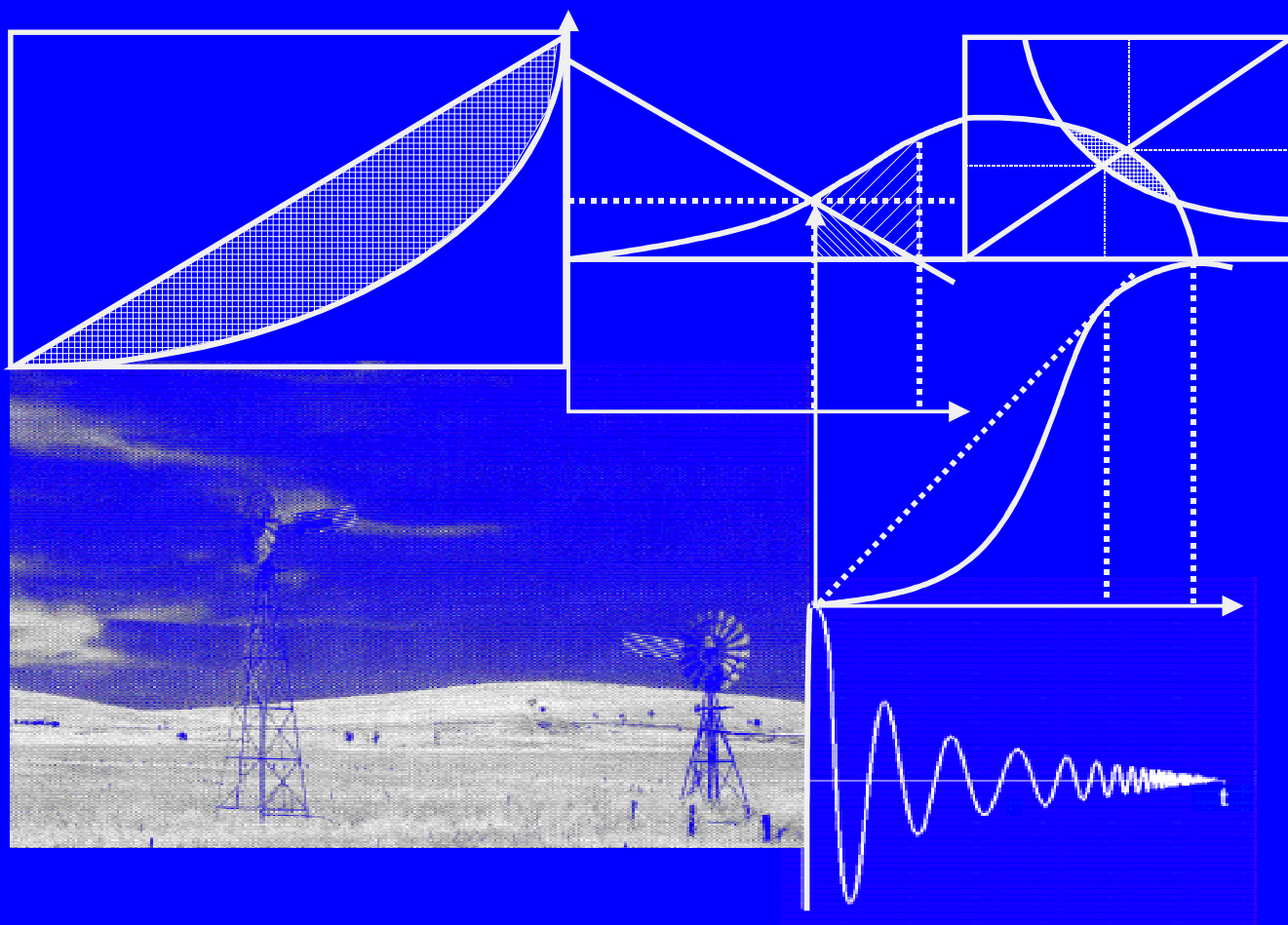


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Urban Consumer Attitudes to Beef in China¹

Ralph A. van Gelder², Adrienne A. van Gelder³ and Hu Dinghuan⁴

Abstract

The ability of domestic and foreign entrepreneurs to market beef in China is not related to a simple economic equation between supply and demand. It is essential to understand the attitudes of Chinese people to beef. These attitudes arise from traditional and historical experiences, as well as social and cultural understandings. Current consumption patterns of beef, in China, are also affected by recent history, social migrations, recent urbanisation and living conditions. The data on which this paper is based is not exhaustive. It raises some issues which previous reports seem to have overlooked. The societal questions it develops need future thorough research before a confident marketing initiative for beef in China can be undertaken.

