

Seminar Paper on

Does Soybean Oil Cause A Major Health Problem In
Bangladesh: A Case Study

Submitted

To

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Certificate

This is to certify that the Seminar Paper on ‘‘Does soybean oil cause major health problem in Bangladesh ’ is prepared by Mr Md. Manikhar Rahman, CEO, Barishal Zillaparishad (Deputy Secretary), Ministry of Local Government as a participant of 126th Advanced Course on Administration and Development (ACAD) at BPATC, Savar, Dhaka. This paper is prepared under my guidance and supervision and the quality of the paper is a satisfactory level to submit to Course Management Team to fulfil the requirement of the Course.

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Abbreviation

CEO	Chief Executive Officer
HDL	High-Density Lipoprotein
LDL	Low-Density Lipoprotein
TGA	Triglyceride
BPA	Bisphenol A
SDG	Sustainable Development Goal
LG	Local Government

Does Soybean Oil Cause A Major Health Problem In Bangladesh: A Case Study

Abstract:

The study has been conducted to know what types of oil people are using and to identify what types of diseases they are suffering from. Data were collected randomly from 106 respondents of Barishal City Corporation including the chief executive officer. Analysed data accordingly. From data, it is found that 97% of respondents are using hydrogenated genetically soybean oil, 2% are using mustard oil and 1% using rice bran oil. From data, it is also found that soybean oil user of 37% employee being attacked by heart disease, 35% by diabetes, 28% by hypertension, 28% by obesity, 3.9% by cancer, 78% by acidity and 0.9% by autism. The employee of Barishal City Corporation are badly attacked by life-threatening diseases like heart disease, obesity, hypertension, diabetes, cancer and autism. On the other hand mustard oil user do not develop any types of above-mentioned diseases and rice bran oil user develop the only acidity. The soybean oil users are more vulnerable to heart disease, diabetes, hypertension, obesity, cancer and autism. Soybean oil is the worst type of cooking oil in the world and it is number one genetically modified food in the world. It causes cancer, heart disease, diabetes, obesity, hypertension, acidity, increasing bad cholesterol, decreasing good cholesterol, decreases immune function, may cause autism, the enemy of stomach, liver, kidney, estrogenic effect, thyroid problem and leakage of gut. It badly affects the office personnel those are not engaged in physical activities. On the hand, mustard oil is a better alternative of soybean oil. It contains a lot of health benefit. Mustard oil is a healthy oil. So, we should not use unhealthy oil like soybean oil and should use mustard, sesame, flaxseed and coconut oil for cooking purpose.

Keywords: soybean oil, major disease, mustard oil,

Introduction and literature review:

Soybean (*Glycine max*) is also called soja bean or soya bean annual legume of the pea family Fabaceae (Britannica.com). The origin of soybean plants is obscure, but botanists believe it was first domesticated in central China. The seed contains 17% oil and 48% protein. Industrially, the oil is used as an ingredient in adhesive, fertilizer, fire extinguisher, and biofuel (Adam Augustyn 2019). Like mustard oil, soybean oil is not mechanically extracted, it is chemically extracted. Soybean oil is normally produced by extraction with hexane, a nasty solvent. Hexane is an S neurotoxin. It also heated to 75 degree Celsius to coagulate soy proteins to make the oil extraction easier. Soybean oil is highly oxidative. It can rancid easily. Hydrogenation is a must to preventing oxidation. Hydrogenation is a process of adding H into vegetable oil in the presence of high temperature & pressure making it semisolid to solid. Trans fat a completely man-made fat is added to soybean oil to extend the shelf life. Trans-fats are not the healthy kind of fat (Centra group 2018). Soybean oil contains free radicals that destroy vitamin A, D, C and E and preventing from doing positive things in the body. Free radicals also destroy essential fatty acid and essential amino acid (Kummerow 2013). The soybean oil company is a multinational company. They do not use a single drop of soybean oil for cooking. Even the hog farmers do not use soybean oil mixed food for hog fattening (David Lawrance 1996). Soybean oil is a silent killer (David Lawrence 1996). 99% soybean is genetically modified & 100% are hydrogenated. Soybean oil is the worst type of cooking oil in the world. It is the most harmful ingredient in most processed foods. When soybean oil enters our body, our body does not know what to do. All the nutrients in soybean oil transform their nature due to high heating during hydrogenation. It causes cancer by interfering the enzyme's activity that prevents cancer in our body, heart disease, obesity, diabetes by interfering insulin activity, forming fatty liver, acidity, increase estrogen level, breast cancer, male & female sterility destroy thyroid function, blood clots, decreasing immune function, raise LDL and decrease HDL and artery block formation (21 bad effect of soybean oil). Some of the European countries have banned these kinds of vegetable oil. Sweden has been banned this oil since 40 years before.

