	10
	Pickle Vendor	20	05
	Total	90	27 (30%)
B. Consumers Survey	Consumers	Very Large around 50 million	150 ($\pm 8\%$ Error rate)
Grant Total			177

Consumer survey was conducted in three major cities of Sindh viz. Shikarpur (pickle producing city), Sukkur (major market in northern Sindh), and Hyderabad (second largest city and representing mid and southern Sindh); 150 consumers (50 from each city) were selected by accidental sampling method (Marshal, 1996). Figure 1 shows map of Sindh Province of Pakistan and 3 cities where consumer survey was conducted. A sample of 150 respondents for very large population reflected the population at $\pm 8\%$ error rate (Tryfos, 1996; Wunsch, 1986).

Figure 1: Map of Sindh Province of Pakistan Showing Study Area



3. Results

The collected information has been segregated into two sections: 1) Value Chain of Pickles of Shikarpur; and 2) Pickle Consumer Survey

3.1 Value Chain of Pickles of Shikarpur

3.1.1 Shikarpur City

Shikarpur is the capital of Shikarpur District in Sindh province of Pakistan. It is situated about 29 km west of the right bank of the Indus River, with a railway station, 37 km north-west of Sukkur. Shikarpur is famous for its Aachar (pickles) and sweets. It has a large market and manufactures of cotton, cloth and pottery. The city has rich history and cultural heritage.

Shikarpur used to be called "Paris of East" because of its modern buildings on the pattern of Shanzelize and its perfume (Ittar) industry (Mujeeb, 2003).

3.1.2 Manufactures of Pickles

As information provided earlier that there were 16 pickle manufactures while 4 households were also involved in manufacturing and sale of pickles. There was variation in quantum of pickles produced, number of employees, quality of pickles, and prices. Manufactures produced pickles at large scale but quality and prices of pickles produced at the household was at higher side.

3.1.3 Role of Female in Manufacturing of Pickles

In leading pickle manufactures, number of laborers was as much as 300 workers during mango pickle manufacturing season starting from April to August. Significant role of females in pickle producing was recorded from the fact that 80% of the wage laborers were females. These females were living in the neighboring villages and vicinities of Shikarpur city. There were around 20-30 permanent employees. Among them, 3-4 were pickle making experts, around 10 Assistants while the remaining persons were laborers and watchmen. Interestingly, all the permanent employees were male. Monthly salary for pickle making experts was around Rs. 15,000/ and Rs. 12,000 for Assistants while Rs. 8,000 is offered to other staff including laborers and watchmen. Although there was variation in number of laborers from one factory to other factory, wages were almost the same.

Females seasonally appointed are waged according to weight of unripe mangoes prepared (cut in pieces) for pickles. Common wage rate offered to female laborers was Rupee one per one kg of unripe mangoes. On an average, a female earned Rs. 300-350 per day. Payments were paid on weekly basis. Manufacturers have developed good relations with the female

laborer to retain the workforce especially during mango season. They offer loans to females for their marriages and health problems. These loans are free of interest and recovered in easy instalments. One time in a week, food (commonly rice) is offered during lunch time on Thursday. During visit, it was observed that females brought their children to serve the food offered by pickle manufacturers. No significant health issues were brought into notice; however, hand fingers of the laborers handling the spices and mixing the pickles were observed to be yellowish.

3.1.4 Purchase of Inputs (Unripe Mangoes, Spices and Packaging Material)

Regarding supply of input, it was informed that pickle industry has developed very good relations with industry providing raw material i.e. unripe mangoes, spices, and packaging material. There are a few mango orchards in Shikarpur district; hence, Hyderabad and Mirpurkhas districts are visited for the purchase of unripe mangoes. For the consistent supply of mangoes during the mango season, pickle industry was trying to have business relations with owners of orchards in Hyderabad, Tando Allahyar, and Mirpurkhas.

Spices were reportedly purchased from Sukkur, Kunri, Nawabshah and some cities of Punjab province. In comparison of unripe mangoes, prices of spices and packaging material have increased at faster pace especially during the last 5 years. It was further reported that salt of Khewra of Punjab province and chilies of Kunri of Sindh province are used. Packaging material is purchased from Sukkur, Karachi and Lahore. Although credit has not been offered widely by the input sellers, but in certain cases, about 33% of the purchase amount can be delayed from 2 to 4 weeks on the account of transactions through banks.