Key words: China, beef, marketing, consumption, attitudes, tradition, survey.

Introduction

Field surveys conducted during July and August 1997, as part of a study of the Chinese Beef and Beef Cattle Industry, formed the basis of this paper. The study, financed by the Meat Research Corporation (MRC) and the Australian Centre for International Agricultural Research (ACIAR), was co-ordinated through the University of Queensland.

The purpose of the survey was to gain an understanding of the attitudes of urban based Chinese household members to beef as a consumer item. The survey was mainly conducted in domestic households in Anhui Province, in three county cities (Lixin, Mengcheng, Guoyang), Fuyang, a Prefectural Capital and Hefei, the Provincial Capital. Additional survey data was collected in Shanghai and Beijing.

China has approximately 140 million cattle and buffalo (SSB, 1997, p.388) many of which are being displaced from farm work by small tractors and other mechanised equipment and, because of changes in Government policies, the cattle are now available for human consumption (Zhang & Longworth, 1998a). Mini-tractors in China increased from 7.5 million in 1992 to 9.2 million in 1996 (SSB, 1997, p.363).

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The Chinese Central Government, through policy initiatives, administrative and financial incentives, has supported the development of a beef cattle feedlotting industry. Superior genotypes from western countries have been introduced to commence a genetic improvement program of the existing cattle genotypes. Nutritional programs using urea treated surplus straw and grain from cropping programs have commenced (AGRITEAM, 1996, p.1.2).

Beef production in China has risen significantly from 269 kt. in 1980 to 4.9 million tonnes in 1996 (SSB,1997, p.390). Estimates of future incremental growth in beef output from the Chinese beef industry (Table 1) have been given by several authors (Beaumont & Colby, 1994; AACM, 1997; AGRITEAM, 1996; AMLC, 1996, EWCL, 1997) all indicating that increases in production of beef in China will outstrip demand. It is estimated (EWCL, 1997, p.48) that each year for the next five years China's beef production will rise by 650 kt., whereas domestic demand for consumption will rise by 630 kt.

Under a projected scenario of High GNP growth of 8% and low income elasticity (0.5), there would be an annual beef production surplus in China of approximately 958 kt. by 2005 (AGRITEAM, 1996, B-8). Similarly, in a situation of GNP Growth of 6% and income elasticity of 0.5 there would be a surplus of 1.7 million tonnes of beef in 2005. These figures assume that Chinese per capita consumption will rise from the 1994-95 estimate of 3.14 kg, to 4.88 kg, or 4.32 kg by the year 2005, respectively.

Table 1 : Chinese Beef Industry Forecasts

Report	Year 2000				Year 2005				Year 2010	
	Prodn.	Consumption			Prodn.	Consumption			Prodn.	Cons. /Capita
		Total	/Capita	Surplus		Total	/Capita	Surplus		
	kt.	kt.	kg.	kt.	kt.	kt.	kg.	kt.	kg.	
Min. Agric	4961		3.37		7132		4.71	9222		5.43
AGRITEAM										
GNP growth= 10% Income Elast.= 0.5	5878	5093	4.00	785						
AGRITEAM										
GNP growth=7% Income Elast.=0.5	5878	4739	3.73	1139						
AGRITEAM										
GNP growth=8% Income Elast.=0.5					7502	6544	4.88	958		
AGRITEAM										
GNP growth=6% Income Elast.=0.5					7502	5802	4.32	1700		
AMLC			3.1							
USDA					9000		6.8			
Beaumont	4244	4000	3.1							
AACM							7.0			8.96

Source : See text, various references.

Where unitary income elasticity values are used, together with high GNP growth, beef consumption is estimated to outstrip supply by approximately 5 million tonnes

annually by 2005, even when consumption reaches 9.28 kg per capita (AGRITEAM 1996, p.B-8). Other estimates indicate consumption of 7.00 kg per capita in 2005 and 8.96 kg per capita by 2010 (AACM, 1997, p.33).