formation(21 bad effect of soybean oil). Some of the European countries have banned these kinds of vegetable oil. Sweden has been banned this oil since 40 years before. There are the least numbers of cancer, obesity, diabetes, and stroke. In our country soybean oil introduced just after independence. Number of medical colleges, doctors, nurses, hospitals, clinic increasing day by day and life-threatening diseases also increasing. When people used only mustard oil they had no such type of diseases. We must not use this oil as there are many alternatives. Mustard oil is a healthy oil and better alternative of soybean oil (The India Times 2019). Earlier mustard oil was considered unhealthy for its erucic acid content. The possible health effect of erucic acid has not been studied in human to my knowledge (Haque M.S 2012). The experiment was conducted on rats. Actually erucic acid is less digested by rats. Mustard oil is healthy oil and it improves heart health, lowering cholesterol and blood pressure (American Journal of Clinical nutrition 2010). Mustard oil decreases cholesterol and improves blood cell (European journal of nutrition, December 2010). It protects the heart by increasing HDL while lowering LDL cholesterol (Dalal Tarla 2008). Mustard oil contains a proper proportion of heart-healthy fatty acid, omega 3 & omega 6 and better than olive oil (The India Times 2019).

Major diseases include cancer, heart disease, diabetes, obesity, hypertension, thyroid problem, acidity, loses of immune function, autism, estrogenic effect. Heart disease is a serious health problem in Bangladesh and a developing country. 3 out of 4 people in Bangladesh run the risk of developing cardiac diseases (Dhaka tribune Oct,2018). There are 13 to 15 lac cancer patient in Bangladesh, with about 2 lac patients newly diagnosed with cancer each year (South Asian Journal of Cancer, 2013). 19% of type 1 diabetes and equal number is undetected. Diabetes is a major cause of blindness, kidney failure, heart attack and stroke. According to WHO the national average obesity in Bangladesh is 24.2%. 2 out of 3 persons are either obese or overweight in the USA. It is increasing day by day (WHO Jan 27, 2019). 20% of adult and 40 to 65% of elderly people are attacked by hypertension (Aslam JY 2018). Bangladesh is a developing country in South Asia. According to the world health organizational support survey in 2009, there are 0.84% of children are suffering from autism. About 90% of people in Bangladesh are using

soybean oil. So, there is a direct relationship between soybean oil use and development of above mentioned life-threatening diseases.

Up to 1980 mustard oil was the main cooking oil of Bangladesh. Each farm family is allotted at least a piece of land for the production of oil seeds for the consumption of that family. After that soybean oil was given to people through the Trading Corporation of Bangladesh as ration. The healthy mustard oil was vanished by most unhealthy genetically modified (GM) soybean oil as a result of three false research findings by the USA. Research findings showed that mustard oil contains erucic acid and this has a negative health effect. Actually erucic acid is less digested by rats. The same result might be found if the experiment would be conducted by soybean oil. Later on, it is proved that erucic acid has no negative health effect on human (Maruf mohammad Dr 2010). It is proved scientifically that mustard oil has no negative health effect on human health. Mustard oil is superior to most of the imported oils. This oil has been used traditionally by our ancestors. Our neighbouring India is using mustard oil in huge quantity. Mustard oil is the number one cooking oil in Indian kitchen (My India.Food). If India can supply large quantity of mustard oil for their people why we cannot. If necessary the oil import policy should be changed for necessary correction.

Availability of quality food is our fundamental right is also stated in our constitution. Oil or fat is a very vital element of balanced diet. It is not wise to eliminate all kinds of fats from foods. The main points to be considered are whether it is healthy or unhealthy. If it is healthy we must eat, or if it is unhealthy we should not consume much. Because fat has specific functions. Formation of the cell wall, giving back up energy and production of important hormones and performing biological functions. According to WHO, 30% of human body energy should come from fats. But we are suffering from quality oil or fat. Oil is nothing but it is fat. Main oil in Bangladesh is hydrogenated genetically modified (GM). It is the worst type of cooking oil in the world. Soybean oil causes serious health hazards. On an average 18000 thousand crore, taka medicine is needed per year and treatment is ten times more than medicinal cost (a report by square pharmaceutical). The number of the hospital, medical college, doctors and nurses are increasing day by day.