3.1.5 Marketing and Sale of Pickles

Each factory has at least one wholesale outlet in a city, however, vendors could also purchase from factories directly. Thirteen (13) out of 16 (81%) manufactures had wholesale outlets at Shikarpur city while three factories had wholesale outlets in neighbouring cities: M/S Jameel Achar and M/S Khadim Achar had wholesale outlet at Jacobabad and M/S Ghaffar Achar at Larkana. It was also informed that wholesale outlets were run by family members (especially brothers or sons) of factory owners.

In certain cases, more than one wholesale outlet was recorded and major cities for the pickle business were Jacobabad, Sukkur and Hyderabad in Sindh province and Quetta in Balochistan province of Pakistan. However, households producing pickles, sale their products from houses/shops and consider their quality superior in comparison of those produced in factories at the large scale. There were around 30 small retailing shops in Shikarpur city. Mostly pickles are supplied to shops on cash basis and profit margins were around 20%. Retailers reported that they were happy with the profits earned through sale of pickles. "it is much better than working as a laborer since they have their own business." Besides, there were around 20 pickle vendor selling pickles in buses, wagons and trains.

Data collected regarding major types of pickles reveals that mango pickles is around 60% followed by 30% mix (mango with vegetables and fruits), and 10% others (carrots, lemon, and spinach etc.), as shown in Figure 2. The highest consuming province of pickles was recorded to be Balochistan consuming about 45% of the pickles produced in Shikarpur followed by Sindh 30%, Khyber Pakhtoonkhwa (15%), and Punjab (10%), results are presented in Figure 3. It was further reported that in Balochistan, pickles are consumed as curry while in other provinces it is used with salad. In Balochistan, farmers

especially livestock herders use pickles with bread as a lunch meal when they go with their herds to grazing fields.

Figure 2: Sale of Pickles by Type

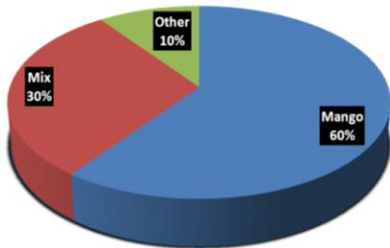
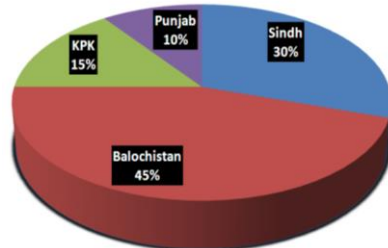


Figure 3: Sale of Pickles by Province



Sale of pickles by size of packages revealed that 35% of the pickles produced in Shikarpur is sold in one kg packing, 10% each for two and three kg packing, 15% in five kg, 25% in ten kg while only 5% in small packing of half kg (Figure 4). Efforts were made to know the distribution of consumer's rupee on purchase of inputs and hiring laborers as well as profit margins for manufacturers and retailers. As earlier reported that manufacturers and wholesalers were the same, hence, their profit margins were not isolated.

On an average basis, about 20% of the consumer's rupee went to retailers and 43% was used by manufactures for purchase of inputs namely unripe mangoes (10%), spices (15%), and packaging material (10%) as well as for the payment of laborers making pickles(8%). The rest of consumer's rupee is the profit of manufactures (37%) as shown in Figure 5.

Figure 4: Sale of Pickles by Size of Packing

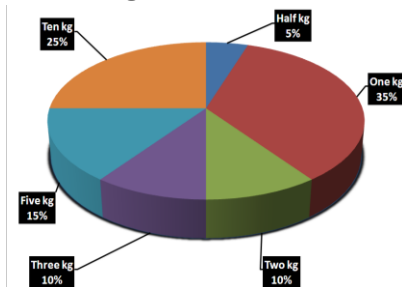
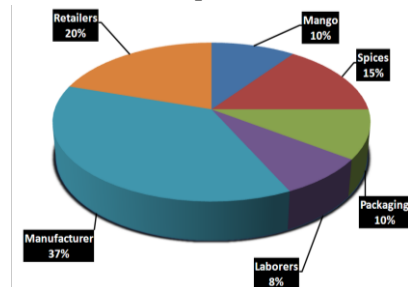