One authority discusses Chinese beef production and consumption, comparing current consumption levels and patterns with projections for the years 2000, 2005 and 2010 (AACM, 1997, pp.32-34). This report quotes various Chinese beef production and consumption figures from reports by Beaumont & Colby (1994), USDA (1996), AGRITEAM (1996) and AMLC (1996). These reports infer that Chinese beef consumption will inevitably increase in conjunction with production and availability of beef on the domestic market and with the projected increases in disposable incomes of the Chinese population.

The USDA estimates quoted by AACM (1997) project an average annual consumption of 6.8kg of beef per capita in 2005, which being fifty to one hundred percent above current consumption, may be a little ambitious. The AMLC (1996) and Beaumont & Colby (1994) estimates of an intake of 3.1 kg per capita by 2000 may seem more appropriate. An intake of 6.8 kg per capita by the year 2005 would translate as a production figure of approximately 9.1 million tonnes.

The Chinese industry's capacity to increase production of agricultural products during the 1990's decade is well proven. The paper entitled *Innovation and Development of Chinese Table Food Composition in the 1990's* published by the Chinese Premier's working party, 9th February 1993, (van Gelder & Wu, 1993, p.2 & p.61), indicated that the Chinese Government estimated the total annual meat production required to feed the Chinese population in the year 2000 would need to be 39 million tonnes. In 1996, total production of meats was 59 million tonnes (SSB,1997, p.390).

China exported 30 kt. of fresh and frozen beef in 1996 (SSB, p.597.), a minuscule amount compared with total production of 4.9 million tonnes. The question at issue for Australia and, no doubt, also for China, is whether the Chinese population will continue to increase its beef consumption adequately in order to prevent a significant percentage of the beef produced being placed into the world market, particularly into Japan and Korea.

The Western concepts of availability of a product and availability of finance to buy that product do not necessarily apply in Chinese society. The authors of this paper feel that a more cautious approach should be taken, as there are many issues involved in Chinese attitudes to beef consumption which are not common in Western societies. It is not a simple supply and demand issue. There are cultural, historical, traditional and social issues at both an individual and societal level to be considered as well as population movement and urbanisation effects, which must be included in these considerations (Cai, Longworth & Brown 1998).

Based on the current study, it would appear that many factors related to the attitudes of Chinese people will need to be examined and understood, before per capita consumption will increase to a level where Chinese beef consumption will equal future Chinese beef production capacity.

Volume of production is not the only issue - there is also the question of beef quality. China does not have a standard quality grading system (EWCL, 1997, p.21.). The average eating quality characteristics, as well as preparation standards of Chinese beef, will need to improve during the coming years.

Some five star hotels in Beijing quote domestic Chinese beef as being equal in quality to most imported beef, particularly if sourced through the Hua An processing factory, Hebei Province. Restaurants in these hotels are experiencing an increase in beef consumption (Volain, 1997, pers.com.). The current animal genetic improvement program which is being undertaken in China, with the backing of the Central Government through the Ministry of Agriculture, by using European breeds, such as Simmental, Charolais and Limousin will inevitably provide genetic potential to produce higher quality beef. Whether feeding regimes and environmental management will support this genetic development in order to produce world standard, high quality meat remains to be seen (Zhang & Longworth, 1998a, 1998b).

The purpose of this survey was to gain an insight into the urban Chinese people's attitude to eating beef. Until the last twenty years, Chinese people did not have free market access to beef (Zhang & Longworth, 1998a). As per capita annual living expenditure for urban households has increased from 351.72 Yuan in 1985 to 1904.71 Yuan in 1996, combined beef and mutton consumption has risen from 2.04 kg to 3.29 kg respectively (SSB,1997, pp.294,95). Increase in red meat consumption has not kept pace with annual living expenditure. This household survey indicates that through lack of familiarity with beef many Chinese people fail to use it in their normal diet.

Responses to the current survey indicate the Chinese consumers' unwillingness to pay for, prepare and eat a currently unfamiliar meat product in which they appear to have little confidence.

Studies of marketing and the differences in consumer reactions to various products in different localities throughout China have indicated that China is many markets and that consumer attitudes vary considerably throughout China (Li & Samuel, 1994, Chen, Hayes & Clemens, 1998, Minter, 1998).