But the diseases are not decreasing, it is increasing. According to the report published in The Daily Star, in every year 10 to 12 lac family is going to a marginal level due to pay for diseases. It is not possible to achieve goal 3 of SDG that is good health and well beings. For achieving SDG by 2030 we should be ensured quality oil supply, because we cannot even imagin a day without. Quality oil supply is the precondition for better health.

For the sake of this research, these following topics have been reviewed.

According to Haque, M S 2018, The Biochemical and pathological effects of palm, soybean and mustard oils on rats revealed that palm feed group had fatty liver, narrow blood vessel thickened aorta of the heart. Soybean oil feed group also showed a narrow blood vessel but mustard oil feed group showed no noticeable change in the mentioned vital organ

According to David Lawrence Dewey, 1996, Hydrogenated oils are silent killers. Research studies show that these deadly oils cause non-insulin dependent type II diabetes or hyperinsulinemia. This is a disease which can eventually burn out the pancreas and cause insulin-dependent diabetes. These changed molecular oils dramatically increase the risk of coronary heart disease, breast cancer, other types of cancers and autoimmune diseases. Over 100 research studies show how harmful these oils are to the human body.

According to The India Times, Mustard oil has a perfect blend of natural antioxidants and essential fatty acids. Both of which are extremely useful in maintaining a healthy heart. It is rich in monounsaturated fatty acids, polyunsaturated fats and few other good fats that are beneficial for the body. The oil promotes the presence of good cholesterol and reduces the build-up of bad cholesterol. This oil is a good source of omega-3 fatty acids and other healthy fats that are required by the body. The combination of good fatty acids and oils in the cooking oil not only enhances its taste but also reduces the blood fat levels. Most of

the researchers have proved that mustard oil is healthier than olive oil due to its ideal ratio of fatty acids. It has both omega-3 and omega-6 in just the correct amount that makes it a superfood for better heart health. Whereas in olive oil, this ideal proportion is missing and on top of it, the price is really high. According to a lot of studies, mustard oil is considered as one of the healthiest edible oils due to its ideal fatty acids proportion. It is also found that mustard oil can help in reducing and preventing cardiovascular diseases. And mustard oil prevents coronary artery diseases and other cardiovascular threats. Apart from keeping our blood pressure in control, this oil also prevents hypertension.

According to the article of soybean oil the most harmful ingredient in processed food, stated that the Processed food is perhaps the most damaging aspect of most people's diet, contributing to poor health and chronic disease. One of the primary culprits is high fructose corn syrup (HFCS), The second culprit is partially hydrogenated soybean oil. These two ingredients, either alone or in combination, can be found in virtually all processed foods and one can make a compelling argument that the reliance on these two foods is a primary contributing factor for most of the degenerative diseases attacking Americans today.

According to the article of Bad effect of hydrogenated oil stated that Hydrogenated oil is bad for us because it contains a high level of hydrogenated fats, called trans fats, that increase our risk of developing heart disease and other health problems. There are some foods that also naturally contain trans fats, but these kinds of fats the biggest problem when they come from artificial and processed sources, like hydrogenated oil.

According to the article of Bad effect of hydrogenated fat stated that Partially hydrogenated vegetable oils have been in the American diet since 1900. More than 50 years ago they were found to contain trans fatty acids that were different from natural fatty acids in plant oils and in animal fat. There was growing evidence that the consumption of trans fats has negative health effects, including increasing plasma lipid

levels. In 2003, the Food and Drug Administration (FDA) ruled that the amount of trans fat in a food item must be stated on the label after January 1, 2006; food items could be labelled 0% trans if they contain less than 0.5 g/serving.

According to the article of 21 bad effect of soybean oil stated that, Soybean oil can contribute to obesity, diabetes, bad for liver, inflammatory, heart disease, carry nasty solvent, estrogenic effect, cancer-causing, GMO food, breast cancer-causing, male fertility problem, blood clots

According to the article of 22 Fantastic Benefits Of Mustard Oil For our Health, Skin, And Hair stated that it is a true superhero. Reduces The Risk Of Cancer, Has Cardiovascular Benefits, A Natural Stimulant, Relieves Cold And Cough, Eases Joint Pain And Arthritis, Improves Functioning Of The Organs, Has Antibacterial, Antifungal, And Anti-inflammatory Properties, Beneficial For Asthma, Is An Excellent Insect Repellent, Whitens Teeth And Treats Dental Problems, Boosts Brain Function, Promotes Overall Health.

