

**Government Degree College for Women,
Wanaparthy, Telangana State
(Affiliated to Palamuru University, Mahabubnagar)**

Department of Chemistry



Academic Year : 2017-2018

A Project Work on

**“ FOOD ADULTERATION - A STUDY IN
VARIOUS HOUSEHOLDS OF GDC (W)
WANAPARTHY STUDENTS ”**

**Submitted by
Students of III B.Sc. BZC:**

- 1. M. Susmitha**
- 2. V. Srilatha**
- 3. A. Kavitha**
- 4. B. Shireesha**
- 5. J.Yamuna**

Name of the Guide : Mrs. B Jyothi, Asst. Prof. in Chemistry

**GOVERNMENT DEGREE COLLEGE FOR WOMEN
WANAPARTHY
DEPARTMENT OF CHEMISTRY**



**A Project Work on
FOOD ADULTERATIONS – A STUDY IN
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Submitted by:

- 1. M. Susmitha (B.Sc BZC III yr)**
- 2. V. Srilatha (B.Sc BZC III yr)**
- 3. A. Kavitha (B.Sc BZC III yr)**
- 4. B. Shireesha (B.Sc BZC III yr)**
- 5. J. Yamuna (B.Sc BZC III yr)**
- 6. K.Shailaja (B.Sc BZC III yr)**

Guided by:

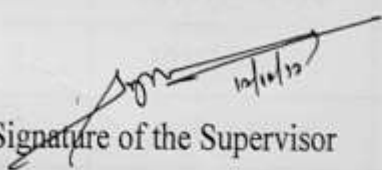
**Smt. B. JYOTHI
Asst. Prof of Chemistry**

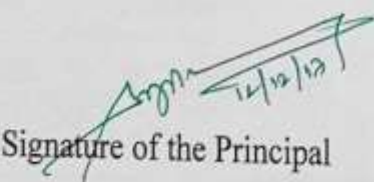
CERTIFICATE

This is to certify that

1. M. Susmitha (B.Sc BZC III yr)
2. V. Srilatha (B.Sc BZC III yr)
3. A. Kavitha (B.Sc BZC III yr)
4. B. Shireesha (B.Sc BZC III yr)
5. J. Yamuna (B.Sc BZC III yr)
6. K. Shailaja (B.Sc BZC III yr)

have completed their project work on Food Adulterations – A Study in various households of GDC (W) Wanaparthy students . They have successfully prepared this project report in the Chemistry laboratory of GDC Women wanaparthy.


Signature of the Supervisor


Signature of the Principal

PRINCIPAL
GOVT DEGREE COLLEGE FOR WOMEN
Wanaparthy -509 103.

DECLARATION

We the following students studying B. Sc III year at Govt. Degree College for Women, Wanaparthy during the academic year 2017-18 hereby declare that this is our original project work on Food Adulterations – A Study in various households of GDC (W) Wanaparthy students and submitted under the guidance of Smt. B. Jyothi Asst. Prof of Chemistry.

S.No	Hall Ticket Number	Name of the student	Signature
1	301915445501	M. Susmitha	M. Susmitha
2	301915445547	V. Srilatha	V. Srilatha
3	301915445570	A. Kavitha	A. Kavitha
4	30191544550	B. Shireesha	B. Shireesha
5	30191544530	J. Yamuna	J. Yamuna
6	30191544568	K. Shailaja	K. Shailaja

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Aims and Objectives:

Food is one of the basic needs for every living being. But now a day's foods are affected by adulterants. Adulteration is a substance which reduces the vital importance of food. Some of the common adulterants are argemone oils, castor oils in edible oils; vanaspathi in ghee; chalk powder in milk ,sugar and flour; which lead to various disorders like Anaemia, abortion, paralysis, brain damage, cancer etc.

Our aim is to study or evaluate the presence of adulterant from daily used food stuffs like Milk, Edible oil, Black pepper, Sugar, Chilli powder, Turmeric powder. These samples are collected from different households of Govt. Degree College for women Wanaparthy students. Many of these food materials have been brought from their local grocery stores and checked the presence of individual adulterants by qualitative chemical analysis. The colour change of the sample according to the reagents indicates the presence of different adulterants.

Our major objective is to create awareness among the students and their families regarding the quality of daily used household food materials. This information can help them to grow the food safety and also they can be aware about the food brands for a healthy life.

Introduction

An adulterant is a chemical substance which should not be contained within other substances (e.g. food, beverages, and fuels) for legal or other reasons. The addition of adulterants is called adulteration. Adulteration is the act of intentionally debasing the quality of food offered for sale either by mixture or substitution of inferior substance or by the removal of some valuable ingredient.