Materials and Method

To gain initial information about the attitudes of the average Chinese household to purchasing and preparing raw beef, a short, simple questionnaire was designed for interviewing respondents in their homes. It was envisaged that each interview would take approximately twenty minutes. There were thirty five major questions, with most of these containing subsections with numbers, or items to be circled, indicating the best fit answer to the question together with an option for respondents to add other comments. The wording of the questionnaire was modified appropriately to allow for translation and Chinese syntax. There were also five questions which required a qualitative, written statement by the respondents, which was recorded by the interviewer.

The questionnaire was first tested and modified after interviewing Chinese passengers during the thirteen hour train trip between Beijing and Fuyang City, Anhui Province.

Test respondents included males and females between twenty and fifty years of age, from as many walks of life as possible. Ten such test interviews were conducted.

The following numbers of completed questionnaires for each city were: Lixin 50; Mengcheng 48; Guoyang 50; Fuyang 51; Hefei 50; Shanghai 97; Beijing 100, giving a total of 446 completed questionnaires.

In each city, university students or local officials of bodies under the jurisdiction of the Ministry of Agriculture were employed to conduct the interviews in home units of average Chinese households. The interviewers were paid an agreed remuneration to conduct serious interviews and each interviewer was given ten questionnaires. In all cases the interviewers were allowed no more than two days to complete their task.

The data was entered into Microsoft Excel for analysis, because :

- the total sample was small, compared with the Chinese population in each site.
- much of the data was attitudinal.
- the survey was designed to indicate possible issues for further detailed studies.
- interpretation of the survey responses depended, to an extent, on a knowledge of the social and cultural attitudes of Chinese people.

Some sources of inaccuracy within this survey could have been :

- difficulties in translating the meaning of English into Chinese language.
- difficulties in interviewers asking the questions in the manner intended.
- problems with the interviewees understanding the question.
- inaccuracies with the interviewer recording the response of the interviewee.
- the exact meaning being translated from the Chinese language into English.
- problems of combining responses into categories for analysis.

Every effort was taken to minimise sources of error and, where appropriate, comparisons have been made with other published data (e.g. SSB, 1997), to assess similarity of values obtained.

Results and Discussion

Interviewers were asked to randomise their selection of respondents as much as possible. There was no way that this could be ensured. From the response data shown in Table 2, the survey was biased compared with national statistics where, of the 439 respondents, 98.4% were of the Han nationality, whereas in the national statistics, Han comprises 91.2% of the population. Most survey sites, apart from Beijing, were in areas where there is not a large Hui (Moslem) population. The interviewers would most likely have interviewed people of their own nationality.

The average ages of the respondents (Table 3) were relatively consistent across survey sites. There was a bias towards males being interviewed, the male to female ratio of respondents being 59% to 41%. Many of the interviews were conducted in the evening resulting in the male, in his traditional position as the head of the household, being

credited with the interview. The number of people contributing to household income was not recorded.

Table 2 : Nationality of Respondents

Item	Beijing	Shanghai	Hefei	Fuyang	Guoyang	Mngcheng *	Lixin	Total
Han Nationality	91	95	50	48	48	50	48	430
Hui Nationality	3	1	0	2	1	0	2	9

Source : Own survey data. * Mengcheng

The number of people in the households of respondents was slightly higher than the national average figures (Table 3) and this was particularly the case for the County cities. The average monthly incomes for each household member produced in the survey have reasonable correlation with national statistics. However, the *SSB's China Statistical Yearbook* (1997) is not specific about where the census figures were taken. It was assumed that the definitions (SSB, p. 296) could be applied to the survey sites as follows :

- Especially large cities - Beijing and Shanghai.
- Large cities - Hefei
- Medium sized cities - Fuyang
- Small cities - Guoyang, Mengcheng, Lixin.

Comparison of the survey statistics with the national averages indicate that monthly incomes per household member are relatively similar for Beijing, Hefei and Fuyang, (Table 3), but Shanghai is twice the national average and the three County cities are just over half the national average. Disposable and real incomes in Anhui Province are below the national average (SSB, p.300) and despite Lixin, Mengcheng and Guoyang Counties having the highest concentration of cattle per county in China (Zhang & Longworth, 1998a), they are geographically isolated and people have lower incomes than in areas closer to main population centres.