Research Problem:

Life-threatening diseases like cancer, diabetes, heart disease , obesity are increasing day by day in epidemic form. I think something wrong with foods. Through observation method, we see that when people used only mustard oil they had no such type of diseases. Today people are using a lot of soybean oil and they are also attracted by cancer, diabetes, heart diseases, stroke and obesity. So using soybean oil for cooking might be the cause of developing major health problem in Bangladesh.

Objectives:

1. To know what types of cooking oil people are using.
2. To identify what types of diseases caused by soybean oil?

3. To suggest alternate cooking oil.

The rationale of the study:

After the introduction of soybean oil so many people are attracted by cancer, diabetes, obesity, heart diseases, stroke. As a member of administration, I was thinking why these are happening. According to a report of The Daily Star, every year 10 to 12 lac family in our country are getting poor due to pay for disease management. Lot of research work has been done on diseases caused by hydrogenated soybean oil in abroad. In our country, one or two studies were done but not in-depth in nature. Therefore, an in-depth study is very much essential on this topic.

Key Research Question:

1. What types of oil usually used by people?
2. What types of diseases generally people are suffering from?

Conceptual Framework:

A conceptual framework is such a kind of analytical tool which practically useful as organizing devices in empirical research. One set of the scholar has applied the notion of a conceptual framework to deductive empirical research at the micro or individual study level (Shield, Rangarajan 2013). My research includes the following term.

Soybean:

Soybean belongs to pea family is a annual legume. It contains 48% protein and 17% oil. Soybean oil is mainly used for biofuel, fertilizer, fire extinguisher and painting. 99% soybean is hydrogenated 100% is genetically modified. Soybean oil the worst type of cooking oil in the world.

Major diseases:

Major diseases include cancer, heart disease, diabetes, obesity, hypertension, thyroid problem, acidity, losses of immune function, autism, estrogenic effect. Heart disease is a serious health problem in Bangladesh and a developing country. 3 out of 4 people in Bangladesh run the risk of developing cardiac diseases (Dhaka tribune Oct, 2018). There is 13 to 15 lac cancer patient in Bangladesh, with about 2 lac patients newly diagnosed with cancer each year (South Asian Journal of Cancer, 2013). 19% of type 1 diabetes and equal number is undetected. Diabetes is a major cause of blindness, kidney failure, heart attack and stroke. According to WHO the national average obesity in Bangladesh is 24.2%. 2 out of 3 persons are either obese or overweight in the USA. It is increasing day by day (WHO Jan 27, 2019). 20% of adult and 40 to 65% of elderly people are attacked by hypertension (Aslam JY 2018). Bangladesh is a developing country in South Asia. According to the world health organizational support survey in 2009, there are 0.84% of children are suffering from autism. About 90% of people in Bangladesh are using soybean oil. So, there is a direct relationship between soybean oil use and development of above mentioned life-threatening diseases.

Research methodology :

The study is qualitative in nature. The study has been based on both primary and secondary data. The primary data collected from the field through developing questionnaire of both closed and open form on the basis of research objectives and from content analysis; while the secondary sources of data from published and unpublished

literature, newspapers, journal, websites, public records and internet. Research ethics strictly followed here.

General Information of Respondents:

Information were collected from the employee of Barishal City Corporation randomly. 73% of respondents were male and 27% were female. 73% of the respondents were age group between 31 to 50, 16% were between 0 to 30 and 11% were above 50 . In case of educational qualification, 19% respondent were up to SSC, 22% were HSC and 59% were master degree and above.

Data Analysis:

Collected data from the field have been analyzed by the following aspects:

- a. Types of oil used by respondents.
- b. About alternate oil use
- c. About the health problem of oil
- d. People are suffering from what type of diseases

Question 1:

Regarding oil use by the respondents;

Table 1: Oil used by the respondent

Name of Oil	Soybean	Mustard	Rice Bran
No of Response	102	3	1

From the above table, we see that 102 respondents are using soybean oil, 3 using mustard oil and one respondent using rice bran oil for cooking purpose. About 97% of respondent was use soybean oil.