In the past few decades adulteration of food has become one of the most serious problems. Consumption of adulterated food causes diseases like cancer, asthma, ulcer, etc. Majority of adulterants used by the shopkeepers are cheap substitute which are easily available.

Food is adulterated to increase the quantity and make more profit. The food is sucked of its nutrients and the place where the food is grown is often contaminated. For example: Milk is mixed with water. Vanaspati is used as an adulterant for ghee. Ergot is used as an adulterant for cereals. Chalk-powder is used as an adulterant for flour. Chicory is used as an adulterant for coffee. Papaya seeds are used as an adulterant for pepper. Brick-powder is used as an adulterant for chilly-powder. Tamarind seed powder is used as adulterant for coffee. Wood powder is adulterated for turmeric and dhaniya powder.

In order to prevent adulteration of food products by dishonest traders the government has issued the prevention of food adulteration act. The bureau of Indian standards is the agency in India that provides the certificate of reliability to food manufacture in India.

Materials and Methodology

Various food samples like milk, sugar, Ghee, chili powder, turmeric powder and oils/fats are collected from the students of GDC (W), Wanaparthy from their houses.

The methodology used to detect the adulteration in the above samples is mentioned below.

1. To detect the presence of adulterants in sugar.

- ✦ A Small amount of sugar was taken in a test tube and shaken with little water. Pure sugar dissolved in water but insoluble impurities didn't dissolve.

2. To detect the presence of paraffin wax and hydro carbon in vegetable ghee.

- ✦ A small amount of unsaponifiable matter of oil was heated with acetic anhydride in a test tube. Small droplets of oil observed on the surface of unused acetic anhydride indicate the adulteration of oil with paraffin wax or hydrocarbon.

3. To detect the presence of adulterants (Argemone oil) in oil and butter

- ✦ About 5ml. of oil was taken in a test tube. Few drops of Conc. Nitric acid was added into it and contents were shaken well. Presence of orange color indicated the presence of argemone oil.

4. To detect the presence of adulterants in a given sample of chili powder.

- ✦ To a sample of chili powder, Dil. Nitric acid was added. The solution was filtered and two drops of Potassium iodide were added into it. No yellow ppt. indicated the absence of lead salts in a chili powder.
- ✦ A small amount of red chili powder was added in a beaker containing water. Settling of some powder at the bottom and floating pure chili powder over water indicates the presence of brick powder in a given sample.

Observation and Results

1		Student Name: M. Susmitha H.T. No.: 301915445501		Village: Wanaparthy	
S. No.	Food stuff	Quantity taken	Observation	Adulterant	
1	Sugar	20gms	No brisk effervescence seen	No Chalk Powder or washing soda present.	
2	Ghee	20gms	No Pink color obtained	Vanaspathi absent.	
3	Chili powder	10gms	a. No yellow ppt. b. No Setting of brick powder	No lead salts and No brick powder.	
4	Turmeric powder	10gms	No effervescence	No Chalk Powder	
5	Oil	20gms	orange color not obtained	Argemone oil is absent	
6	Milk	10ml	No Color change	No Starch	

2		Student Name: Shainas begum H.T. No.: 301915445502		Village: Pangal	
S. No.	Food stuff	Quantity taken	Observation	Adulterant	
1	Sugar	20gms	No brisk effervescence seen	No Chalk Powder or washing soda present.	
2	Ghee	20gms	Pink color obtained	Vanaspathi ghee present.	
3	Chili powder	10gms	a. No yellow ppt. b. No Setting of brick powder	No lead salts and No brick powder.	
4	Turmeric powder	10gms	No effervescence	No Chalk Powder	
5	Oil	20gms	orange color not obtained	Argemone oil is absent	
6	Milk	10ml	No Color change	No Starch	

Conclusions:

Conclusions

In the present study we obtained six (6) different food samples from 96 student households. We found that the food samples that they are using in their houses are adulterated. The following table shows the percentage of adulteration in the food samples.

S. No	Food Sample	Common adulterants	Percentage of adulteration
1.	Oil	Argemone oil	3%
2	Ghee	vanaspathi	74%
3	Milk	Water and Starch	95% and 0%
4	Chili powder	Brick powder	7.2%
5	Sugar	Chalk powder, Rava	26%
6	Turmeric powder	Colored Chalk powder	16.6%

From the above observations and findings we conclude that the oil used by majority of student families are not adulterated with argemone oil (3% adulteration - oil brought from local shops with low cost), ghee used in majority are adulterated with vanaspathi (74% adulteration), milk adulterated with water is seen in 95% cases - for more profit, chili powdered adulterated 7% with brick powder, sugar and turmeric powder is adulterated with chalk powder with 26% and 17% respectively.