Table 3 : Description of Respondents

Item	Beijing	Shanghai	Hefei	Fuyang	Guoyang	Mngchng*	Lixin	Average
Age - Years (average)	41	35	34	35	37	39	37	37
Range - Years	15 - 60	20 - 50	20 - 50	20 - 50	20 - 55	20 - 55	20 - 50	
Sex - Male	45	46	35	24	45	28	21	35
Sex - Female	48	46	10	21	5	12	25	24
Sex Unknown	7	7	6	7	0	13	5	6
Monthly HHold.Inc.(Yuan)	1928	3343	1343	1386	1023	937	898	1551
Ranges HHold Inc.(Yuan)	450-6000	500-12000	500-2800	300-6200	500-2000	385-2000	202-1580	
No.in HHold	3.6	3.4	3.3	3.7	4.4	4.1	4.1	3.8
National Ave No./HHold	3.15	3.15	3.14	3.2	3.18	3.18	3.18	3.17
Ave.Inc./HHold member (Y)	535	983	407	374	233	228	219	426
National Ave (Yuan)	472	472	372	346	409	409	409	413
HHold.Inc.Zero Purch.(Y)	499	905	454	327	229	200	102	388

Source: SSB, p.300 and own survey data. * Mengcheng. Note: Hhold = household ; Y = Yuan

Apart from people in Lixin, respondents who stated that they never purchased beef had monthly incomes which were average for their city. Reasons given for not purchasing beef were (i) unfamiliarity with beef, (ii) a dislike for handling, preparing and/or eating beef, (iii) a fear of mad cow disease (Bovine Spongiform Encephalopathy, BSE), (iv) a traditional view of beef being a winter food. In Lixin, it may be interpreted that people not buying beef did so because of poverty and an inability to afford the cost of beef.

Respondents in all locations indicated that they preferred to purchase beef at least once per week. There are regional differences in the relative prices for pork and beef throughout China. Anecdotal evidence indicates that in some regions beef is cheaper than pork (southern China), whereas in other regions the reverse is true (northern China), however an exact pattern has not been established.

Seventy two percent of respondents indicated that they purchased between one and two Jin (0.5 kg to 1.0 kg) each time they purchased beef. Respondents expressed the wish for small packages of beef. It would appear that packages of 0.5 Jin to 1.0 Jin (0.25 kg to 0.50 kg) would be acceptable.

It is common for most of the shopping for a household to be carried out by a member of the grandparent's generation. This could mean that, (i) a degree of tradition applies to the foods which are purchased, (ii) a degree of frugality is applied in amounts purchased, (iii) the weight of the total shopping basket for the day needs to be kept within reasonable limits. Therefore, smaller packages of meat are preferred.

Storage problems in many households arise from lack of space and lack of refrigeration. Many households shop daily for food. This is another reason for the many suggestions for smaller packages in approximately meal sized portions.

High heat, short duration cooking methods when using a traditional wok, produce better results when using fresh food products. To be readily acceptable, beef must be

presented as a fresh, clean product, with bright colour. Respondents indicated that beef with a strong smell and a sticky feel is objectionable and therefore is avoided. Seventy nine percent of respondents stated a preference for fresh beef rather than the frozen product.

Most respondents purchased beef in single pieces. However, a significant number of people in Beijing, Shanghai, Hefei and Fuyang (the larger cities) commented that they would like the option of being able to buy beef either chopped, or sliced, ready for immediate use. Shanghai people also indicated an interest in minced beef. People in the counties stated overwhelmingly that they buy beef in single pieces. However, this may be because they have no chance to buy it in other forms.

Chinese consumers are very careful to examine meat for cleanliness. Expert butchering and hygienic presentation, with or without packaging, is sought.

Fat content does not seem to be an issue. Chinese cattle throughout the past centuries have been selected for draught purposes and appear to contain relatively little intramuscular, intermuscular or subcutaneous fat. Traditionally fat on pork has been used “to grease the wok” for cooking. Tradition and the relatively lower cost of pork still gives it preference over lean beef. Vegetable oils are now more readily available, so the need for pork fat in cooking is declining.

Concern was expressed by a number of respondents over the need for higher heat to cook beef than for other meats. An experienced Chinese chef commented that although Australian beef cooked by Chinese methods did not require more heat or cooking time than other meats, beef available to average households in China is tougher, so that it would take more time to cook than normal Australian beef in a Chinese meal (Mar, B. 1998, pers.com.).

Longer cooking time becomes an important consideration for people whose main cooking fuel is bottled gas, particularly for those living in the older apartment buildings with six to nine levels and no lifts. Gas bottles are heavy, and difficult to carry up a number of flights of stairs in a dark stairwell. This could deter some consumers from buying beef and could also be a reason some respondents suggested that cooked, or partially cooked beef be made available in shops.