Question 2: Regarding alternate oil use, if we summarize the answers, we get the following result.

Table 2: About alternate oil use

Response	High price	Scarcity	Not known
No of respondent	50	21	35

From the above table we see that 50 out of 106 respondents do not use alternate oil for a high price, 21 not use because of scarcity of quality oil and 35 do not know the answer. About 50% employee of Barishal City Corporation does not use alternate oil for a high price.

Question 3: Regarding health hazard of oil if we summarize the answers, we get the following result.

Table 3: About health issue

Response	Yes	No
No of respondent	32	74

From the above table, we see that 32 out of 106 respondents know about the health hazard of oil and 74 respondents do not know the health hazard of oil. About three fourth people of Barishal City Corporation do not know that oil causes a health problem.

Question 4: Regarding types of diseases people are suffering from, if we summarize the answers, we get the following result.

Table 4: About the name of diseases and % of attack

Name of diseases	Heart	Diabetes	Obesity	Hypertension	Acidity	Cancer	Autism
%attack	37	35	28	38	78	4	1

From the above data, we see that 37% respondents are attacked by heart disease, 37% by diabetes, 28% by obesity, 38% by hypertension, 78% by acidity, 3.9% by cancer and 0.9% by autism. The employee of Barisal city corporation are badly attacked by heart disease, diabetes, hypertension and acidity. Cancer and autism are also present similar to national and international rate.

On the other hand 3, mustard oil user are not attacked by any of the above-mentioned life-threatening diseases. Only one person using rice bran oil and he has acidity.

Findings:

From the analysis of interviewing of 106 respondents from Barishal City Corporation, we found that 97% of respondents use soybean oil, 2% use mustard oil and 1% use rice bran oil respectively. 70% of respondents do not know the health hazards caused by cooking oil. respondents do not use alternate oil due to high price, respondents do not use alternate oil due to scarcity of alternate oil. The respondents said that if the price of alternate oil will be a little bit reduced and if available they will use alternate oil. 37% employee is attacked by heart disease, 35% by diabetes, 28% by obesity, 38% by hypertension, 78% by acidity, 3.9% by cancer and 0.9% by autism. The employee of Barishal City Corporation are badly affected by life-threatening diseases like cancer, heart, diabetes, obesity, hypertension, acidity and autism.

Table 5: Comparison between soybean oil and mustard oil.

serial no	topics	soybean oil	mustard oil
1	Definition	legume crop, protein rich	cabbage type crop used for oil purpose

2	Type	GM Food/100%	Natural /organic food.
3	Genesis	Crossing between 2 different plants of 2 species	Natural crossing
4	Oil content	17%	35-38%
5	Extraction	Chemically with hexene	Mechanically extracted
6	Processing	Trans fat is used	No trans fat is used
7	Addition of H	Hydrogenation is a must	Not necessary
8	Smoke point	Low,160c for unrefined	High,250c for unrefined
9	Beneficialomega3,6	2:1	7.4:1
10	Good cholesterol	It decreases HDL	It increases HD
11	Bad cholesterol	Increase	Decrease
12	TGA	Increase	Decrease
13	Total cholesterol	Increase	Decrease
14	High-temperature cooking	Creates carcinogen	It does not produce carcinogen
15	heart disease	Increase	Heart friendly
16	Diabetes	Increase	Antidiabetic
17	Artery blocking	Causes block formation	Hinders artery block formation
18	Stroke	It causes stroke	Anti stroke
1	Obesity	Increase	Decrease
20	Cancer	Cancer-causing	Anticancer
21	Acidity	Causes acidity	Decrease
22	Hypertension	Increase	Decrease
23	Thickness of blood	The sudden rise of blood thickness	Decreases blood thickness
24	Fatty liver	Causes fatty liver	It is liver friendly
25	Vitamin	Devoid of vitamin A,C,D,@E	It contains vitamin A,C.D@E
26	Thyroid problem	Worst for the thyroid gland	No negative effect found
27	Immune function	Badly decrease	Boost up immune function
28	Infertility	Causes infertility	Keep intact fertility
2	Autism	It may cause autism	No connection found so far
30	Ageing	Accelerates ageing process	Slow ageing process
31	Life expectancy	Shorten the life	Food for long life
32	Sex	Decrease	Intact
33	Stamina	Decrease	It increases stamina
34	liver function	Enemy of liver	Liver friendly
35	Stomach function	Enemy of stomach	Stomach friendly
36	Kidney function	Enemy of kidney	Kidney friendly
37	Estrogenic effect	Increase estrogenic and cause hormonal imbalance	No estrogenic effect found
38	Gut function	Cause leakage of gut	Gut friendly
39	food enzyme	Destroyed	Intact
40	BPA	Contain BPA	Not contain
41	Uric acid	Increase the uric acid level	It decreases uric acid
42	Herbicide	Deadly poisonous	No such type of chemical