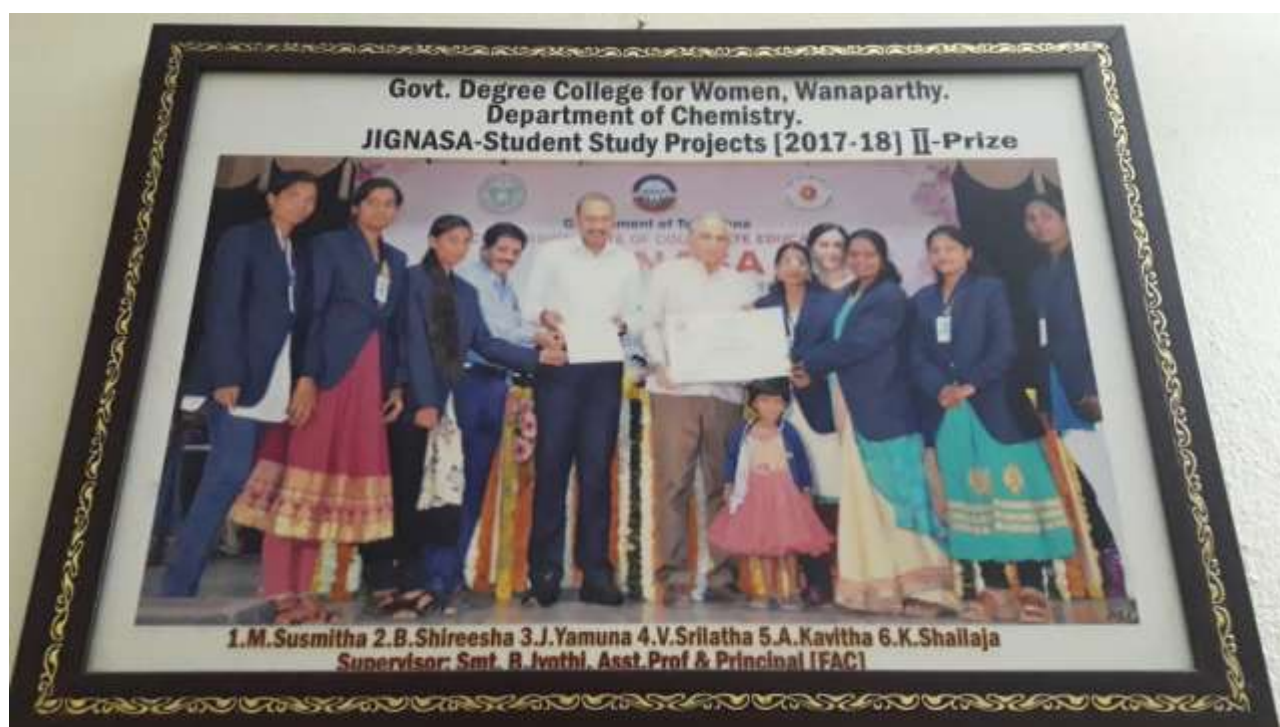
We conclude that the oil used by majority of student families are not adulterated with argemone oil (3% adulteration-oil brought from local shops with low cost), ghee used in majority are adulterated with vanaspathi(74% adulteration), milk adulterated with water is seen in 95% cases- for more profit, chilli powdered adulterated 7% with brick powder, sugar and turmeric powder is adulterated with chalk powder with 26% and 17% respectively.

➤ Photo Proofs





➤ Certificates





Government of Telangana
Commissionerate of Collegiate Education

Certificate of Participation

Awarded to

B. JYOTHI

GDC (W) WANAPARTHY
for presenting study project on

FOOD ADULTRATION - A STUDY IN VARIOUS


HOUSEHOLDS OF GDC (W)
at

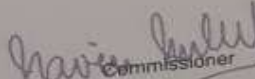
JIGNASA

State Level Presentation Programme
held from

18th to 26th January, 2018.

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Commissioner



Government of Telangana
Commissionerate of Collegiate Education

Certificate of Merit

This Certificate is awarded to **Mrs. B. Jyothi,**
Assistant Professor of Chemistry, GDC (W),
Wanaparthi in recognition of her Outstanding Role as a
Supervisor for Jignasa-State Level Student Study Projects
presentation on the topic **Food Adulteration - A Study**
of Various households of GDC (W) Wanaparthi in
Chemistry for the academic year 2017-18.

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