A number of respondents have expressed concern at the excess moisture seen in packaged and frozen beef. Personal observation in the wet (raw/fresh) meat markets at all survey sites indicated that cattle in many cases are not bled adequately at slaughter, which, combined with lack of refrigeration, can contribute to beef having a strong odour. Beef muscle tissue in carcasses which contain blood, develop a high pH and this muscle tissue has the capacity to retain higher amounts of moisture than muscle of lower pH (Lawrie, 1991, pp.87 & 191). Higher pH also leads to quicker bacterial spoilage of meat and the development of odours (Lawrie, 1991, p.113). Meat of higher pH, e.g. 6.4 as compared with 5.4, takes longer to cook to the same degree of doneness (Cox, et. al., 1995).

Beijing respondents prefer to shop at state owned stores. Private shops, Moslem butcher shops and wholesale markets also appear to be acceptable places to purchase beef. Supermarkets are considered a lower priority.

In Shanghai, however, supermarkets are the most highly rated retail outlets, followed by state owned stores, private shops, and Moslem butchers. Wholesale markets are the least favoured. Supermarket developments in Shanghai, both government owned and private, are proliferating rapidly and people are used to shopping in them.

Respondents request development of some form of Quality Assurance program for beef in China, so that purchasers can have confidence in consistency of the product. Respondents expressed a need for a labelling system, guaranteed by the Government or some reputable authority, to provide the purchaser with confidence in product quality.

In Hefei, Fuyang and the County capitals, private shops are favoured. In Lixin the wholesale markets are more enthusiastically supported than in the other County cities.

Seventy percent of respondents stated that they like beef; five percent do not like beef and twenty five percent have “no strong feelings about it”. These comments were constant across all interview sites.

Eighty percent of respondents indicated that they purchase beef only in the Chinese winter. Four percent purchase beef in summer, twelve percent in autumn and four percent in spring. Research may indicate whether education, provision of appropriate recipes, availability of quality product and advertising could extend the buying season for beef by a number of weeks at the beginning and the end of winter. An important consideration for the timing of a marketing campaign for beef in China is that Chinese people buy beef when entertaining, particularly at the Chinese New Year celebrations.

Cooking methods for beef are mainly “wet cooking” methods. Microwaving and grilling of beef were mentioned by only seven percent of the respondents, whereas other methods of cooking were, wok (36%), boiling (41%) and Hot Pot (16%). These responses would seem to be consistent with beef being tough and difficult to cook.

Forty four percent of beef purchased by households is cooked within eight hours of purchase; sixty one percent within twenty four hours and seventy five percent of beef is cooked within four days. In Shanghai, some respondents commented that they may keep beef for a number of months before using it. This would indicate the existence of freezers and a reliable electricity supply. Shanghai respondents indicated they are willing to buy beef in frozen form.

Average figures for all survey sites indicated that beef is eaten at either lunch (51%) or at the evening meal (48%). There are considerable differences between survey sites. In Shanghai, 83% of respondents eat beef at night and 16% at lunch whereas in Beijing 58% eat beef in the evening and 36% at lunch. In Hefei there is an equal division between evening and lunch (51% to 47%). Beef eating in Fuyang and the county cities occurs mainly at lunch (80%) with zero beef being eaten at breakfast.

Fifty percent of respondents like the taste of cooked beef. Twenty two percent said that they like the smell. Does this mean that eighty percent of people dislike the smell of beef? This aspect of consumer reaction to beef should be explored further.

It is not clear from the survey whether beef consumption is increasing, decreasing, or remaining static in the individual Chinese households. In Beijing, respondents indicated that it is remaining at constant levels, Shanghai respondents indicated that beef consumption is decreasing, whereas in the other sites beef consumption is increasing slightly. These responses provide the impression that Chinese people are ambivalent about consuming beef and that a major education program may be needed to encourage a significant increase in per capita consumption within the households.

The survey indicates that there is a gender imbalance in beef consumption, despite many respondents commenting that men and women have similar preferences for beef. Men are considered to have larger appetites and more enthusiasm for eating beef. It is also indicated that the reason men consume more beef is that they go to restaurants more often for business purposes.