		glyphosate sprayed	sprayed
43	Toxicities	It causes toxicity in the body	It detoxifies the human body
44	Microbial activit	Susceptible to infection	Anti microbial

Table 6: Bangladesh soybean oil imports by the year

Market Year	Imports	Unit of Measure	Growth Rate
1964	52	(1000 MT)	NA
1965	57	(1000 MT)	9.62 %
1966	40	(1000 MT)	-29.82 %
1967	12	(1000 MT)	-70.00 %
1968	55	(1000 MT)	358.33 %
1969	30	(1000 MT)	-45.45 %
1970	40	(1000 MT)	33.33 %
1971	67	(1000 MT)	67.50 %
1972	35	(1000 MT)	-47.76 %
1973	23	(1000 MT)	-34.29 %
1974	46	(1000 MT)	100.00 %
1975	35	(1000 MT)	-23.91 %
1976	35	(1000 MT)	0.00 %
1977	19	(1000 MT)	-45.71 %
1978	40	(1000 MT)	110.53 %
1979	53	(1000 MT)	32.50 %
1980	32	(1000 MT)	-39.62 %
1981	43	(1000 MT)	34.38 %
1982	56	(1000 MT)	30.23 %
1983	40	(1000 MT)	-28.57 %
1984	37	(1000 MT)	-7.50 %
1985	50	(1000 MT)	35.14 %
1986	127	(1000 MT)	154.00 %

1987	129	(1000 MT)	1.57 %
1988	135	(1000 MT)	4.65 %
1989	288	(1000 MT)	113.33 %
1990	235	(1000 MT)	-18.40 %
1991	240	(1000 MT)	2.13 %
1992	285	(1000 MT)	18.75 %
1993	285	(1000 MT)	0.00 %
1994	425	(1000 MT)	49.12 %
1995	275	(1000 MT)	-35.29 %
1996	235	(1000 MT)	-14.55 %
1997	260	(1000 MT)	10.64 %
1998	510	(1000 MT)	96.15 %
1999	481	(1000 MT)	-5.69 %
2000	503	(1000 MT)	4.57 %
2001	406	(1000 MT)	-19.28 %
2002	383	(1000 MT)	-5.67 %
2003	332	(1000 MT)	-13.32 %
2004	228	(1000 MT)	-31.33 %
2005	262	(1000 MT)	14.91 %
2006	327	(1000 MT)	24.81 %
2007	401	(1000 MT)	22.63 %
2008	258	(1000 MT)	-35.66 %
2009	354	(1000 MT)	37.21 %
2010	377	(1000 MT)	6.50 %
2011	439	(1000 MT)	16.45 %
2012	400	(1000 MT)	-8.88 %
2013	442	(1000 MT)	10.50 %
2014	508	(1000 MT)	14.93 %
2015	647	(1000 MT)	27.36 %
2016	830	(1000 MT)	28.28 %
2017	859	(1000 MT)	3.49 %
2018	1038	(1000 MT)	20.84 %
2019	1050	(1000 MT)	1.16 %

Source: United States Department of Agriculture.

Major Challenges Of Supply Alternate Cooking Oil:

There are many challenges of supply alternate cooking oil like mustard are as follows:

1. Production of the low amount of mustard oil.
2. Relatively higher price.
3. The mindset of the people.
4. Competition with other rabi crops.
5. Lack of sufficient loan for marginal farmers.
6. Lack of timely loan
7. In case of commercial production quality deterioration will happen.

Recommendations:

From the above-mentioned findings, we found that soy bean oil causes different health hazards. On the other hand mustard oil is a healthy oil and contains a lot of health benefit. The following points should be taken into considerations:

1. Soybean oil should be banned step by step.
2. Oil import policy of the government should be revised for necessary correction

3. Necessary steps should be taken for the production of mustard.
4. The marginal farmers should be given collateral free loan.
5. Necessary steps should be taken for the production of other oil seeds like sesame, flaxseed , coconut.
6. Fallow land during rabi season should be taken under mustard, sesame, flaxseed production.
7. The further elaborate research programme should be taken in connection.
8. More fund should be allocated for research.
9. Especial incentives should be given for organic/natural farming.
10. Indigenous/local variety should be preserved for the future.