Figure 5: Distribution (%) of Consumers Rupee



3.1.6 Perceptions about Pickle Industry

- ❖ There was no any other opinion except that pickle is really a profitable industry.
- ❖ Major strategy of extending business was pronounced to be establishing pickle business in different towns of Pakistan and capturing good market share especially in Quetta, Balochsitan.
- ❖ Low level of credit flow from wholesalers to retailers and vendors was discussed which was very common especially during the last 10 years.
- ❖ Manufactures of pickles got loans from commercial banks up to Rs. 20 million. During pickle making season, credit facilities were availed from private money lenders at the rate of 30% per annum against the government rate of 15-20%.
- ❖ Mobile phone is a common source of communication.
- ❖ Outside Merchants of pickles are very much reluctant to visit Shikarpur due to poor law and order situation especially increasing kidnapping cases in Shikarpur. Therefore, the most important problem the industry facing is poor implementation of law in the city and rural areas.

3.2 Pickle Consumer Survey

3.2.1 Personal Profile of Respondents

Table 2 shows personal profile of respondents. The table shows that overwhelming majority (91%) of respondents was male, on an overall basis. This proportion remained almost constant and ranged from 90% (for Sukkur and Hyderabad) to 94% recorded for Shikarpur. This may reveal male dominant society and mostly purchasing of household items is done by male members. Mobility of females for purchasing household items may be attributed to size of town /city. In large cities, mobility of females is relatively more in comparisons of towns and villages. Sukkur and Shikarpur cities are relatively large markets than Shikarpur, therefore, proportion of females respondents is higher.

Data regarding age of the respondents revealed that about one thirds (33%) of the respondents were within age group of 15-30 years while majority of the respondents were within age group of 31-45 years. Proportion of respondents having age above 45 years was 7% only. Summarized information regarding profession revealed that on an overall basis, agriculture was major profession as reported by 23% of the respondents, followed by business (19%), private employment (19%), skilled labor (17%), unskilled labor (13%), and Government employee (9%).

Table 2: Personal Profile of Respondents

		City/Town							
		Shikarpur		Sukkur		Hyderabad		Overall	
		Count	%	Count	%	Count	%	Count	%
Gender	Male	47	94.0	45	90.0	45	90.0	137	91.3
	Female	3	6.0	5	10.0	5	10.0	13	8.7
	Total	50	100.0	50	100.0	50	100.0	150	100.0
Age Group	15 - 30 years	16	32.0	21	42.0	12	24.0	49	32.7
	31 - 45 Year	26	52.0	29	58.0	36	72.0	91	60.7
	45 - 60 years	8	16.0	0	0.0	2	4.0	10	6.7
	Above 60 years	0	0.0	0	0.0	0	0.0	0	0.0
	Total	50	100.0	50	100.0	50	100.0	150	100.0

Profession	Agriculture	15	30.0	11	22.0	9	18.0	35	23.3
	Business	8	16.0	10	20.0	11	22.0	29	19.3
	Private Employment	7	14.0	11	22.0	10	20.0	28	18.7
	Skilled Labor	9	18.0	8	16.0	8	16.0	25	16.7
	Unskilled Labor	7	14.0	5	10.0	8	16.0	20	13.3
	Govt. Employment	4	8.0	5	10.0	4	8.0	13	8.7
	Total	50	100.0	50	100.0	50	100.0	150	100.0

3.2.2 Household Size

Table 3 reveals average household size of the respondents. Household size is defined as number of family members who collectively cook and share the same kitchen. On an overall basis, household size was computed at 9 persons per household which was up to 16 members (maximum). Relatively smaller size was computed as 8.47 members for Hyderabad which is reflective of the fact that in larger cities, household size is relatively smaller.

Table 3: Average Household Size

	City/Town			
	Shikarpur	Sukkur	Hyderabad	Total
Minimum	5	4	2	2
Maximum	15	16	16	16
Mean	9.18	9.39	8.47	9.01
SE	.383	.409	.352	.222

3.2.3 Frequency of Purchasing Pickles

Data regarding frequency of purchase of pickles have been provided in Table 4. Mode of the data reflected that majority (73%) of the respondents purchased pickles after every 4-6 month time period, on an overall basis. Significant variation was recorded when data were segregated by city of survey. Respondents from Shikarpur informed that mostly (54% of respondents), they purchased pickles after every 2-3 months. There were only 6% of the respondents who purchased pickles on monthly basis.