Respondents stated that beef is “Yang” food, or hot and aggressive as a product. Because beef is considered to give strength and stamina consistent with the aggressive and active image of the male, females in the survey indicated that they preferred not to eat it. It is not known whether advertising and the influence of the media can alter that impression for commercial purposes. There was also a perception that beef was an important addition to the male diet because men exercise more. A small number of female respondents recognised that beef contributed to women’s health. This could be a factor in an education campaign.

If the structure of the Chinese cattle industry were to change so that younger animals were slaughtered, it may be possible to use a scientific basis for modifying Chinese consumers’ attitudes through education and information e.g. energy values. The average energy values (MJ/100g edible portion) for lamb (1.24), pork (0.70), beef (0.77), veal (0.65), goat (0.69), chicken (0.82), duck (1.36), provide interesting comparisons (Diem, 1981, pp.256-258). In some Buddhist societies goat is considered to be a “cool” food and veal, based on scientific energy values, is “cooler” than goat meat. Could veal be introduced as a separate product from beef?

Households spend between twenty and sixty percent of their income on food. It is noticeable that in Lixin, the poorest County, ninety four percent of respondents spend between twenty and forty percent of their income on food, whereas in Shanghai there is a relatively even spread of expenditure between forty and seventy percent of income. The national averages vary from thirty nine percent for cities such as Shanghai, to fifty six percent of income for the county cities (SSB, 1997, p. 297). In this survey respondents confirmed that approximately thirty eight percent of their income spent on food is allocated to meat. This is slightly more than double the national averages. This is an area where further survey work to determine the correct values could be important. The consistency in responses in this survey may indicate that sampling could be biased, either in the national survey, or in this one.

Allocation of expenditure to meat and fish products within the household budget coincides reasonably well with national figures. Respondents in this survey state that they purchase more beef and mutton than the national average (beef 16% compared with 7%, and mutton 9% compared with 5%). The national figure for pork consumption (59%) is higher than at any of the survey sites (48%). Shanghai is also approximately double the national average for fish consumption (28% compared with 16%). These figures may indicate that a rapid change in Chinese eating habits is occurring.

Respondents state that they are not willing to pay more than twelve Yuan per Jin (approx. AUS\$4.62 per kg) for beef. They appear to tie the price of beef tightly to the price of pork, as they feel that the difference in cost between beef and pork should not be more than two Yuan per Jin.

Respondents overwhelmingly agreed that beef should be sold in well identified cuts, rather than in the complicated mixed cut portions currently being sold. There is no butchering and splitting of the carcass, as in Australia and Western societies, except when it is carried out in supermarket butchershops in five star hotels.

Respondents feel that quality could be improved through strict quarantine, government veterinary inspections and application of clear and enforceable government regulations concerning processing, hygiene, packaging, labelling and controlled distribution.

More efficient distribution systems between the farm and the retailer should be developed and refrigeration should be implemented. Beef should be fresh when being presented to the consumer, while the consumer should be able to see and smell the meat before purchase. Some respondents expressed a wish to be able to feel the meat before purchase. Beef should be presented in smaller portions and identifiable cuts, together with information on how to prepare and cook beef. A system of beef grading and Quality Assurance should be developed and strictly enforced.

Conclusions

1. Average figures published in national statistics are not true indicators of commercial marketing potential in China. There are significant regional differences in attitudes which need to be considered by entrepreneurs. China is not one market, but many markets.
2. Urban household beef consumption in China is increasing, but this is more likely the result of an increase in the number of households, rather than an increase in consumption within individual households.
3. Anecdotal evidence indicates that beef consumption is increasing rapidly in the food service sector, particularly through promotion in the fast food sector.
4. Chinese household consumption of beef appears unlikely to keep pace with projected production capacity.

5. Beef is disliked by some consumers because they have the concept that it is not easily digestible, is too “hot”, it is not as versatile as pork for cooking Chinese dishes, it has too strong a smell, it is too tough and catches in the teeth of older men, it is too variable in quality and too difficult and time consuming to cook and requires a hot fire for cooking.
6. Packaging and size of the portions are important marketing considerations.
7. Regulations to ensure Quality Assurance are being requested by consumers.
8. Education and advertising programs are required to modify traditional Chinese attitudes to beef meat and to assist in increasing beef consumption in the household. Education could be aimed at providing information on the selection of high quality beef, preparation of beef for cooking and cooking beef in a variety of ways.

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