Conclusion:

Soybean oil is the worst type of cooking oil in the world and it is also the number one genetically modified food in the world. It is a silent killer. Soybean oil causes heart disease, diabetes, obesity, hypertension, acidity, cancer, increase LDL, decrease HDL, decrease immune response, may cause autism, enemy of stomach, liver, kidney, estrogenic effect, thyroid problem. This oil adversely affect the health of office personnel who are not engaged in physical activity. On the other hand, mustard oil is a better alternative to soybean oil. It contains a lot of health benefit. Mustard oil is a healthy oil. So; we should not use unhealthy soybean oil and should use extra virgin mustard, sesame, flaxseed oil for cooking purpose.

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Annexure-A

Questionnaire for collecting data for cooking oil use

1. Name :
2. Fathers/Husband name :
3. Educational Qualification :
4. Age :
5. No. of family member :
6. Address :
 - (a) village/ward :
 - (b) upazilla :
 - (c) zilla :

7. What types of oil do you use in cooking purpose ? please give (✓) mark.

Soybean

mustard

coconut

rice bran

sesame

olive

8. How long do you use?

.....

9. In addition , do you use any other oil?

Yes

No

10. If yes please mention name

11. Do you know oil causes health hazard?

Yes

No

12. Why do you not use alternate oil?

.....

13. How much oil do you use in a month?

.....

14. You or your any family member are attacked the following diseases. please give (✓) mark.

Heart
disease

diabetes

hypertension

obesity

cancer

acidity

Autism

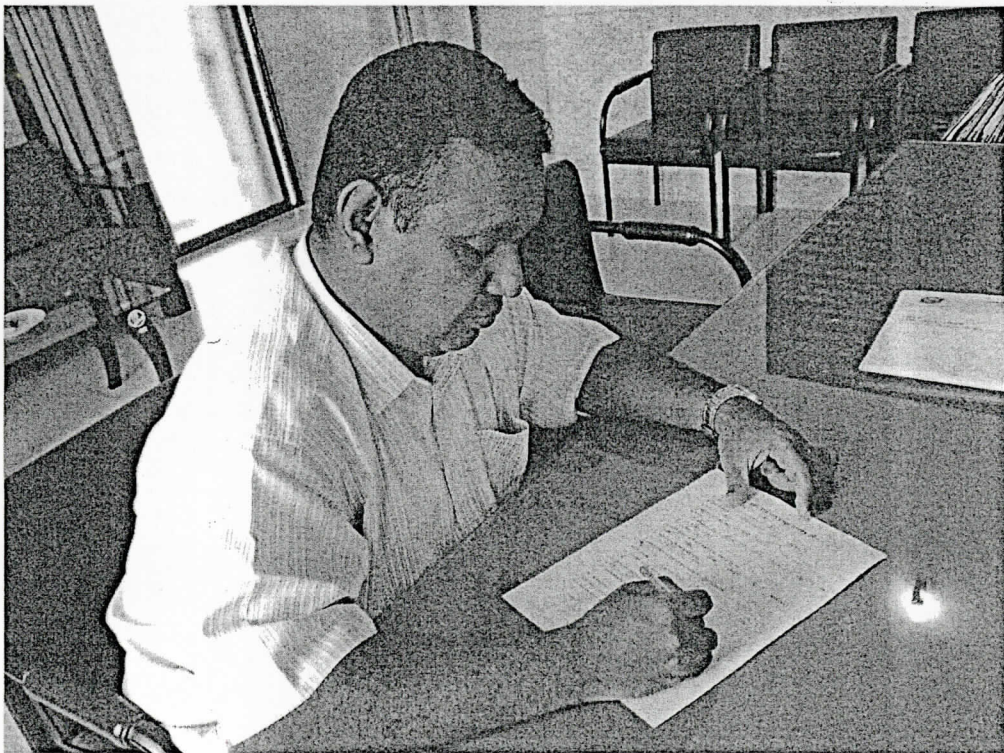
.....

Signature of respondent

ANNEXURE-B



Photograph of Barishal Ctiy Corporation



Photograph of data collection