Table 4: Frequency of Purchasing Pickles

		City/Town							
		Shikarpur		Sukkur		Hyderabad		Overall	
		Count	%	Count	%	Count	%	Count	%
Frequency	Weekly	0	0.0	0	0.0	0	0.0	0	0.0
	Fortnightly	0	0.0	0	0.0	0	0.0	0	0.0
	Monthly	3	6.0	3	6.0	0	0.0	6	4.0
	2 - 3 months	27	54.0	0	0.0	5	10.0	32	21.3
	4 - 6 months	19	38.0	46	92.0	45	90.0	110	73.3
	7 - 9 months	1	2.0	1	2.0	0	0.0	2	1.3
	10 - 12 months	0	0.0	0	0.0	0	0.0	0	0.0
	Total	50	100	50	100	50	100	150	100

3.2.4 Total Purchase of Shikarpur Pickles (kg/year) by Frequency

Table 5 reveals purchase of Shikarpur pickles (kg/year) by frequency. The table reveals that on an overall basis total purchase was estimated at 7.25 kg/year. Data regarding quantity of purchase and frequency of purchase unveiled significant relationship. Total purchase for the respondents who purchased on monthly basis was reported to be 9.83 kg/year, 8.09 kg/ year for 2-3 months, 6.97 kg/year for 4-6 months, 1.50 kg/year for 7-9 months. There was also variation in purchase of total consumption from one city to another city; yearly purchase per respondent in Shikarpur was 7.80 kg/year followed by Sukkur (7.70 kg/year) and Hyderabad (6.26 kg/year).

Table 5: Total Purchase of Shikarpur Pickles (kg/year) by Frequency

Frequency of Purchase		City/Town			
		Shikarpur	Sukkur	Hyderabad	Total
Monthly	Mean	7.67	12.00		9.83
	SE	.882	5.292		2.587
2 -3 months	Mean	8.11		8.00	8.09
	SE	.949		.837	.807
4 - 6 months	Mean	7.68	7.57	6.07	6.97
	SE	1.023	.793	.648	.462

7 - 9 months	Mean	2.00	1.00		1.50
	SE	0	0		.500
Total	Mean	7.80	7.70	6.26	7.25
	SE	.649	.801	.593	.398

3.2.5 Household Consumption, Gifted and Price of Pickles of Shikarpur

Table 6 unveils household consumption, gifted to others, total purchase and price of pickle of shikarpur. The table shows that out of total purchase 7.25 kg year, 4.14 kg (57%) are consumed in household per year while remaining 3.11 kg (43%) gifted to relatives and friends. Household consumption of shikarpur pickle was recorded relatively more for Shikarpur (4.98 kg/year) in comparison of Sukkur (4.40 kg/year) and Hyderabad (3.04 kg/year). Average price of vinegar pickle of Shikarpur was Pak Rs. 107 per kg which ranged from Rs. 100 per kg for Shikarpur, Rs. 113.80 for Sukkur, and Rs. 125.68 for Hyderabad.

Table 6: Household Consumption, Gifted and Price of Pickles of Shikarpur

		City/Town			
		Shikarpur	Sukkur	Hyderabad	Total
Household consumption(kg/year)	Mean	4.98	4.40	3.04	4.14
	SE	.302	.384	.223	.190
Gifted to others (kg/ year)	Mean	2.82	3.30	3.22	3.11
	SE	.417	.474	.418	.251
Total Purchase (kg/year)	Mean	7.80	7.70	6.26	7.25
	SE	.649	.801	.593	.398
Price (Pak Rs./ kg)	Mean	100.00	113.80	125.68	113.16
	SE	1.717	5.943	2.702	3.236

3.2.6 Reasons for Preference of Shikarpur Pickles

Table 7 reveals the average values regarding perceptions of respondents about reasons for purchase of Shikarpur pickles. Five point likert scale (1being strongly agree; 2 being agree; 3 being undecided; 4 being disagree; and 5 being strongly disagree) was used to collect data. The highest reasons for preference for purchasing Shikarpur pickles was reported its popularity in the country (1.82); followed by soft pulp (2.09),

attractive color (2.12), low-priced (2.15), more varieties (2.25), better smell (2.25), more spicy (2.35), more shelf life (2.42), less harmful to throat (2.45), and less harmful to throat (2.47).

Table 7: Reasons for Preference of Shikarpur Pickles

	City/Town				
	Shikarpur	Sukkur	Hyderabad	Total	RANK
famous	1.90	1.92	1.64	1.82	I
soft pulp	2.14	2.12	2.00	2.09	II
Colour is attractive	2.00	2.38	1.98	2.12	III
Low priced	1.84	2.72	1.90	2.15	IV
More varieties	2.12	2.70	1.92	2.25	V
Better Smell	1.94	2.08	2.72	2.25	VI
More spicy	2.12	2.58	2.36	2.35	VII
More shelf-life	2.00	2.64	2.62	2.42	VIII
Less acidic to throat problem	2.66	2.16	2.53	2.45	IX
Less acidic to stomach problem	2.50	2.29	2.62	2.47	X

Scale Used: 1= Strongly Agree; 2 = Agree; 3 = Undecided; 4 =Disagree; 5 = Strongly Disagree

4. Conclusion

Pickles are one of the most important byproducts of unripe mangoes traditionally made at the household and industry level. Pickles of Shikarpur are famous in Pakistan for their taste and quality while Shikarpur is not a major mango growing area. A study was conducted with the objectives to observe, document and evaluate the Shikarpur pickle value chain and to document the benefits to women/households that result from their involvement in pickle mango production. The study was based upon in-depth interviews with the 4 leading pickle manufactures, 4 household heads of producing pickles at home level, 4 wholesalers and 10 retailers as well as 150 consumers from 3 cities of Sindh namely Shikarpur (50), Hyderabad (50) and Hyderabad (50). There were 16 pickle manufactures while 4 households were also involved in manufacturing and sale of pickles. Total number of wholesalers

was about 12 while around 30 retail shops were recorded in Shikarpur city. Mostly pickles are supplied to shops on cash basis and profit margins were around 20%. Data collected regarding major types of pickles reveals that mango pickles is around 60% followed by 30% mix (mango with vegetables and fruits), and 10% others (carrots, lemon, and spinach etc.). The highest consuming province of pickles produced in Shikarpur was Balochistan (45%) followed by Sindh (30%), Khyber Pakhtoonkhwa (15%), and Punjab (10%). On an average basis, about 20% of the consumer's rupee went to retailers and 43% was used by manufactures for purchase of inputs namely unripe mangoes (10%), spices (15%), and packaging material (10%) as well as for the payment of labourers for making pickles(8%). The rest of consumer's rupee was the profit of manufactures (37%). Number of labourers was as much as 300 workers during mango pickle manufacturing season starting from April to August, as reported by leading pickle manufacturers. Significant role of females in pickle producing was recorded from the fact that 80% of the wage labourers were females. These females were living in the neighbouring villages and vicinities of Shikarpur city. Common wage rate offered to female labourers was Rupee one per one kg of unripe mango cutting. On an average, a female earned Rs. 300-350 per day. Payments were paid on weekly basis. Manufacturers have developed good relations with the female labourer to retain the workforce especially during pickle season. They offer loans to females for their marriages and health problems. These loans are free of interest and recovered in easy instalments. Consumers' survey revealed that overwhelming majority (91%) of respondents was male. Total purchase of pickles per household was estimated at 7.25 kg/year; out of which 4.14 kg (57%) were consumed in household per year while remaining 3.11 kg per year (43%) were gifted to relatives and friends. Average price of vinegar pickle of Shikarpur was Pak Rs. 107 per kg. Consumers' preference survey revealed that pickles of

Shikarpur were preferred because of popularity (famous) followed by soft pulp, attractive colour, low-priced, more varieties, better smell, more spicy, more shelf life, less acidic for throat and stomach problems.

5. Recommendations

Major Issues/Problems	Recommendations
Low level of credit flow from wholesalers to retailers and vendors was discussed which was very common especially during the last 10 years.	Provide soft loans and extend limits of loans
Manufactures of pickles got loans from commercial banks up to Rs. 20 million. During pickle making season, credit facilities were availed from private money lenders also at the higher rate of 30% per annum against the government rate of 15-20%.	
Outside Merchants of pickles are very much reluctant to visit Shikarpur due to poor law and order situation especially increasing kidnapping cases in Shikarpur. Therefore, the most important problem the industry facing is poor implementation of law in the city and rural areas.	Provide safety to business community

6. Acknowledgements

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